

Public Information Meeting

* 08-10-20 *

Town of Allenstown New Hampshire

Hazard Mitigation Plan Update 2020



2017 Oct – Wind Storm Home Destruction
Photo courtesy of Paul St. Germaine, Fire Dept



2020 Mar - Roadway Washout, Deerfield Rd
Photo courtesy of Paul St. Germaine, Fire Dept

Adopted by the Allenstown Board of Selectmen
Month xx, 2020

NHHSEM/FEMA Approved Month xx, 2020

Town of Allenstown

New Hampshire

Hazard Mitigation Plan Update 2020

Selectmen Adopted Month xx, 2020
NHHSEM/FEMA Approved Month xx, 2020



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1 PLANNING PROCESS

The Town’s Hazard Mitigation Committee reformed to rewrite the Plan into a more concise format and to incorporate the newest material required by FEMA in addition to updating the Town’s newest information since **2015**. This Planning Process Chapter contains information previously available in the Introduction Chapter of the **Plan Update 2015**. Expanded public participation steps were taken and a new plan development procedure was used as documented in the Methodology section.

Certificate of Adoption, 2020

Town of Allenstown, NH
Board of Selectmen
16 School Street
Allenstown, NH 03275

A Resolution Adopting the Allenstown Hazard Mitigation Plan Update 2020

WHEREAS, the Town of Allenstown has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **Hazard Mitigation Plan Update 2020** including but not limited to flooding, high wind events, severe winter weather, and fire, resulting in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Town of Allenstown has developed and received conditional approval from the NH Homeland Security and Emergency Management (NHHSEM) for its **Hazard Mitigation Plan Update 2020** under the requirements of 44 CFR 201.6; and

WHEREAS, public and Committee meetings were held between **February** through **August 2020** regarding the development and review of the **Hazard Mitigation Plan Update 2020**; and

WHEREAS, the **Plan** specifically addresses hazard mitigation strategies, and Plan maintenance procedures for the Town of Allenstown; and

WHEREAS, the **Plan** recommends several hazard mitigation actions (projects) that will provide mitigation for specific natural hazards that impact the Town of Allenstown with the effect of protecting people and property from loss associated with those hazards; and

WHEREAS, adoption of this Plan will make the Town of Allenstown eligible for funding to alleviate the effects of future hazards; now therefore be it

Town of Allenstown, NH Hazard Mitigation Plan Update 2020

1 PLANNING PROCESS

RESOLVED by Town of Allenstown Board of Selectmen:

The **Hazard Mitigation Plan Update 2020** is hereby adopted as an official plan of the Town of Allenstown; The respective officials identified in the mitigation action plan of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them;

Future revisions and Plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution; and

An annual report on the progress of the implementation elements of the Plan shall be presented to the Board of Selectmen by the Emergency Management Director or designee.

IN WITNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of Allenstown this xxrd day of Month, 2020.

ATTEST

Board of Selectmen

Sandra McKenney, Chairwoman date

Maureen D. Highman, Selectwoman date

SEAL

Scott W. McDonald, Selectman date

Town Clerk

Kathleen Pelissier, Town Clerk

Plan Process Acknowledgments

The Board of Selectmen-appointed Hazard Mitigation Committee was comprised of these individuals on behalf of their respective Departments, Boards or Committees who met between **February** through **August 2020** to develop the **Allenstown Hazard Mitigation Plan Update 2020**:

- **Brian Arsenault**, Allenstown Code Enforcement Officer
- **Jeffrey Backman**, Allenstown Wastewater Superintendent
- **Dawna Baxter**, Allenstown Building & Fire Dept Administrative Assistant
- **Marc Boisvert**, Allenstown Highway Department Foreman
- **Denise DeBlois**, Allenstown Deputy Emergency Management Director, Deputy Health Officer
- **Ronald Eisenhart**, Allenstown Emergency Management Director, Health Officer
- **Derik Goodine**, Allenstown Town Administrator
- **Sandra McKenney**, Allenstown Board of Selectmen Chair
- **Michael O'Meara**, Allenstown Planning Board Chair
- **Chad Pelissier**, Allenstown Highway Department Road Agent
- **Paul St. Germaine**, Allenstown Fire Department Chief
- **Michael Stark**, Allenstown Police Department Chief

The following Central NH Regional Planning Commission (CNHRPC) staff contributed to the development of the Hazard Mitigation Plan Update:

- **Stephanie Alexander**, CNHRPC Senior Planner
- **Craig Tufts**, CNHRPC Principal Planner (GIS mapping)

Several other Town-affiliated individuals or other agency representatives attended one or more Committee meetings and/or contributed information to the content of the Plan. Members of the public* **(3)** participated as fully as appointed members in the Hazard Mitigation Committee meetings.

- **Evan McIntosh**, Allenstown Fire Department Captain
- **Kayla Henderson**, NH Homeland Security and Emergency Management Field Representative
- **Stacey Elliott**, Capital Area Public Health Network Director
- **Otto Rusch**, Granite State Power, Safety & Training Manager*
- **Robin Richards**, Bear View Crossing Cooperative*
- **Andrew Sylvia**, Union Leader*

** See Member of the Public definition on Page 6*

Authority

In 2000, the President enacted the Disaster Mitigation Act 2000 (DMA) which requires states and municipalities to have local adopted and FEMA approved natural hazard mitigation plans in place to be eligible for disaster and mitigation funding programs such as the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance (HMA) programs, including Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, and Pre-Disaster Mitigation Program. New Hampshire is awarded funds based upon the completeness of its State Plan and the number of local plans.

As a result of the DMA, funding was provided to state offices of emergency management, including the New Hampshire Homeland Security and Emergency Management, to produce local (municipal) hazard mitigation plans. To remain in compliance with the DMA, the Town of Allenstown is required to submit for FEMA approval a revised **Hazard Mitigation Plan Update** every five years.

The New Hampshire Homeland Security and Emergency Management (NH HSEM) produced its latest approved *State of New Hampshire Multi-Hazard Mitigation Plan 2018* in **October 2018**. The development of the State's Plan allows for New Hampshire to receive funding programs to provide to communities in the event of disasters or for mitigation.

Prior versions of the Town's Hazard Mitigation Plan are noted in the **Final Plan Dates** section. A **2018** Pre-Disaster Mitigation (PDM) grant provided 75%/25% funding for the Town to update its prior Plan through the Central NH Regional Planning Commission. The 25% match required by the Town was provided by in-kind staff and volunteer time and labor.

This **Allenstown Hazard Mitigation Plan Update 2020** has been developed in accordance with the Disaster Mitigation Act of **2000** and the *FEMA Local Mitigation Plan Review Guide, October 1, 2012* and effective one year later. The most recent Plan development standards provided by FEMA Region I have also been incorporated. The planning effort of the Town is a regular process and this Plan is considered a "living document."

The new Allenstown Hazard Mitigation Committee was established by the Board of Selectmen to begin meeting **January 2020** and guided the development of the Plan. The Committee consisted of the Town's Emergency Management, Town Administration, Fire and Rescue Departments, Highway Department, Police Department, Planning Board, and Wastewater Department while several additional Town representatives attended and participated in meetings. Public participants were active with Committee activities.

The attendees of the meeting process are noted in the **Acknowledgements**. The Central NH Regional Planning Commission, of which Allenstown is a member, contributed to the development of this Plan by facilitating the meeting and technical processes, working with the Committee and its members to obtain information, preparing the document, and handling the submissions to NH HSEM and FEMA.

Methodology

The **Allenstown Hazard Mitigation Plan Update 2020** was developed over a six-month period with a group of Town staff members and volunteers, public participants and the CNHRPC comprising the majority of the Hazard Mitigation Committee. The **2020** methodology for Plan development is summarized in this section. The **Hazard Mitigation Plan** is designed differently from the **2015 Plan** with the intent to better conform to the current approvable Central NH Region format and incorporating the new **2018 State Multi-Hazard Mitigation Plan** items, with the purpose of easier updating and implementation while meeting FEMA’s requirements. The Plan roughly follows the **FEMA Local Mitigation Planning Handbook, 2013** by using its terminology and some of its tasks, ensuring **Allenstown’s Plan Update 2020** begins to follow a standardized approach to Plan construction and content endorsed by FEMA. Many of the vital sections of the **2020 Plan Update** will be contained in the chapter **10 APPENDICES** for easier display, usage, sharing, and update.

MEETINGS AND DUTIES

The meetings and tasks of the Hazard Mitigation Committee were dictated by Agendas and how much the Committee was able to complete for each Agenda is displayed in **Table 1**. Work Sessions were designed to accomplish what could not be completed at meetings due to time constraints and additional information to process.

Table 1
Meeting Schedule and Agenda Activities

Meeting	Date	Agenda Activities – See APPENDIX C
Meeting 1	02-25-20	Discuss Process and Schedule; Review Declared Disasters and Public Assistance Funding to Allenstown; Develop New Hazard Identification and Risk Assessment (HIRA), Begin to Identify Potential and Past Hazard Locations 2015-2020; Prepare for Maps 1-2 and Flood Map Revisions; Schedule Meetings
Work Session 1 <i>Remote via Webex</i>	03-24-19	Finish Identifying Recent Past Hazard Events 2014-2020; Update Critical and Community Facilities Vulnerability Assessment and Develop Problem Statements; Status of Maps 1-2 and New Flood Hazards Map
Work Session 1.2 <i>Remote via Webex</i>	03-31-20	Update Critical and Community Facilities Vulnerability Assessment and Develop Problem Statements; Status of Maps 1-2 and New Flood Hazards Map
Meeting 2 <i>Remote via Webex</i>	04-07-20	Finalize Problem Statements and Identify Those to Utilize as NEW 2020 Mitigation Actions; Review and Update Goals and Objectives for 2020; Department Roundtable- Review & Update of Capability Assessment
Work Session 2 <i>Remote via Webex</i>	04-14-20	Finalize Problem Statements and Identify Those to Utilize as NEW 2020 Mitigation Actions; Review and Update Goals and Objectives for 2020; Department Roundtable- Review & Update of Capability Assessment

Meeting	Date	Agenda Activities – See APPENDIX C
Work Session 2.2 <i>Remote via Webex</i>	04-21-20	Department Roundtable- Review & Update of Capability Assessment
Meeting 3 <i>Remote via Webex</i>	05-05-20	Determine Status of the 2015 Mitigation Actions; Develop Mitigation Action Plan 2020
Work Session 3 <i>Remote via Webex</i>	05-12-20	Develop Mitigation Action Plan 2020; Begin to Prioritize Mitigation Action Ranking Scores for Action Achievability
Work Session 3.2 <i>Remote via Webex</i>	05-19-20	Continue Mitigation Action Plan 2020; Begin to Prioritize Mitigation Action Ranking Scores for Action Achievability
Work Session 3.3 <i>Remote via Webex</i>	05-26-20	Prioritize Mitigation Action Ranking Scores for Action Achievability; Overview of Meeting 4; Work Session 4 and Public Information Meeting; Meeting Schedule
Work Session 3.4 <i>Remote via Zoom</i>	06-02-20	Complete Mitigation Action Ranking Scores for Action Achievability; FYI Overview of Meeting 4; Work Session 4 and Public Information Meeting; Meeting Schedule
Meeting 4 <i>Remote via Webex</i>	06-30-20	Review Draft Hazard Mitigation Plan Update 2020; Overview of Work Session 4 Tasks; Schedule Public Information Meeting
Work Session 4 <i>Remote via Webex</i>	07-14-20	Review Draft Hazard Mitigation Plan Update 2020; Interim Hazard Mitigation Plan Implementation 2020-2015; Prepare for Public Information Meeting; Review Plan Approval Process; Prepare for Board of Selectmen Adoption Meeting
Public Information Meeting <i>Remote via Zoom</i>	08-10-20	HMC members present sections of the Plan to the public in a brief question and answer format meeting. Describe hazards and mitigation Actions. Maps will be available.

Source: Allenstown Hazard Mitigation Committee Agendas, 2020

For the first meeting, all attendees signed an attendance sheets and a meeting match timesheets; for all remaining meetings, since the meetings were held remotely, CNHRPC staff took a roll call during each meeting and completed a meeting match timesheet for participants documenting their time at the meetings. The Committee members worked to complete the Agendas, including developing the **Hazard Risk Assessment**, **Critical and Community Facilities Vulnerability Assessment**, **Capability Assessment**, and **Mitigation Action Plan**, completing the **Enhanced STAPLEE Action Prioritization**, etc. along with input from members of the public and guests. The agendas and attendance sheets are included in **APPENDIX C** of the Plan.

The specific meeting tasks are described in detail on the Agendas in **APPENDIX C**. CNHRPC staff facilitated the Committee meetings and Work Sessions. Information needed on the Agenda Tasks indicated above was collected from any attendees present, including any members of the public, by CNHRPC, during discussions among attendees. The

Who is a Member of the Public?

For the purposes of this Plan, **“a member of the public”** or **“the public”** or **“public participant”** means:

Anyone who is not a Town of Allenstown, School District, County, State, or federal government employee; anyone who is not paid for services by tax dollars; anyone who is not a volunteer of the Town; and anyone who does not represent non-profit agencies and other Committees of which the Town is a member.

new and updated information was described in each Chapter under the **2020 Plan Update** section. Maps were reviewed and updated by the Committee and guests and revised in a Geographic Information System (GIS) by CNHRPC.

In between meetings, Town staff and volunteers and CNHRPC staff researched and collected information for the Chapters. CNHRPC updated and rewrote Chapters, tables, and sections as appropriate. The Chapters were also updated by revising the document to the current FEMA standards.

OPPORTUNITY FOR PUBLIC PARTICIPATION

Public Input from the Hazard Mitigation Committee Meetings

The public notification is described in the Public Outreach Strategy sidebar. Three (3) members of the public attended the meetings as indicated in the **Acknowledgements** and by the Attendance Sheets in **APPENDIX C Meeting Information**, in addition to Public Information Meeting attendees. Members of the public would have assisted with completing the Agendas, including developing the **Hazard Identification Risk Assessment, Critical and Community Facilities Vulnerability Assessment, Capability Assessment, and Mitigation Action Plan**, completing the **Enhanced STAPLEE Action Prioritization**, etc. along with the Committee members. The general public had the opportunity to attend and participate in the **14** posted meetings or to contact the Town

Public Outreach Strategy

Many individuals were personally invited to attend and participate in the Allenstown Hazard Mitigation Plan Committee meetings. They included surrounding community Emergency Management Directors, Town Boards and Committees, Town Departments, Senior Center, Library & Historical Society, local businesses, Bear Brook State Park, neighborhood representatives, Capital Area Public Health Network. NH Homeland Security and Emergency Management (NHHSEM) Representatives, and others. Meeting participants included representatives from the Bear Brook Crossing Cooperative, Granite State Power, and the Union Leader.

The Hazard Mitigation Committee itself was comprised of Town Department staff and volunteers, including the Emergency Management team, Town Administration, Fire Departments, Highway Department, Police Department, Code Enforcement, Planning Board, and Wastewater Department. Other staff members attended on behalf of their Departments.

The public process for this Plan included posting the meeting information on the Town's online calendar and website at www.allenstownnh.gov and a dedicated page at www.allenstownnh.gov/node/2013/agenda/2020. For the first meeting, flyers were made available at the Town Hall, Police and Fire Stations, Post Office, Senior Center, Library, the 3 Schools, Allenstown Laundromat, St. John the Baptist Church and Olympus Pizza. Because of the COVID-19 pandemic, between April-June 2020 the Town Offices were closed to the public but were opened to any member of the public desiring to attend the HMC meetings in person, with social distancing observed. Other than the outdoor Town bulletin board, no physical postings of the Agenda occurred as another result of the pandemic during this time. Copies of publicity for the Plan are included in **APPENDIX C**.

The Central NH Regional Planning Commission, a quasi-governmental regional organization of which Allenstown is a member, contributed to the development of this Plan by facilitating the meetings, guiding the planning process, and preparing the Plan documents, Appendices, and Maps.

As a final attempt to obtain additional public input, a specially noticed Public Information Meeting was held on August 10, 2020 at a Board of Selectmen's meeting at which many members of the public participated. This meeting was publicly noticed in the Concord Monitor, Suncook Banner, Allenstown Facebook, and all documents were available for review on the Town's website in advance of the meeting. The attendees and publicity of the public planning process are noted in the **Acknowledgements**.

Administrator and Emergency Management Director for more information prior to the Board of Selectmen adoption of the Plan.

Public Input from the Public Information Meeting

The **Public Information Meeting (PIM)** was held on August 10, 2020. The Hazard Mitigation Committee members presented portions of the Plan and had the Maps available for display. The agenda and attendance sheet are included in **APPENDIX C**. Held during a scheduled Board of Selectmen meeting, the PIM involved **several** members of the public who listened to presentations, asked questions and had the opportunity to review the final draft Plan document, Appendices and Maps.

Public Input from the Board of Selectmen Adoption Meeting

The Board of Selectmen meeting to adopt the **Hazard Mitigation Plan** was held on Month xx, 2020. Although the Plan’s APA had been received, the Board permitted public comment prior to adoption although Plan changes could not be made at this time. Discussion was held prior to the unanimous adoption of the Plan by the Board.

COMPLETION OF THE PLAN STEPS AND DATES

On Month xx, 2020, the Committee held a **Public Information Meeting**. The same extensive public notification described in the Public Outreach Strategy sidebar occurred to obtain review and comment from the public for the Plan. On Month xx, 2020, this Plan, Appendices and Maps were submitted to the NH Homeland Security and Emergency Management (NHHSEM) for compliance review and revision to apply for Approved Pending Adoption (APA) status, also known as conditional approval.

On Month xx, 2020, Allenstown received an **Approved Pending Adoption (APA)** notification from NHHSEM. The APA states the Plan will be approved by FEMA after proof of adoption by the local governing body, a Certificate of Adoption from the Board of Selectmen, is submitted.

On Month xx, 2020, the Board of Selectmen **adopted the Hazard Mitigation Plan Update** for the Town at a duly noticed public meeting. Copies had been made available at the Town Office and on the Town website for public review. The public notice and flyers are included in **APPENDIX C**. The signed Certificate of Adoption was sent to NHHSEM/FEMA.

On Month xx, 2020, Allenstown received a **Notification of Formal Approval** from NHHSEM, with the Plan approval granted effective that day. A **Letter of Formal Approval** from FEMA confirming the notification will be forthcoming. The next Hazard Mitigation Plan update is due five (5) years from this date of approval, on Month xx, 2025.

Final Plan Dates

The following is a summary of the required dates which guide the adoption and update of the **Allenstown Hazard Mitigation Plan**. Included is the history of the Plan approvals and lapsing dates as shown in **Table 2**.

Table 2
Allenstown’s Hazard Mitigation Plan Adoption History

Year of FEMA-Approved Hazard Mitigation Plan	Adoption by Allenstown Board of Selectmen	NHHSEM/ FEMA’s Formal Approval	Plan Lapse
Original 2004	02/23/04	05/04/04	05/04/09
Update 2010	07/12/10	07/14/10	07/14/15
Update 2015	12/07/15	12/23/15	12/23/20
Update 2020	xx/xx/20	xx/xx/20	xx/xx/25

Source: Plan Adoption History

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2 COMMUNITY PROFILE

It has been over five years since the last Plan was written, with the newest decennial US Census beginning in 2020. The best available new data has been used in this Chapter to portray the population, housing, and overall demographic picture of present-day Allenstown. The former **Relation to Natural Hazards** section has been updated within **4 HAZARD RISK ASSESSMENT** as **Built Environment Changes**. The tables clearly identify the facilities in Town and which natural, human, and technological hazard events could most likely occur in those areas, as described in **5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION**.

A simplified description of how the Town's population and housing have grown within the last four decades follows. Relationships of the locations of people and buildings to natural hazard events are generally explored. Examination of this information will allow the Town to better understand the land use and demographic trends within its borders and how emergency and preventative services can best serve the growing and changing population and landscape.

Geographic Context

The Town of Allenstown is located in southeastern Central New Hampshire within Merrimack County, adjacent to the northwestern edge of Rockingham County. The Town is bordered by **6** communities: the Town of Epsom the north, the Town of Deerfield to the east, the Towns of Candia and Hooksett to the south, and the Towns of Bow and Pembroke to the west. The State's capital of Concord is less than **10** miles from the population center (Downtown) of Allenstown, traveling along US 3. US 3 (Main Street) bisects the community in the Downtown area, from Hooksett to crossing the Suncook River into Pembroke. State highway NH 28 follows much of the **Suncook River** in a northeasterly-southwesterly direction from Epsom until its junction with US 3 in the Downtown.

The Town boasts a vibrant, historical Downtown shared with Pembroke (Suncook Village) easily accessed from both highways. The **Suncook River** is the most prominent watercourse through the Town, forming Allenstown's boundary with Pembroke until the **Suncook River** converges with the **Merrimack River** which forms a small section of the Town's western-most boundary. The State Park, which is over **51%** of the land area in Town, is a significant economic development resource.

The Downtown represents the one of the two high density population areas in the community. The Town Hall, Fire Department, Wastewater Treatment Facility, Town Library, Police Station, Highway Garage, Transfer Station, Community Center, churches, businesses, Armand Dupont School, Allenstown Elementary School, manufactured housing parks, and individual residences comprise the Downtown

area. The Deerfield Road area is much the opposite of the Downtown, very rural and remote tucked into and around Bear Brook State Park. In this area, many residences are located.

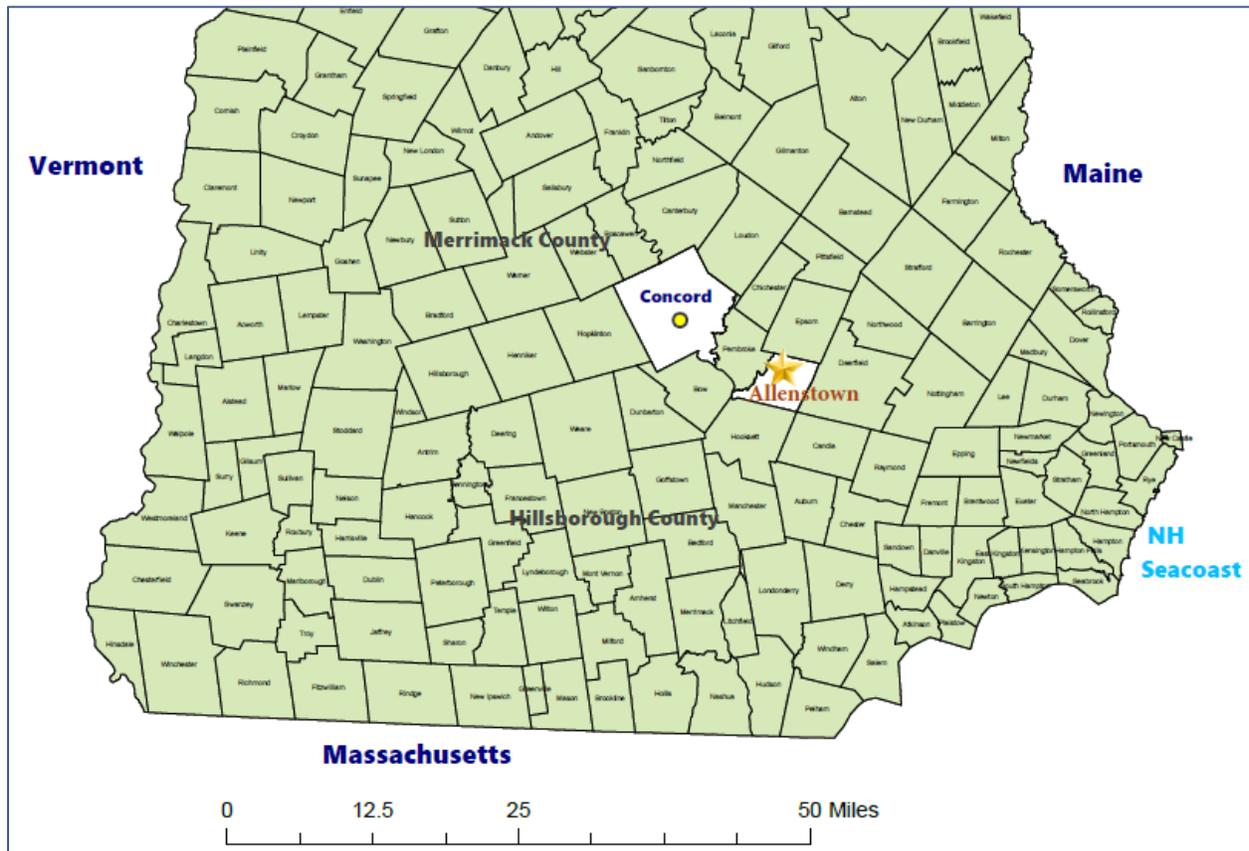
The small, **20.5** square mile rural Town with a large population density of **213** people per square mile, additionally contains **Iris Pond** (commonly and mistakenly referred to as Iris Pond) in the Downtown, Catamount Brook, Little Bear Brook, Boat Meadow Brook, Bear Brook, and Pease Brook, Bear Hill Pond, Catamount Pond, Hall Mountain Pond, Smiths Pond, and Hayes Marsh. The most significant waters are the **Suncook River** and **Merrimack River**.

ALLENSTOWN'S LOCATION IN NH

Merrimack County in which Allenstown resides is often referred to as a valley as its borders are higher in elevation than its middle communities. The State Capital of Concord is joined by Franklin, both of which are cities in the County. Merrimack County is surrounded on all sides by other NH Counties, including Hillsborough, Sullivan, Belknap, Rockingham, Strafford, and Grafton. Most, but not all, communities in Merrimack County comprise the majority of the Central NH Planning Region joined by two communities from Hillsborough County. Hillsborough County borders Massachusetts and includes the cities of Manchester and Nashua.

Concord is located about **50** miles from the Massachusetts state border, the Vermont state border, the Maine state border, and the seacoast. New Hampshire's many Interstates, US Routes, NH Routes, and local roadways generally enable travel and commute from Central NH to most of these points in about one hour. Allenstown is geographically closer to Massachusetts and Maine than the Seacoast or Vermont. The Town of Allenstown's context within Merrimack County and the State of New Hampshire is shown in **Figure 1**.

Figure 1
Allenstown in the State



Source: Central NH Regional Planning Commission

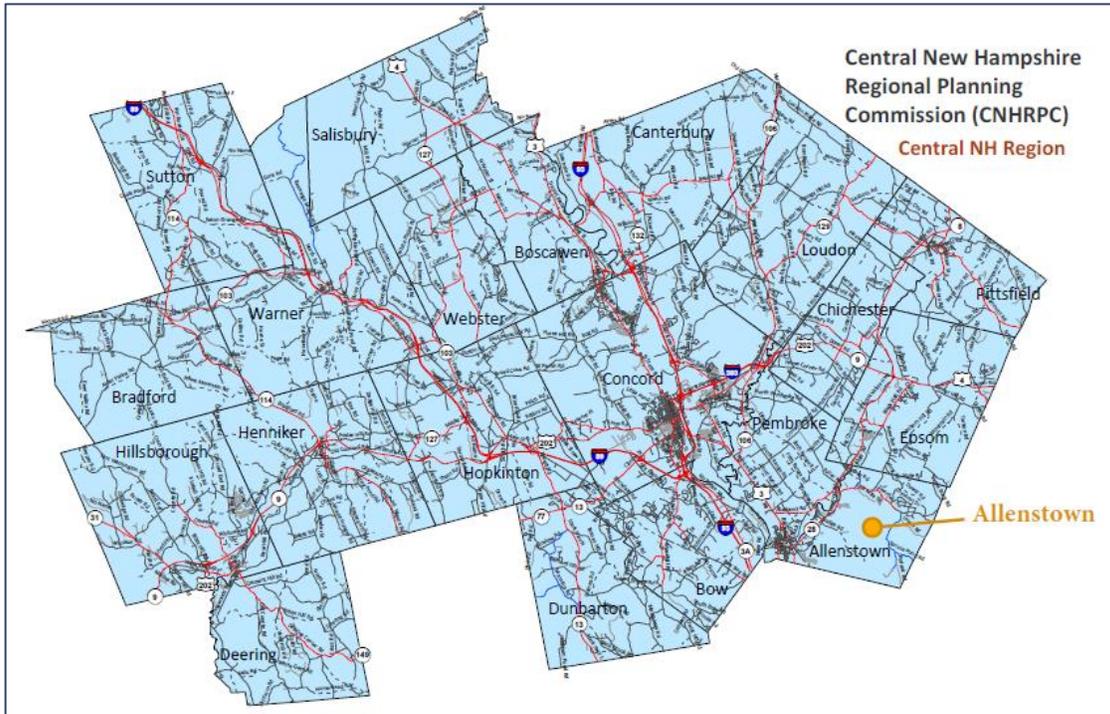
ALLENSTOWN’S LOCATION IN CENTRAL NH

The Town is a voluntary member of the Central New Hampshire Regional Planning Commission. The **19** Towns and **1** City comprising the Central NH Region contain several major rivers and New Hampshire and Interstate highways. The varied identity of Allenstown ensures its adaptability as growth occurs around and within the community.

The **Blackwater River** (Salisbury, Webster, Hopkinton) and the **Warner River** (Bradford, Sutton, Warner, Webster, Hopkinton) flow south into the **Contoocook River**. The **Contoocook River** flows in a north-easterly direction through Hillsborough, Henniker, Hopkinton, Concord and Boscawen until its confluence with the **Merrimack River** in Boscawen/Penacook (Concord). The **Contoocook** and the **Merrimack Rivers** effectively bisect the region into three sections. The **Soucook River** flows south through Loudon along the Concord/Pembroke border and enters the **Merrimack River**. The **Suncook River** originates in Belknap County, flowing south through Pittsfield, Chichester, Epsom, Pembroke, and Allenstown until it also converges into the **Merrimack River** in Bow/Hooksett.

In the Central NH Region, Interstates 89, 93 and 393 stretch in north, northwest, east, and south directions, meeting in Concord and Bow. Major traffic routes of US 3 flow north-south and US 202 traverses in an east-west direction. Allenstown hosts corridors of NH 9/US 202 (west-east) and NH 114 (north-south). Dozens of NH state highways crisscross the entire region. A map of the Central NH Region in which Allenstown resides, with the region’s major routes, is displayed in **Figure 2**.

Figure 2
Allenstown in the Central NH Region



Source: Central NH Regional Planning Commission

Population and Housing Growth

The latest Allenstown Master Plan was adopted by the Planning Board in 2015. The goal for future updates is annual review and revision of a selection of Chapters. Chapters from the *2015 Master Plan* to update include Vision for Allenstown, Community Survey, Population and Economics, Housing, Historic and Cultural Resources, Transportation, Community Facilities, Conservation, Preservation and Open Space, and Existing and Future Land Use. New future chapters to consider, in addition to the updated chapters, could include Implementation, Economic Development, Energy, and Regional Concerns. The **Hazard Mitigation Plan 2020** could be adopted as an appendix to the *2015 Master Plan* by the vote of the Planning Board. The Master Plan influences the Zoning Ordinance and the Subdivision and Site Plan Review Regulations along with the Capital Improvements Program. These documents are used by local land use boards and staff to guide growth and development of Allenstown.

POPULATION AND HOUSING TRENDS

The following tables contain the newest consistent data on housing and population growth which depict development trends over time. Shown in **Table 3**, Allenstown’s population and housing boomed during the **1970-1980** decade (**+61%** people, **+92%** homes) and increased nominally during the following **1980-1990** decade (**+6%** people and **+17%** homes) and **1990-2000** decade (**+4%** people and **+12%** homes). The **2000-2010** decade, partially because of the flooding disasters, experienced a sharp decrease (**-11%** people and **-10%** homes) although this figure is locally thought to be inaccurate. The estimated **2018** population and housing units, based off the initial **2010** Census, assumed **4,367** people and **1,924** housing units in **2018**, indicating a slight growth over this current **2010-2020** decade.

Table 3

Overall Population and Housing Growth Trends in Allenstown, 1970-2018

Growth	Population	Net Change		Housing Units	Net Change	
		#	%		#	%
1970 Census	2,731	N/A	0	831	N/A	0
1980 Census	4,398	1,667	61.0%	1,591	760	91.5%
1990 Census	4,649	251	5.7%	1,868	277	17.4%
2000 Census	4,843	194	4.2%	2,093	225	12.0%
2010 Census	4,322	-521	-10.8%	1,881	-212	-10.1%
Total Change from 1970 – 2010 Census	---	1,591	58.3%	---	1,050	126.4%
2018 Population & Housing Estimates*	4,367	45	1.0%	1,924	43	2.3%
48 Years of Increase		+1,636 People			+1,093 Housing Units	

Sources: 1970-1990 US Census CPH-2-31 Table 9 Population and Housing Unit Counts;

US Census 2000 & 2010 Data *includes all housing units, including vacant and seasonal and 2018 Group Quarters.

NH Office of Strategic Initiatives (NHOSI) 2018 Population Estimates, Aug 2018, NHOSI Current Estimates and Housing Trends 2010-2017, Dec 2018

Population and Housing Data

In total, the Town has grown by **+1,636** people and **+1,093** homes by confirmed Census counts from **1970-2010** and by estimates through **2018**. In **Table 3**, Allenstown’s confirmed **2010** Census population of **4,322** shows an overall increase of about **+58%** in population over the previous four decades, up from **1,591** people in **1970**. The confirmed **2010** Census housing units (**1,881**) displays an overall increase of about **+126%** (**1,050** units) since **1970**. After an early growth boom between **1970-1980**, the population and housing increases tapered off significantly. Between **2000-2010**, the Town’s population decreased by **-11%** (**-521** people) while during the same time housing units decreased by **-10%** (**-212** units).

Overall growth trends seem to be slowly increasing over the current **2010-2018 (2020)** decade, with only a projected **+1%** population growth (**+45** people) and **+2%** housing units growth (**+43** units) to date. Over the five decade timeframe of **1970-2018**, this is by far the smallest amount of growth seen in Allenstown. The overall growth by percentage in Allenstown since **1970** is much smaller than the medium-sized population communities in the Central NH region.

Over the **1970-2018** period, the number of people living in each housing unit has declined steadily from its high of **3.2** people per housing unit in **1970** to its new low of **2.5** people per housing unit in **2018**. Overall, these numbers are higher in comparison to other medium-sized Central NH Region towns and likely indicates an aging population living together or Group Quarters cohabitation.

Population Density

Another good measurement of community population and housing change is population density, or how many people live in a square mile of land area. Although Allenstown encompasses a total area of **20.6** square miles (**13,189** acres), **0.1** square miles (**69** acres) of this total is water area. Development opportunities are limited because of the Bear Brook State Park and the existing built environment. Between **1970-2018**, the data for population density is displayed in **Table 4**.

Table 4
Population Density in Allenstown, 1970-2018

Municipality Size		Persons per Square Mile					
Land Acreage	Land Area in Square Miles	1970	1980	1990	2000	2010	2018
13,120	20.5	133	215	227	236	211	213

*Sources: **Table 3**, NH Office of Strategic Initiatives GIS acreage calculations, 2013*

From **Table 4**, the overall population density between **1970** and **2018** increased **+50%**, from **133** people per square mile in **1970** to a high of **227** people in **1990**, then decreasing to an estimated **213** people in **2018**. Allenstown is a geographically small-sized community in the Central NH Region at **20.6** square miles (including water acreage). At the same time, Allenstown has a comparatively high number of people per square mile as compared to both other Central NH Region communities and communities statewide.

NEW CONSTRUCTION

Table 5 displays Allenstown’s estimated new home and new building construction permits issued by the Building Inspector between **2014-2019**. During this **6**-year period, a total of **75** new construction permits for homes and housing units have been issued.

Table 5
New Construction Permits Issued by Building Type, 2014 – 2019

Building Type	2014	2015	2016	2017	2018	2019	6-Year Totals
Single Family Homes	0	1	1	10	11	7	30
Multi-family Homes	0	0	0	0	0	0	0
Manufactured Homes	5	1	10	8	16	5	45
Non-Residential Buildings	0	0	0	0	0	0	0
Totals	5	2	11	18	27	12	75

Source: Avitar 2014-2019, Building Department Admin

From **Table 5**, **30** permits were issued for new single family homes, with **0** permits for new multi-family homes, over the last **6** years. In addition, **45** new construction permits for manufactured homes were issued during the period. This period was not active for the construction of new non-residential buildings or multi-family homes, which each had **0** total permits issued. The most active year was **2018** when a total of **27** new single family and manufactured housing permits were issued, while **2015** had the fewest number of overall permits, totaling **2** new single family and manufactured housing permits.

It is important to note that the number of permits issued does not necessarily equate to buildings constructed. When using these figures, compared to most similar-sized Central NH region communities, Allenstown had less construction during **2014-2019**.

Land Use and Zoning

According to NH Office of Strategic Initiative’s **2013** geographic information system (GIS) calculations, Allenstown has a total land area of **13,120** acres, or **20.5** square land miles. An additional **69** acres (about **0.1** square miles) is water area, to total **13,120** Town acreage. The GIS land acreage figure is not comparable to the most recent **MS-1 2019** assessing reporting calculation of **12,649** land acres for the Town, which include **163** wetland acres, but not water acres. Certain acreages are often posted in more than one land use category for taxation purposes, and certain other land acreage is not displayed on MS-1 reports to the NH Department of Revenue Administration. Reviewing the assessing information closely should clarify the answer as to why this discrepancy exists. Small differences between the actual taxable land calculations from the assessing records and the acreage from the basic GIS calculations are often found and are not unusual.

For New Hampshire and specifically the Central NH Region, Allenstown is considered a geographically small-sized community in terms of land area and contains appropriate population and housing figures. Allenstown’s proportion of residential land and commercial land is smaller than most Towns in the Central NH Region. The Town of Allenstown is highly rural, forested, has some commercial development, and has little available undeveloped residential land to be built upon in the future.

LAND USE TYPES AND ACREAGE

Table 6 provides a snapshot of the Town’s **2019** land use acreage from the Town’s MS-1 reporting. Forested land use, both with and without stewardship, is the most extensive land use type, comprising **73.3%** of the Town’s land area, 52 of which is the Bear Brook State Park and does not generate taxation or represent future development potential. Residential land use at about **12.5%** is the next highest, followed by Commercial/Industrial land (**7.7%**). The Other Exempt (**2.7%**), which would be municipal and school services, churches, etc., does not generate taxation. Wetland (**1.3%**), Farmland (**1.2%**), Unproductive land (**1.2%**), and Conservation land (**<0.1%**) are nominal land uses in Allenstown.

Table 6
Land Use Acreage, 2019

Land Use Category 2019	Acres	% of Town
Residential	1,585.6	12.5%
Commercial/Industrial	974.3	7.7%
Conservation	14.0	0.1%
State Forest	6,621.0	52.3%
Other Exempt	339.0	2.7%
Current Use Categories		
Farm Land CU	150.0	1.2%
Forest Land CU	2,196.4	17.4%

Land Use Category 2019	Acres	% of Town
Forest Land Doc Stewardship CU	450.2	3.6%
Unproductive Land CU	155.9	1.2%
Wetland CU	162.5	1.3%
Total	12,648.9	100.0%

Source: Allenstown MS-1 December 2019, Town Website, June 2020

ALLENSTOWN ZONING

The perspective of the Town’s Zoning Districts offers another way to view how the land is utilized within Allenstown in **Table 7**. Several tables of dimensional and density regulations pertaining to water and septic, lot frontages, setbacks, buffers and lot sizes, etc. are available within the Zoning Ordinance. The ordinance includes a table of uses for each district, indicating what types of facilities are permitted.

Table 7
Allenstown Zoning Districts, 2020

Zoning District	Article or Section
Open Space and Farming	VI
R1 Residential (With Water / Sewer)	VII
R2 Residential (No Water /Sewer)	VII
Business	VIII
Industrial	IX
Commercial/Light Industrial	X
Zoning Overlay District	
Presite Built Housing and Manufactured Housing	XVII
Agriculture Conservation	XXII
Suncook Village Infill Development	XXIII
Groundwater Protection	XXIV
Permanent (Post-Construction) Stormwater Management	XXV
Adult Business	XXX
Other Zoning Ordinances pertaining to use of land	
Privately Owned Graveyards	1122
Cluster Housing	1125
Floodplain Development Regulations	XII
Hazardous Material Cleanup	XVIII
Solid Waste Management	XIX
Alternative Energy	XXVIII

Source: Town of Allenstown Zoning Ordinance, March 2020

The overlay districts are superimposed upon the zoning districts so additional regulations shall apply. For any conflicting regulation, the more restrictive shall apply. The Zoning Ordinance has sections amended every year at the annual March Town Meeting and is used and applied by the Land Use Department, Building Inspector and Planning Board.

3 GOALS AND OBJECTIVES

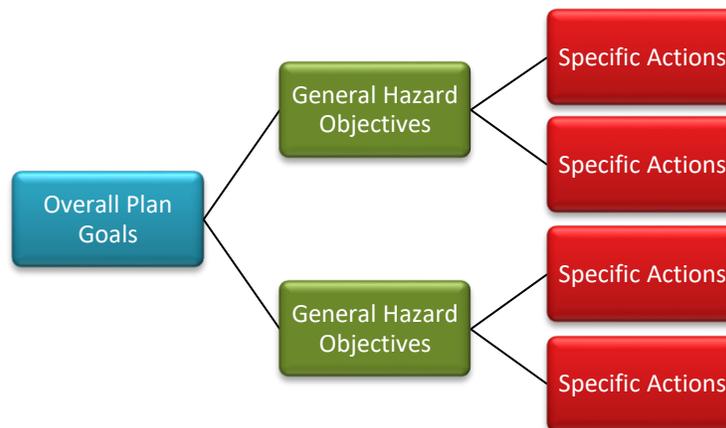
The overall purpose of this Plan is to reduce future life and property losses caused by hazard events before they occur by the identification of appropriate **Actions** that are implemented during the five-year duration of this Plan.

Inspired by early *State of New Hampshire Hazard Mitigation Plans*, the following Allenstown **Goals** were initially developed in the previous **Allenstown Hazard Mitigation Plans** and thus were reviewed and updated as applicable by the Hazard Mitigation Committee during a public meeting for the **2020 Plan**. While the hazard incidents have remained essentially the same as from the **2015 Plan** with a few disaster additions over the course of the last five years, it was important to reassess the continued relevancy of **Goals** and **Objectives** to influence the development of the best and most relevant hazard mitigation **Actions**. Lastly, with the most recent change in hazard types utilized in the *State of New Hampshire Multi- Hazard Mitigation Plan 2018*, it was necessary to revise some of the main hazard groups for the **General Hazard Mitigation Objectives** identification.

What Are Goals, Objectives and Actions

Goals, Objectives and Actions are used in the Hazard Mitigation Plan to define different levels of meaning. The overall **Goals** of this Hazard Mitigation Plan provide a macro-level view of what emergency managers want to accomplish to keep the Town’s life, property and infrastructure safer from natural disasters. Statements of overall **Goals**, beginning with “To”, describe the desired vision of mitigation and safety for the community. **Goals** enable the development of thoughtful hazard **Objectives** designed to generally fulfill those **Goals**. This relationship is displayed in **Figure 3**.

Figure 3
Relationship of Goals, Objectives and Actions



HAZARD CATEGORIES

From the **Hazard Identification and Risk Assessment**, the individual natural, technological and human hazards under consideration have been grouped into similar event types for simplification, entitled main hazard categories. **Objectives** begin to narrow down the focus of the overall **Goals** into hazard minimization statements and will use these categories. The main hazard categories of **Earth, Extreme Temperatures, Fire, Flood, Public Health, Solar Storms, Wind, Winter, Technological,** and **Human** guide the direction of mitigation efforts. These hazard **Objective** statements, beginning with “Minimize”, state Town’s desired outcome for each hazard category. The **Objectives** support the overall **Goals** by placing a focus on hazard mitigation or minimization. These hazard categories are displayed in **Table 8**.

**Table 8
Main Hazard Categories and Specific Hazards**

Main Hazard Category	Specific Hazards Included			
EARTH	DROUGHT	EARTHQUAKE		LANDSLIDE Soil, Rockslide or Excavation Areas
EXTREME TEMPERATURES	EXTREME TEMPERATURES Excessive Heat, Heat Wave, Cold or Wind Chill			
FIRE	WILDFIRE Brushfire, Outdoor Fires or Accidental		LIGHTNING	
FLOOD	INLAND FLOODING Rains, Snow Melt, or Flash Floods		RIVER HAZARDS Ice Jams, Scouring, Erosion, Channel Movement or Debris	
PUBLIC HEALTH	PUBLIC HEALTH Infectious Diseases, Air & Water Quality, Biological, Addiction, Arboviral or Tick-borne			
SOLAR STORMS	SOLAR STORMS AND SPACE WEATHER Solar Winds, Geomagnetic Storms (Aurora Borealis), Solar Radiation or Radio Blackout			
WIND	HIGH WIND EVENTS Wind, Thunderstorms, Hail, Downbursts, Tornadoes or Debris		TROPICAL AND POST-TROPICAL CYCLONES Hurricanes, Tropical Storms or Tree Debris	
WINTER	SEVERE WINTER WEATHER Snow, Ice, Blizzard or Nor’Easter		AVALANCHE	
TECHNOLOGICAL	AGING INFRASTRUCTURE Bridges, Culverts, Roads, Pipes or Underground Lines	DAM FAILURE Water Overtop, Breach, Beaver, etc.	FIRE Vehicle, Structure, Arson or Conflagration	HAZARDOUS MATERIALS Haz Mat Spills, Brownfields or Trucking
	LONG TERM UTILITY OUTAGE Power, Water, Sewer, Gas, Internet, Communications or Live Wire Danger			
HUMAN	TRANSPORTATION CRASH Vehicle, Airplane, Helicopter, Rail, Interstate,	MASS CASUALTY INCIDENT As a result of any hazard event	TERRORISM/ VIOLENCE Active Shooter, Hostage, Public Harm, Civil Disturbance/Unrest,	CYBER EVENT Municipal Computer Systems Attack, Cloud Data Breach, Identity Theft, Phishing, Ransomware or Virus

Main Hazard Category	Specific Hazards Included			
	Pedestrian or Bicycle		Politically Motivated Attacks, Incendiary Devices, Sabotage or Vandalism	

Source: Allenstown Hazard Identification and Risk Assessment (HIRA)

Not all of these main natural hazard categories will be important for Allenstown to develop Plan **Objectives**, and these will be noted at the end of the **3 GOALS AND OBJECTIVES**.

Finally, **Actions** are the specific activities or projects which can be undertaken to accomplish an **Objective**. **Actions** begin with a verb to portray a direction for accomplishment. The **Action** is the target to reach to help mitigate hazards in the community. The completed **Action** fulfills the associated **Objectives**. The Actions will be listed and reviewed later in the **Potential Action Evaluation** and **Mitigation Action Plan** tables.

Overall Hazard Mitigation Plan Goals

The following **3** Goals for the **Hazard Mitigation Plan 2020** were developed by the Hazard Mitigation Committee as the vision for the community with respect to the declared disaster declarations, general hazard events, seasonal weather events and changing climate patterns resulting in unexpected events. Collectively, the **Goals** guided the formulation of **Objectives** for each of the main hazard categories. These **Goals** were revised from the **2015 Plan** to emphasize hazard mitigation instead of preparedness, response and recovery which are covered in the *Emergency Operations Plan*. The **Hazard Mitigation Goals** are displayed in **Figure 4**.

Figure 4
Hazard Mitigation GOALS

- 1. To reduce the risk of injury and the loss of life in the Town from all natural hazards, severe weather, and disasters and from impacts of secondary hazards (human and technological).**
- 2. To reduce the risk of potential damages in Town to public and private property, critical facilities, infrastructure, historic resources and the natural environment from all natural hazards and disasters.**
- 3. To promote public awareness of and participation in hazard mitigation planning and activities to the Town's residents, Schools, visitors and businesses.**

Source: Allenstown Hazard Mitigation Committee

General Hazard Mitigation Objectives

Main hazard event categories of **Earth, Extreme Temperatures, Fire, Flood, Public Health, Solar Storms, Wind, Winter, Technological,** and **Human** are intended to encompass their respective full sub-hazards range described in this Plan. The **General Objectives** are developed by addressing the primary hazard events that could impact Allenstown. They focus on minimizing or mitigating the hazard events to support the overall **Goals** while driving the direction of **Action** development later in the Plan.

Although human and technological hazards are not natural disasters, many technological hazards are secondary to (are caused by) the natural and weather hazards. Nineteen (19) **General Hazard Mitigation Objectives** were crafted for the **Allenstown Hazard Mitigation Plan 2020** as displayed in **Figure 5**.

Figure 5
Hazard Mitigation OBJECTIVES

EARTH HAZARDS

1. Minimize the threat of potential landslide or rockslide areas along local roads (US 3 intersection with Granite Street) and excavation areas.
2. Engage in public awareness of local earthquake activity and safety precautions.
3. Minimize the impact of drought events to agricultural areas, private and municipal wells, and other locations through public awareness.

EXTREME TEMPERATURE HAZARDS

4. Minimize damages to life, property, and infrastructure due to temperature fluctuation resulting from climate change, including excessive heat events, heat waves, extreme cold events and wind chill.

FIRE HAZARDS

5. Minimize the damages to life, property, and infrastructure, including Bear Brook State Park, from wildfires, brushfires, other outdoor fires, and lightning.

Hazard Mitigation OBJECTIVES

FLOOD HAZARDS

- 6.** Minimize the damages to life, property, and infrastructure from floodwaters and floodplains of the Suncook River, Merrimack River, Catamount Pond, Bear Brook Pond, and other Brooks, Ponds, wetlands, and water bodies in Allenstown.
- 7.** Minimize the damages to life, property, and infrastructure caused by snow-melt and precipitation resulting in erosion and flooded roads; and from river scouring and ice jams, culvert washouts, dam failures or debris (tree limbs, leafy material/ sediment), beaver dam breakage, etc.

PUBLIC HEALTH HAZARDS

- 8.** Minimize the threat or impact of public health events to the public, including close-quarter infectious diseases (coronavirus, influenza, hepatitis, meningitis), air and water quality decline, biological infestations (milfoil, emerald ash borer), arboviral (mosquito) and tick-borne diseases, addiction, etc.

SOLAR STORMS

- 9.** Minimize the impact to life, property and infrastructure from solar storms and space weather, including solar winds, geomagnetic storms, solar radiation, and radio blackout.

WIND HAZARDS

- 10.** Minimize the damages to life, property and infrastructure from heavy wind events, thunderstorms, hail, downbursts, tornadoes, hurricanes, and tropical storms, including damages caused by resulting tree debris.

WINTER HAZARDS

- 11.** Minimize the damages to life, property and infrastructure from winter weather events, including storms, snow, ice and minimize damages from utility failure, blocked transportation routes and roof collapses.

Hazard Mitigation OBJECTIVES

HUMAN HAZARDS

- 12.** Minimize the risk of impacts and damages to life, property and infrastructure resulting from transportation crashes and fires involving transport trucks, vehicles, pedestrians, bicycles, airplanes, helicopters, drones, etc., along State roadways including US 3 and NH 28, and along local Allenstown roads, especially during natural hazard events.
- 13.** Minimize the risk of damages to life, property and infrastructure from human terrorism and violence threats, such as active shooter incidents, hostage situations, civil disturbance/ riots, politically motivated attacks, incendiary devices, sabotage, vandalism or other public harm.
- 14.** Minimize the risk and impact of mass casualty and any other hazard events to better protect Allenstown’s citizens and guests.

TECHNOLOGICAL HAZARDS

- 15.** Minimize the risk of cyber events, including overall systems takeover, takeover of the Town website, telecommunications rerouting, cloud data breach, phishing, malware, ransomware, virus installation, on Town and School computer systems to maintain essential operations, and provide education to minimize cyberattack risk to residents and businesses, including identity theft and telephone scams.
- 16.** Minimize the damages from multiple hazards to the aging infrastructure of the community, including bridges, culverts, dams, local roads, pipes, and seek to maintain operational efficiency.
- 17.** Minimize the impact to Allenstown residents in both rural and Village/Downtown environments from the risks of various utility outages, such as high-pressure gas lines, live wire dangers and long-term outages in electrical power, internet and telecommunications services.
- 18.** Minimize the impacts of fire conflagration and explosion, especially near densely populated areas or buildings, from fuel tanks, high tension power lines and vehicles, including impacts from manufacturing accidents.
- 19.** Minimize the damages to life, property, and infrastructure from hazardous materials exposure, chemical spills, trucking accidents, and radiological materials incidents, including damages, impacts and exposures caused by brownfields sites, leaking underground storage tanks, and occupational sites.

Source: Allenstown Hazard Mitigation Committee

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4 HAZARD RISK ASSESSMENT

Natural disasters and technological, and human hazards that have occurred in Allenstown or have the potential to occur in the Town were assessed in a **Hazard Identification Risk Assessment (HIRA)** to determine their **Overall Risk** to the community. The major disasters declarations covering the Central NH Region (Merrimack County and Hillsborough County) were inventoried and additional hazard events occurring in Allenstown and the surrounding area have been described. FEMA Public Assistance funding to the Town is detailed for each disaster declaration. A review of climate changes is provided for the region to provide perspective on how the weather may change over time.

The *State of New Hampshire Multi-Hazard Mitigation Plan 2018* recommends that municipalities examine multiple natural hazards, including several new hazards. One hazard, coastal flooding, is not discussed in Allenstown’s Plan because they have no relevance to the Town. The former Human hazards of Civil Disturbance/ Public Unrest, Sabotage/ Vandalism, and Hostage Situation are absorbed into the **Terrorism/ Violence** hazard category. The opportunity was available to combine several of the former flood-related hazards into the new **Inland Flooding**. Likewise, several former wind-related hazards are compiled within **High Wind**. No natural hazards from the **2015 Plan** have been removed, only placed into other groupings for evaluation. Within the **Hazard Mitigation Plan 2020**, the **14** evaluated natural hazards and the **9** evaluated human or technological hazards have been incorporated under these basic categories, also displayed in **3 GOALS AND OBJECTIVES Table 8**:

- **Earth Hazards**
- **Extreme Temperature Hazards**
- **Fire Hazards**
- **Flood Hazards**
- **Public Health Hazards**
- **Solar Storm Hazards**
- **Wind Hazards**
- **Winter Hazards**
- **Human Hazards**
- **Technological Hazards**

Within these basic hazard categories are numerous related subcategories, all of which are detailed in the **Hazard Identification and Risk Assessment (HIRA)**. This Assessment provides a measure of **Frequency (Probability of Occurrence)**, **Location Area**, **Severity of Impact to the Town**, **Hazard Magnitude**, and **Overall Risk** for each hazard in a numerical format as determined by the Hazard Mitigation Committee. Scale definitions and the process to define hazards are discussed.

Many of these examined hazards discussed may pose little threat to the Town. The Hazard Mitigation Committee wanted to acknowledge their possibility as opposed to simply focusing on a handful of top hazards which will certainly occur in the community. Using this broad vision allows Allenstown to contemplate the impact of a variety of hazards and to develop mitigation actions and design emergency planning programs as appropriate. Only the most predominant hazards, or even multiple hazards, will

have mitigation actions developed to try to reduce the hazards’ impact. These are later discussed in **Potential Mitigation Actions** and prioritized in the **Mitigation Action Plan**.

Hazard Identification and Risk Assessment (HIRA) Ratings

Twenty-three (23) natural, technological, and human hazards are evaluated within this Plan. The 14 natural hazards and 1 technological hazard are ranked within a **Hazard Identification Risk Assessment**. Some hazards may be more likely to occur in the community than others based on past events and current conditions, and some hazards may have a greater impact than other hazards. How vulnerable Allenstown could be to natural hazards can be measured in terms of **Overall Risk**.

The location of where each hazard has occurred either in the past or may be prone to future hazard occurrences is noted in the **Hazard Locations in Town** column.

Knowing where events may be likely to occur, the 2020 Hazard Mitigation Committee examined each potential hazard for its **Probability of Occurrence in 10 Years** and its potential **Severity of Impact to the Town** affecting people, services/infrastructure and property based on past personal recollections and community hazard trends to determine the **Overall Risk** to the community.

HIRA RATINGS EXPLANATION

The Committee identified each hazard’s **Probability of Occurrence in 10 Years** score on a 1-2-3-4 scale from **Unlikely/1** (0-25% chance of occurring in 10 years, which is 2 Hazard Mitigation Plan cycles) to **Highly Likely/4** (76-100% chance in 10 years) as shown below.

Probability of Occurrence in 10 Years		
1	Unlikely	0 - 25% chance
2	Possible	25 - 50% chance
3	Likely	51 - 75% chance
4	Highly Likely	76 - 100% chance

The Committee determined the likely **Severity of Impact to the Town** of an event based on a 1-2-3-4 scale for 3 Impact characteristics – Human Injuries, the length of time Essential Services/Infrastructure are shut down, and resulting Property Damage or Economic Impact. Not all of these characteristics have to be expected because each hazard differs. The scale runs from **Limited/1** to **Catastrophic/4** and the more specific definitions are described below.

The **Probability of Occurrence in 10 Years** score was multiplied by the average of each **Severity of Impact to the Town** (Human Injury, Essential Services or Infrastructure and Property Damage or Economic Impact) score to obtain the **Overall Risk** score.

The technological and human hazards were not scored to ensure the natural hazards retained the focus of the **Hazard Mitigation Plan Update 2020**. However, **Dam Failure** was also rated because of its close correlation to **Flooding**.

Severity of Impact to the Town

1	Limited	<p>Human: Injuries treatable with first aid.</p> <p>Essential Services/Infrastructure: Minor “quality of life disturbance; Shutdown for 3 days or less.</p> <p>Property Damage or Economic Impact: Less than 10%.</p>
2	Significant	<p>Human: Significant injuries or illnesses result in no permanent disability.</p> <p>Essential Services/Infrastructure: Shutdown for up to 2 weeks.</p> <p>Property Damage or Economic Impact: 10% to 25%.</p>
3	Critical	<p>Human: Significant injuries or illnesses result in permanent disability.</p> <p>Essential Services/Infrastructure: Complete shutdown for at least 2 weeks.</p> <p>Property Damage or Economic Impact: 25% to 50%.</p>
4	Catastrophic	<p>Human: Death or multiple deaths.</p> <p>Essential Services/Infrastructure: Complete shutdown for 30 days or more.</p> <p>Property Damage or Economic Impact: Greater than 50%.</p>

Concern Summary of HIRA Scores

A summarization of the scores is provided to ascertain at a glance the **Probability of Occurrence, Severity of Impact**, and **Overall Risk** using a **HIGH, MEDIUM** or **LOW Concern** designation for the numeric results. This summarization is also utilized in the following the **Description and Magnitude of Hazard Events** section.

Numeric of Probability and Severity	CONCERN SUMMARY	Numeric of Overall Risk Score
1	LOW	1 – 4
2	MEDIUM	5 - 7
3	HIGH	8 - 11
4	HIGH	12 - 16

OVERALL RISK ASSESSMENT SCORES

The highest possible **Overall Risk** score a natural hazard could be ranked using this **Hazard Identification Risk Assessment (HIRA)** system is **16** while the lowest score a hazard could be ranked is **1**. The **Overall Risk** numeric score is one which can help the community weigh the hazards against one another to determine which hazards are most detrimental to the community and which hazards should have the most Actions developed to try to mitigate those hazards. The **Overall Risk** is calculated simply by adding the two scores of **Probability of Occurrence in 10 Years** and **Severity of Impact to the Town**.

Out of the **14** ranked natural hazards and **1** technological hazard, Allenstown’s highest ranking hazards scored an **Overall Risk** between **16 - 4** (out of a possible score of **16**), displayed with calculated decimals in **Table 9**.

Table 9

Highest Overall Risk Hazards Scored in Allenstown

Hazard Event	Overall Risk 1 - 16	CONCERN
Public Health	16.0	HIGH
High Wind Events	8.0	HIGH
Severe Winter Weather	8.0	HIGH
Earthquake Extreme Temperatures Lightning Wildfire	4.0	LOW

HAZARD IDENTIFICATION AND RISK ASSESSMENT RATINGS

Included with the **Table 10 Hazard Identification Risk Assessment (HIRA)** is whether each hazard event occurred within the last **5** years in Allenstown. This is indicated by either ***Events(s) Within Last 5 Years*** or ***NO Event(s) Within Last 5 Years*** beneath each *Hazard Category*. Dates and descriptions of the new hazard impacts within the last **5** years are provided in a later table, **Table 12 Local and Area Hazard Event and Disaster History**. The existing potential hazard locations, or those locations in Allenstown which could be currently at present day susceptible to each of the hazard categories, are provided within **Table 10** since these locations contribute to the **Severity of Impact** ratings determinations of the Hazard Mitigation Committee. The **HIGH, MEDIUM** or **LOW Concern** summary for each rated natural hazard is provided within the **Overall Risk** column.

Table 10

Hazard Identification and Risk Assessment (HIRA)

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
DAM FAILURE Water Overtop, Breach, Beaver, etc. *NO Event(s) Within Last 5 Years*	<p>◆ There are no High Hazard (H) or Significant (S) Hazard dams in the community, but there are 4 Low (L) Hazard Dams: Bear Hill Pond (Boat Meadow Brook), Catamount Pond Dam (Bear Brook), Hall Mountain marsh (Bear Brook), and Hayes Marsh Dam (Catamount Brook).</p> <p>◆ Dams in other Towns could have a serious downstream impact should they fail or release too much water. Should the High (H) Hazard Garvins Falls Dam (Merrimack River), (H) Pembroke Dam (Suncook River), Significant Hazard Webster Mill Dam (Suncook River), or Low Hazard China Mill Dam (Suncook River) fail or breach, downstream flooding is expected to occur in the Downtown (Suncook Village) area.</p> <p>◆ Other recreation ponds, Non-Menace dams and regular beaver dams can breach and flood roadways. NM dams are found along Boat Meadow Brook, and Bear Brook, all of which are unlikely to flood but still have potential. (See APPENDIX A for list).</p> <p>◆ Beaver dams carry a high probability of flooding and potential for breakage. Beaver dams are located throughout the Town, and depending on size and location, could cause significant damage to roads if the natural dams breach.</p>	1	1	1	1	1.0 LOW
DROUGHT *Event(s) Within Last 5 Years*	<p>◆ Entire Town, Pembroke Water Works (PWW) area. Areas susceptible to drought and dry conditions include farms and orchards, nurseries, and maple sugar operations: Bear Brook Stables (Horses), Edelweiss Farm (horse stable), Fiddler's Farm & Construction (Poultry, Eggs, Produce), McNamara Hay Fields. When hayfields die off, livestock animals in Town cannot easily be locally fed.</p> <p>◆ Water Supplies: PWW and its tower (Bailey Avenue) supplies water for the Downtown, Main Street and the Town of Pembroke to the west. Outside the area are private dug and artesian wells and public water supplies serving 25+ people.</p> <p>◆ Drought means increased risk of brush fire with dry vegetation (see Wildfire). Gravel roads can be affected because Town is unable to grade them when water is low.</p> <p>◆ Fire ponds/ dry hydrant supplies can run dangerously low; see APPENDIX A for a list of the dry hydrants and large cisterns. When fire ponds</p>	2	1	1	1	2.0 LOW

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	or dry hydrants are low, response time increases as the Department needs to draw from the Rivers, brooks, and ponds (see Inland Flooding).					
EARTHQUAKE <i>*Event(s) Within Last 5 Years*</i>	<p>♦ Entire Town. The Central NH Region is seismically active and earthquakes are regularly felt from area epicenters. Locations with high density population or potential gathering sites to evacuate include: Downtown, Allenstown Elementary School and Armand Dupont School and sporting fields, Community Center, Volunteers Park, campgrounds, and Bear Brook State Park.</p> <p>♦ Damage to utility poles and wires, roadways and infrastructure could be significant. Aboveground poles, underground electric lines, wastewater treatment lines (mostly Downtown) and the high transmission Tenneco gas lines could be susceptible. The Allenstown Wastewater Treatment Facility could be damaged in an earthquake along with its underground infrastructure. Wastewater pumping stations at River Road and Glass Street could be at risk. The Pembroke Water Works water lines in Suncook Village and the water tank at Bailey Avenue could be damaged by earthquakes.</p> <p>♦ Fuel storage locations such as Suncook River Convenience Store, Mega X Convenience Store and other facilities store underground or aboveground fuel tanks which may be vulnerable during a strong earthquake.</p> <p>♦ Areas with the old, historic buildings are particularly susceptible to earthquake, including public and private buildings in the greater Downtown, including Town Hall, Community Center, Allenstown Historical Society, St. Jean’s Parish Church, China Mills, historic homes, and facilities beyond Downtown: museum buildings in Bear Brook State Park, about 15 cemeteries, and Allenstown Meeting House on Deerfield Road.</p>	4	1	1	1	4.0 LOW
EXTREME TEMPERATURES <i>Excessive Heat, Heat Wave, or Cold, Wind Chill</i> <i>*Event(s) Within Last 5 Years*</i>	<p>♦ Entire Town. Groups most susceptible to extreme heat or cold include those located at: Allenstown Elementary School and Armand Dupont School, Community Center, Tender Years Child Care Center, Bear View Crossing MHP, Catamount Hill Cooperative MHP, Garden Drive MHP, Old Towne HMP, River Pines MHP, Rodgers/Betty Lane HMP, Sunrise Hill Apartments, Swiftware Condos, campgrounds, the Churches, and senior housing facilities.</p> <p>♦ Elder residences or those without air conditioning are especially vulnerable to high heat events, including Suncook Pond Senior Housing,</p>	4	1	1	1	4.0 LOW

4 HAZARD RISK ASSESSMENT

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<p>and residents should be moved to air conditioned (cooling) or warming facilities such as the Town Hall or the Public Library.</p> <ul style="list-style-type: none"> ◆ Extreme cold (or heat) may be experienced by recreationalists in remote Bear Brook State Park locations. ◆ Areas vulnerable to effects of extreme heat or cold include agriculture and farms: (see list above in Drought) ◆ See APPENDIX A for the list of vulnerable facilities or groups. 					
<p>HIGH WIND EVENTS Wind, Thunderstorms, Hail, Downbursts, Tornadoes, Debris <i>*Event(s) Within Last 5 Years*</i></p>	<ul style="list-style-type: none"> ◆ Entire Town. Most high wind -vulnerable areas include populated buildings, high-density locations, and utilities serving residents, businesses and the Downtown blocks. ◆ Utilities at risk of failing during high wind events include telecomm towers; Eversource electric lines; transmission lines; Allenstown Wastewater Treatment Facility on Canal Street, and Water Works tanks at Bailey Ave (Hooksett). ◆ High Density developed areas can have greater impacts from high winds: Downtown, Suncook Village (including all Town facilities, Allenstown Elementary School and Armand Dupont School), and residential housing off Deerfield Road. ◆ Construction, manufacturing, and industrial businesses clustered on the Suncook River, in Suncook Village, along NH 28 and US 3 corridors, in parks such as Pinewood Road, and open land/excavation pits of Allenstown Aggregate and Plourde Sand and Gravel are collectively vulnerable to the effects of high wind events. ◆ Downbursts are occurring with greater regularity. The Town’s highest elevation points may experience the greatest high wind impacts, including the steep slopes and hillsides. Many State recreational, private and Class VI roads such as Dodge Road or Podunk Road lead up and through these hills. ◆ Much of the Town is wooded and forested and sections would be difficult to access with trees and power lines down on the gravel, hilly residential roads. They could be difficult to access with treefall and power lines down from high wind events. Remote subdivisions include those off Deerfield Road or in manufactured housing parks. There are many roads in Town which have only one egress. ◆ Bear Brook State Park and current use lands utilize large amounts of tree cover. During high wind events, people recreating in the State Park 	4	2	2	2	8.0 HIGH

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<p>and its trail systems could experience unfavorable conditions during high wind events and may require rescue assistance in difficult to access locations.</p> <ul style="list-style-type: none"> ◆ Agricultural operations including McNamara Farm are vulnerable to damage from High Winds (see list above in Drought) ◆ Older, or historical buildings are vulnerable to high wind damage include public and private buildings in the greater Downtown, including Town Hall, Community Center, Allenstown Historical Society, St. Jean’s Parish Church, China Mills, historic homes, and facilities beyond Downtown: museum buildings in Bear Brook State Park, about 15 cemeteries, and Allenstown Meeting House on Deerfield Road could be especially vulnerable to high winds. ◆ Floods are also possible with severe wind storm events (see Inland Flooding). 					
<p>INLAND FLOODING Rains, Snow Melt or Flash Floods <i>*Event(s) Within Last 5 Years*</i></p>	<ul style="list-style-type: none"> ◆ Entire Town, Floodplains of the Suncook River and Merrimack River. <u>Major watercourses</u> include the Suncook River and Merrimack River, Catamount Brook, Little Bear Brook, Boat Meadow Brook, Bear Brook, and Pease Brook. <u>Major waterbodies</u> include Iris Pond (commonly and mistakenly referred to as Iris Pond) in the Downtown, Bear Hill Pond, Catamount Pond, Hall Mountain Pond, Smiths Pond, and Hayes Marsh. ◆ Flooding could occur from breached Dams within and connected to Allenstown: 4 Low (L) Hazard Dams: Bear Hill Pond (Boat Meadow Brook), Catamount Pond Dam (Bear Brook), Hall Mountain marsh (Bear Brook), and Hayes Marsh Dam (Catamount Brook). Downstream flooding is could occur in the Downtown (Suncook Village) area from a failed the High (H) Hazard Garvins Falls Dam (Merrimack River), (H) Pembroke Dam (Suncook River), Significant Hazard Webster Mill Dam (Suncook River), or Low Hazard China Mill Dam (Suncook River). Other recreation ponds, Non-Menace dams and regular beaver dams can breach and flood roadways. ◆ Any of these waters could flood local roads, homes, buildings and waterfront properties of Riverside Drive, Fanny Drive, Albin Avenue, Swiftwater Condominiums (~41 units) on Swiftwater Drive, or the Deerfield Road area. ◆ Runoff from roadways or heavy rain or snowmelt can cause floods and washouts over the Entire Town. Regular washout locations have 	2	1	1	1	2.0 LOW

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<p>included Dodge Road, Chester Turnpike Road, Albin Avenue, Wing Road, and Mount Delight Road. Previous locations of washout were previously repaired. (See also Aging Infrastructure)</p> <p>◆ Roads, bridges, drainage systems and related areas can flood, creating flooded infrastructure for many travelers. This includes the Mount Delight Bridge which needs to be replaced.</p>					
<p>LANDSLIDE Soil, Rockslide or Excavation Areas <i>*Event(s) Within Last 5 Years*</i></p>	<p>◆ Slopes greater than 25%, including roads with steep ditching or embankments are most vulnerable to landslide. The Town has numerous hills over 1,000' in elevation, most of them with private roadways.</p> <p>◆ Roads with steep ditching or embankments are most vulnerable to landslide such as Dodge Road, Lower Road, New Rye Road or US 3. Gravel roads with ditching in Allenstown could be subject to landslide conditions (see Inland Flooding). Landslide is an uncommon hazard but one that could have devastating effects, including property damage.</p> <p>◆ The excavation sites in Town are potential areas of landslide/rockslide including the active Bailey's Quarry/ Hudson's Quarry, Allenstown Aggregate, and Plourde Sand and Gravel. In Allenstown, they are well maintained and used for private operations.</p>	1	1	1	1	1.0 LOW
<p>LIGHTNING <i>*Event(s) Within Last 5 Years*</i></p>	<p>◆ Entire Town. Areas of particular concern to lightning include critical facilities, high density areas, high elevations including Catamount Hill, Bear Hill.</p> <p>◆ The Downtown historic blocks are vulnerable to lightning strike and resultant conflagration. The area includes Suncook Village (including all Town facilities, Allenstown Elementary School and Armand Dupont School) with high density residential, commercial and tax exempt facilities (see also High Wind).</p> <p>◆ Numerous outdoor recreational and gathering places such as Bear Brook State Park trails and Volunteer Park, School athletic fields, and Merrimack River Canoe Access could be vulnerable to lightning.</p> <p>◆ Other locations containing large numbers of people include Allenstown Elementary School, Armand Dupont School, Community Center, Town Hall, Tender Years Child Care Center, Pine Haven Boys Center, the Churches, and senior housing facilities (Sunrise Hill Apartments). High density populations in proximity to wooded and forested</p>	4	1	1	1	4.0 LOW

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<p>areas include Bear View Crossing MHP, Catamount Hill Cooperative MHP, Garden Drive MHP, Old Towne HMP, River Pines MHP, Rodgers/Betty Lane HMP, Swiftwater Condos, and campgrounds.</p> <p>Lightning and Wildfire and potential conflagration could result in these densely populated areas.</p> <ul style="list-style-type: none"> ◆ Businesses with potentially hazardous materials onsite such as fuel, gasoline, used fluids (various automotive repair shops, Circle K Convenience Store/gas station, Mega X Convenience Store/gas station, etc) could each be vulnerable to lightning and fire. ◆ The Allenstown Wastewater Treatment Facility, Town Highway Garage, Police Department, Fire Department, Town Hall, Transfer Station and Old Meetinghouse could be vulnerable to lightning. ◆ Outdoor utilities and antennas would have high impacts should lightning strike, such as the Bailey Avenue telecommunications tower and Pembroke Water Works tower; Eversource electric lines and switching stations. ◆ Old, historic or wooden structures and those structures without lightning rods would be more susceptible to damage from a strike than those buildings with the rods. Buildings in the greater Downtown/Suncook Village and buildings within the historic buildings within Bear Brook State Park could be vulnerable to lightning. ◆ Remote, forested areas, parks, public Town Forests, conservation areas, open recreation fields, points of higher elevation can be dangerous to people and property if struck by lightning, including Bear Brook State Park and its trail systems. There are very few conservation lands in town other than the Park. 					
<p>PUBLIC HEALTH Infectious Diseases, Air & Water Quality, Biological, Addiction, Arboviral, or Tick-borne *Event(s) Within Last 5 Years*</p>	<ul style="list-style-type: none"> ◆ Entire Town. Congregated populations and medical facilities can be more vulnerable to infectious diseases: Allenstown Elementary School, Armand Dupont School, Pine Haven Boys Center, Community Center, Town Hall, Tender Years Child Care Center, the Churches, Elliott Family Health Center at Suncook, and senior housing facilities (Sunrise Hill Apartments), and Allenstown Animal Hospital. ◆ Local stores and eateries increase the risk of exposure to and transfer of food-borne illness, causing potential public health concerns. These include Country Diner, Dunkin Donuts, Olympus Pizza, Subway Restaurant, and more. See also sites listed in APPENDIX A. 	4	4	4	4	16.0 HIGH

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<ul style="list-style-type: none"> ◆ The Town's local Point of Dispensing (POD) is the Bow POD satellite located at the Bow High School. Allenstown is a member of the Capital Area Public Health Network. ◆ The many forests, conservation areas, agriculture, wooded areas, and ponds can support ticks (Tick-borne) hosting bacterial diseases (Lyme, Anaplasmosis, Leptospirosis, more) and mosquitos (Arboviral) can host many bacteria (West Nile, EEE, Equine Infectious Anemia, etc) which transmit diseases. The Bear Brook State Park and trail systems attract people, which can also enable disease transmission. Lyme disease rates are increasing according to NH Health WISDOM, with no indication of decline. ◆ Waters and beaches susceptible to high bacteria counts in the summer include banks of the Suncook River and Merrimack River, and any of the Ponds used as beaches. Ponds especially are prone to high cyanobacteria (blue-green algae) counts that are harmful to people, or host e. coli counts from people or wildlife. ◆ Wheelabrator in Penacook and the Merrimack Power Station are considered some of the largest sources of local air pollution, as is the vehicular traffic of I-89. Air pollution regularly reaches the Central NH region from Canada or the US Midwest. 					
RIVER HAZARDS Ice Jams, Scouring, Erosion, Channel Movement or Debris *NO Event(s) Within Last 5 Years*	<ul style="list-style-type: none"> ◆ Entire Town, Floodplains of the Suncook River and Merrimack River. <u>Major watercourses</u> include the Suncook River and Merrimack River, Catamount Brook, Little Bear Brook, Boat Meadow Brook, Bear Brook, and Pease Brook. <u>Major waterbodies</u> include Iris Pond (commonly and mistakenly referred to as Iris Pond) in the Downtown, Bear Hill Pond, Catamount Pond, Hall Mountain Pond, Smiths Pond, and Hayes Marsh. Because of the high volumes and swift moving Rivers, bank erosion, scouring and channel movement are hazards of potential concern. ◆ Erosion of banks continues on along locations of the Suncook River (see Map 5 Fluvial Geomorphic Location series). ◆ Ice jams could endanger the dams and nearby facilities and have the potential to recur. Areas currently susceptible include the US 3 bridge, Main Street Bridge, NH 28 double decker bridge. These ice jams can endanger the bridges and travelers. 	3	1	1	1	3.0 LOW

4 HAZARD RISK ASSESSMENT

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			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<ul style="list-style-type: none"> ◆ Floating debris down the Rivers and Brooks can accumulate at bridges and dams (see Map 7 Large Woody Material series). 					
SEVERE WINTER WEATHER Snow, Ice, Blizzard or Nor'Easter *Event(s) Within Last 5 Years*	<ul style="list-style-type: none"> ◆ Entire Town. Particular areas of concern during winter weather include high density areas as listed in High Wind Events, including Downtown buildings and US 3 (traffic crashes). ◆ Utilities at risk of winter weather include aboveground poles, underground electric lines, underground wastewater treatment lines, gas lines, and water lines (mostly Downtown) and the switching station could be susceptible. The Deerfield Road, Glass Street, and River wastewater pumping stations and Pembroke Water Works tanks at Bailey Avenue could be at risk of icy or heavy snow load conditions. Telecomm towers US 3 as well as Town Department antennas could receive significant impacts from snow, ice, and blizzards. ◆ The entire Allenstown road network is susceptible to winter conditions, including the state roads. Local Town roads are also often difficult to travel. Many accidents occur on NH 28 (Allenstown to Epsom) and US 3 (Pembroke to Hooksett) during storms. Many local roads and the hilly gravel roads have sharp incline/decline or cars have trouble traveling the road during winter conditions. ◆ Populated areas of higher elevation include the Deerfield Road area. Many roads lead up and through these hills which can be difficult to keep clear of snow and tree fall. ◆ Much of the Town is wooded and forested with most sections vulnerable to snow, ice effects and power failure. Homes would be difficult to access with trees and power lines down on the gravel, hilly residential roads. They could be difficult to access with treefall and power lines down from winter storm events. Remote housing developments include Bear View Crossing MHP, Catamount Hill Cooperative MHP, Garden Drive MHP, Old Towne HMP, River Pines MHP, Rodgers/Betty Lane HMP, Sunrise Hill Apartments, Swiftwater Condos, campgrounds, and developments off Deerfield Road which could become isolated by treefall. There are many more such subdivisions and neighborhoods in Allenstown, and many have only one egress. The manufactured housing parks also have homes less capable of withstanding snowload. 	4	2	2	2	8.0 HIGH

4 HAZARD RISK ASSESSMENT

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			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<ul style="list-style-type: none"> These roads and especially the one-egress roads are often blocked by fallen trees or powerlines, and residents cannot access their homes or leave their homes until the road is clear. Local government operations in the Allenstown Town Hall, Highway Garage, Police Department, Fire and Rescue Department, Allenstown Wastewater Treatment Facility and Transfer Station, conduct essential business and make decisions during winter weather conditions that keep residents safe. These vital personnel may not live in Town or may have commuting difficulties getting to work to perform these duties. 					
SOLAR STORMS AND SPACE WEATHER Solar Winds, Geomagnetic Storms (Aurora Borealis), Solar Radiation or Radio Blackout *NO Event(s) Within Last 5 Years**	<ul style="list-style-type: none"> Entire Town. Should a solar event impact the Region, it is likely most electrical and radio systems will become unavailable. The Town's critical facilities must be operational to support residents: Allenstown Town Hall, Highway Garage, Police Department, Fire and Rescue Department, Allenstown Wastewater Treatment Facility and its Deerfield Road, Glass Street, and River wastewater pumping stations, Transfer Station, the Pembroke Water Works infrastructure, Communications Tower as well as the Allenstown Elementary School, and Armand Dupont School facilities. The aurora borealis is regularly seen on Mount Kearsarge to the northwest in Warner and could likely be spotted from nearby Oak Hill Fire Tower (Loudon), indicating geomagnetic storms are present without noticeable effects. The Town's technology is most vulnerable to space weather, especially communications systems (internet, cable, cellular) and the electrical grid. Telecommunications Towers on Bailey Avenue/US 3; the Eversource electric lines and switching station by the Library, community well systems, and private wells serve residents. Electricity (powerlines & substations) may be interrupted. Alternate support or communications systems available in the event of blackout or equipment failure include: Town Department back-up generators and resident generators can temporarily provide power alternatives, and the Concord Area Fire Mutual Aid Dispatch could provide regional communications, and local ham radio operators could provide assistance. 	3	1	1	1	3.0 LOW

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			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
TROPICAL AND POST-TROPICAL CYCLONES Hurricanes, Tropical Storms or Tree Debris *NO Event(s) Within Last 5 Years*	<p>◆ Entire Town. Most Tropical Events would impact vulnerable areas including populated buildings, high-density locations, and utilities serving residents and businesses, antennas, and telecommunications towers (See listed under Earthquake & High Wind).</p> <p>◆ Much of the Town is wooded and forested and sections would be difficult to access with trees and power lines down on the residential roads. They could be difficult to access with treefall and power lines down from Tropical events. Deerfield Road and its population could be difficult to access. (See developments and remote areas listed under High Wind).</p> <p>◆ Agricultural areas are vulnerable to damage from Tropical Events: (See listed under Drought).</p> <p>◆ Older, or historical buildings are vulnerable to Tropical wind damage.</p>	3	1	1	1	3.0 LOW
WILDFIRE Brushfire, Outdoor Fires or Accidental *Event(s) Within Last 5 Years*	<p>◆ Entire Town. Locations most susceptible to Wildfire include vulnerable populations and buildings as identified in Lightning. Backyard burning without a permit is often the cause of brushfires throughout Town.</p> <p>◆ Remote, forested areas, parks, public Town Forests, conservation areas, open recreation fields, points of higher elevation than surrounding area can be dangerous to people and property during Wildfire. Bear Brook State Park, its roads (Bear Hill Pond Road, Podunk Road, Blackhall Road, Spruce Pond Road) and its trail systems could experience difficult to access wildfires while people are recreating on these lands. There are very few conservation lands in town other than the Park.</p> <p>◆ Much of the Town is wooded and forested and sections would be difficult to access in case of wildfire. There about dozens of backwood or undeveloped parcels in Town which are 25 acres or greater, indicating potentially difficult access by fire apparatus,(Dodge Road, Wing Road, Pauper Road, Philbrick Road, New Rye Road, Dowst Road) many of which are located off of Deerfield Road. Many of the high elevation roads could be difficult to evacuate should wildfire encroach.</p> <p>◆ Inaccessible locations are more vulnerable to wildfire impacts because fire crews and emergency personnel have greater difficulty responding quickly to fires in these locations. Several extremely large, undeveloped parcels are located around town; some of those over 60 acres include: Sawyer House Lot – Wing Road (60 acres),</p>	4	1	1	1	4.0 LOW

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			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<p>Eames Wood Lot – Pauper Road (68 acres), Dussault Wood Lot – Pinewood Road (70 acres), Mulaire Backland Wood Lot – Granite Road (71 acres), Hoezel Wood Lot – Dowst Road (76 acres), Beaucher Wood Lot – Wing Road (80 acres), Eames Wood Lot – Dowst Road (92 acres).</p> <p>◆ Slash and brush are found on the ground on throughout Allenstown, a highly rural community around a populated Downtown. As people venture into the woods, potential wildfires are waiting to happen.</p>					
SECONDARY TECHNOLOGICAL AND HUMAN HAZARDS						
<p>AGING INFRASTRUCTURE Bridges, Culverts, Roads, Pipes or Underground Lines *Event(s) Within Last 5 Years*</p>	<p>◆ Entire Town. Most dams, culverts, and bridges could experience impacts of aging infrastructure. Many historic or wooden covered bridges have damaged by high water debris or ice floes, such as Main Street Bridge over Suncook River, US 3 Bridge over Suncook River, and NH 28 Bridge over the Suncook River.</p> <p>◆ US 3 Bridge over Suncook River is red-listed by the state, with initial plans to begin in 2021. Remaining State bridges seem to be in decent shape at this time. Town is attempting to replace the Mount Delight culverts over Pease Brook with a box culvert bridge.</p> <p>◆ The Wastewater Treatment Facility on Canal Street, has components, manholes, Deerfield Road, Glass Street, and River wastewater pumping stations, siphons, and underground pipes. The Dept maintains an Asset Management Plan to inventory existing components and plan for future costs and upgrades.</p> <p>◆ Many old or undersized culverts remain vulnerable, although the Highway Department replaces dozens annually. The main washout locations yet to be repaired include 28 Dodge Rd, 64 Chester Turnpike, all of Albin Ave under drainage and 3 catch basins, 105 Wing Rd, and 186 Deerfield road.</p> <p>◆ The Town's roads are becoming more difficult to maintain and rehabilitate because of lack of funding and over 21 miles of Town Class V roads alone. There are at least 72 roads the Town is responsible for maintaining. Town roads with the highest maintenance priority are Canal Street, Chester Turnpike, Deerfield Road, Granite Street, New Rye Road, River Road, School Street, Turnpike Street, and Valley Street. Weight limits need to be posted and enforced.</p>	not scored	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<p>◆ Underground electric utilities or natural gas pipes are often old and subject to breakage during earthquake or aging materials. The Tenneco gas main pipeline runs through Suncook Village, and Liberty gas has a network of pipes providing gas service to the Downtown area.</p>					
<p>FIRE Vehicle, Structure, Arson or Conflagration <i>*Event(s) Within Last 5 Years*</i></p>	<p>◆ Several locations around Town are potential sites for explosions and serious fires and numerous other sites that have the potential for prolonged burning. They include above ground fuel tanks, high tension power lines, manufacturing and industrial businesses, areas away from fire ponds or dry hydrants; vacant buildings, foreclosed homes or seasonal buildings; or buildings in densely populated areas. See Drought for an agricultural operation list.</p> <p>◆ The Downtown area, manufactured housing parks, Deerfield Road area, and other high density areas could be subject to conflagration (see Lightning).</p> <p>◆ Allenstown is home to many industrial activities, mills, excavation, auto repair businesses and other flammable activities. These are also large employers for the Town. School laboratories and facilities could catch fire through occupational event, accident, or arson. Other businesses could be vulnerable to fire and may utilize hazardous materials in their work. See APPENDIX A for hazardous materials and business lists.</p> <p>◆ Vehicle fires could occur anywhere, in parking lots, driveways, or roadways. US 3 from Pembroke to Hooksett and NH 28 from Allenstown to Epsom are highly traveled routes. The Allenstown Fire and Rescue responds to crashes regularly along these State highways. See also APPENDIX A.</p> <p>◆ Perhaps the greatest concern for human-started fires is the forested and remote Bear Brook State Park. See Lightning and High Wind for other remote area lists.</p>	not scored	not scored	not scored	not scored	not scored
<p>HAZARDOUS MATERIALS Haz Mat Spills, Brownfields or Trucking <i>*NO Event(s) Within Last 5 Years*</i></p>	<p>◆ Most likely routes of vehicular traffic transport of hazardous materials include Us 3 and NH 28. Other local roads could have serious transportation accidents involving hazardous materials.</p> <p>◆ Vulnerable areas for targeted mass evacuation from hazardous materials spills include the entire Downtown area. Specific facilities Downtown, and throughout the Town, include Allenstown Elementary School, Armand Dupont School, Town Hall, Community Center, Pine Haven Boys Center,</p>	not scored	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<p>the Churches, Elliott Family Health Center, and Suncook Pond Senior Housing facilities.</p> <ul style="list-style-type: none"> ◆ The largest or most dangerous stationary sites that store and/or handle haz mat on site (fertilizer, pesticides, fuel, etc) are listed in APPENDIX A. See list of agriculture operations in Drought. Occupational stationary haz mat sites where spills could occur include schools, manufacturing, industry, of which there are many in Town. Key sites include fuel stations, excavation sites, automotive businesses, construction businesses, and the Transfer Station. Town facilities such as the Allenstown Wastewater Treatment Plant and Pembroke Water Works (in Pembroke) utilize and store strong chemicals such as sodium dioxide. ◆ Possible brownfields sites to be aware of include old mill and industrial buildings along the Suncook River. There are also known to be properties with “illegal” long term, non-permitted junkyard use occurring. 					
<p>LONG TERM UTILITY OUTAGE Power, Water, Sewer, Gas, Internet, Communications or Live Wire Danger *NO Event(s) Within Last 5 Years**</p>	<ul style="list-style-type: none"> ◆ Entire Town. Electrical outages are often town wide, but high density areas or vulnerable populations are of greatest concern: Downtown/Suncook Village area and Deerfield Road area. ◆ Power outages (Eversource/Unitil) may last for several days in the remote areas before service is restored from a large event. Systems failures could affect Town businesses and local government on an isolated scale. The internet Xfinity/Comcast enables alternative communication options, and many rely on VOIP for telephones. ◆ Communications failure would be worse if it occurred during a holiday or inhibited emergency dispatch and EOC operations. Most Town radios are interoperable, and they are used in more than one location. The single telecommunications towers, located on US 3/Bailey Avenue in Hooksett, holds critical local, CAFMAC, County, State, and federal repeaters. Local antennas are located on Town Department buildings. ◆ The Town is serviced by the Capital Area Mutual Aid Fire Compact which handles all the Police, emergency medical service, and Fire dispatching. They have redundant capabilities and are regularly upgrading their systems. ◆ Other utility systems, such as LP gas, generators, oil tanks, wood fuel and more, are used by residents as both back up and primary 	not scored	not scored	not scored	not scored	not scored

4 HAZARD RISK ASSESSMENT

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<p>heating. See also Aging Infrastructure and APPENDIX A.</p> <ul style="list-style-type: none"> ◆ Much of the Town is wooded and forested and sections would be difficult to access with excessive power lines down. See also High Wind for remote housing developments with large numbers of homes. ◆ The agricultural farms (feeding or dairy animals) should be monitored (See Drought) during extended utility outage. 					
<p>TRANSPORTATION CRASH Vehicle, Airplane, Helicopter, Rail, Interstate, Pedestrian or Bicycle <i>*Event(s) Within Last 5 Years*</i></p>	<ul style="list-style-type: none"> ◆ NH 28 and US 3 are the main highways through Town and have the most reported crashes. Rerouting traffic can be dangerous resulting in other potentially severe crashes. Some of the more frequent crash locations occur along NH 28 at its intersection with US 3. ◆ Crashes also occur throughout the community at rural intersections, along hills and s-curves. All gravel roads have a 25 mph speed limit. Winter and summer months are of particular concern, especially with the extra summer traffic generated by Bear Brook State Park. See also MAPS 1-4. ◆ Crashes increase during hazard events, winter weather, spring snow melt (washouts) and wind storms. High density areas, such as the Downtown encourage bicycling and pedestrians and but also have the potential for serious crashes. ◆ The Town may have alternative crash potential, such as air traffic. The Manchester-Boston Regional Airport is nearby and supports large-engine plane traffic which have the potential of crashing in nearby communities. Small nearby airports like Concord Municipal Airport and Concord's NH National Guard have regular small plane and helicopter traffic. Adjacent Pembroke has an active helicopters business with heliport pads for landing and takeoff. Allenstown is in the flightpath of all of these facilities. ◆ Increased use of personal drones creates additional hazard for those on the ground. 	not scored	not scored	not scored	not scored	not scored
<p>MASS CASUALTY INCIDENT As a result of any hazard event <i>*NO Event(s) Within Last 5 Years*</i></p>	<ul style="list-style-type: none"> ◆ Unlikely, but Possible. A mass casualty event could occur as a possible secondary effect of a large scale event, such as Terrorism/Violence, Public Health, or High Wind Event. These could occur throughout the Town. ◆ Any mass casualty event could be localized to a certain event. Locations and occasions of potential public unrest include: Town Hall, Community Center, Schools, Bear Brook State Park, Town & School Meetings, events at Volunteer Park and school fields, voting day, local board meetings, 	not scored	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	during visits from political candidates, large events such as Old Home Day, Veteran's Parade, School sports events, Homecoming, Fall Foliage Festival, political rallies. ♦ Allenstown is a member of the Capital Area Public Health Network (CAPHN) and other regional emergency groups. The Town's local primary shelter with CAPHN is located at the Community Center (30 beds), with secondary shelter at Allenstown Elementary School with the American Red Cross. Allenstown Fire and Rescue could provide EMS and transport to a larger facility such as Concord Hospital in 15 minutes.					
TERRORISM/ VIOLENCE Active Shooter, Hostage, Public Harm, Civil Disturbance/ Unrest, Politically Motivated Attacks, Incendiary Devices, Sabotage or Vandalism *Events(s) Within Last 5 Years*	♦ Possible. Terrorism/ violence could possibly occur anywhere in Entire Town and could result in mass casualty . Most susceptible non-municipal sites could include: Bear Brook State Park, Allenstown Elementary School, Armand Dupont School, Community Center, Tender Years Child Care Center, Pine Haven Boys Center, the Churches, and Suncook Pond Senior Housing. High density populations are often more prone to disturbance and include Bear View Crossing MHP, Catamount Hill Cooperative MHP, Garden Drive MHP, Old Towne HMP, River Pines MHP, Rodgers/Betty Lane HMP, Sunrise Hill Apartments, Swiftwater Condos, and campgrounds. ♦ All municipal facilities in Allenstown, Town Hall and Allenstown Free Library, Police Station, Fire & Rescue Station, Highway Garage, Transfer Station, Allenstown Wastewater Treatment Facility, Old Meetinghouse, and Community Center, have a risk of terrorism or violence . ♦ Private manufacturing or industrial businesses with large quantities of hazardous materials could be possible terrorism targets. ♦ Sabotage would be most likely to occur at Town, School, State park or governmental facilities to halt operations or computer systems, including the telecomm tower & antennas, switching stations, and the Town Hall and School District computer systems, or the Wastewater Treatment Plant facilities. ♦ Vandalism could occur at dams, under bridges, wooden covered bridges, US 3 telecomm or water tower, cemeteries, vacant buildings, beaver dams, recreation areas, etc. ♦ Hostage and active shooter situations might most likely occur domestically anywhere in the Town, in municipal buildings, Churches, schools.	not scored	not scored	not scored	not scored	not scored

Town of Allenstown, NH Hazard Mitigation Plan Update 2020

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Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town <i>See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)</i>	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	<ul style="list-style-type: none"> ◆ Sites of local significance (Old Meetinghouse, Volunteer Park, Bear Brook State Park) or other public places could become potential sites of Terrorism/ Violence. 					
CYBER EVENT Municipal Computer Systems Attack, Website Overtake, Cloud Data Breach, Telephone Rerouting, Identity Theft, Phishing, Ransomware, Virus or Phone Scams *NO Event(s) Within Last 5 Years*	<ul style="list-style-type: none"> ◆ Entire Town. Cyberattack could target Town or School websites, computer systems, cloud data systems, archival records, email phishing, etc. Town Hall, Police Department, Fire & Rescue Department, Transfer Station, Highway Department, Community Center, Library, Historical Society records, State Park would be high-value targets. ◆ Email scams and identity theft are likely regular problems for residents and businesses. Towns often post known attempts on websites to inform residents. The large businesses in Allenstown (See APPENDIX A) would need to be aware of the risks. ◆ The Police Department receives phone calls from residents about internet and email scams and reports them to the appropriate authorities. 	not scored	not scored	not scored	not scored	not scored

Source: Allenstown Hazard Mitigation Committee

Central NH Region Major Disaster Declarations, 1973-2020

The Central NH region, which encompasses parts of Merrimack County (**18** communities) and Hillsborough County (**2** communities), has been damaged by **22** presidentially-declared major disasters (DR) in the last **47** years, between **1973-2020** and by **7** presidentially-declared emergencies (EM) during this same period. Although a natural disaster typically befalls multiple counties in New Hampshire, only those damaging either Merrimack County or Hillsborough County were identified in this section.

Over the last **15** years (**2005-2020**), the Central NH region of containing Merrimack and Hillsborough Counties experienced **13** presidentially- declared natural major disasters [DR-] and **3** presidentially-declared emergency declarations [EM-], totaling **18** disasters in the last **15** years. The earliest Central NH region declarations spanned **1973** to **2004** (**32** years) and yielded **9** presidentially-declared natural major disasters and **4** presidentially-declared emergency declarations, a total of **13** disasters in **32** years.

Between **2005-2020**, the most recent round of major disasters afflicting the Central NH Region, of the **13** natural disasters [DR-] **5** were floods, **4** were snow/ice storms, **3** were wind/rain/lightning storms, and **1** is public health. The disasters [DR-] experienced between **1973-2004** were **7** floods, **1** snowstorm, **1** wind/rain/lightning storm. While disaster declarations within a county open up the ability to receive Public Assistance (PA) funding and Individual Assistance (IA) funding, Hazard Mitigation Grant Program (HMGP) *plan* funding is typically made available to all communities statewide, and for those towns with an active, approved Hazard Mitigation Plan, HMGP *project* funding becomes available.

Emergency declarations [EM-] are often proclaimed for counties in New Hampshire to help communities receive funding for less serious hazard events that may have caused more damage in nearby declared declaration [DR-] counties or states. The **2005-2020** emergency declarations [EM-] for **2** snow storms and **1** hurricane (wind) significantly impacted communities such as Allenstown, although not enough to be classified as a declared disaster [DR-] for many counties. Nonetheless, Public Assistance Protective Measures funding was available in the Central NH region to those who needed the financial help. The **1973-2004** period saw emergency declarations [EM-] for **4** snow storms.

PUBLIC ASSISTANCE GRANT FUNDING

The last declared disaster in Merrimack County, in which Allenstown is located, was the winter snowstorm event in **February 2013** for which Allenstown applied for and received **\$12,768** in federal Public Assistance funding. Details of Central NH region declared disasters and emergency declarations since **1973** and federal funding provided to the Town of Allenstown are displayed in **Table 11**. Most of these disasters will be described within the following **Past Disasters and Severe Weather Events** section.

**Table 11
Central NH Region Major Disaster Declarations, 1973 to 2020**

FEMA DR-	Local Disaster Name	Incident Period	FEMA Disaster Name	Includes County*		FEMA Public Assistance (PA) Funding To Allenstown**
				Merr	Hill	
	TOWN ADD NEW DISASTER ROWS HERE-					
4516	2020 COVID-19 Pandemic	Apr 3, 2020 – TBD	COVID-19 Novel Coronavirus Pandemic (national, global)	M	H	\$TBD
4355	2017 October Wind Storm	Oct 28-20, 2017	Severe Storm and Flooding from Tropical Storm Phillippe	M	---	\$0
4209	2015 January Blizzard	Jan 26-28, 2015	Severe Winter Storm and Snowstorm	---	H	\$0
4105	2013 February Snowstorm	Feb 8-10, 2013	Severe Winter Storm and Snowstorm	M	H	\$12,768
4095 EM-3360	2012 Hurricane Sandy Emergency	Oct 26-Nov 8, 2012	Hurricane Sandy	EM-M	EM-H	\$3,130
4049 EM-3344	2011 Halloween Snow Storm Emergency	Oct 29-30, 2011	Severe Storm and Snowstorm	EM-M	H	\$0
4026	2011 Tropical Storm Irene	Aug 26-Sep 6, 2011	Tropical Storm Irene	M	---	\$4,011
1913	2010 March Flooding & Winds	Mar 14-31, 2010	Severe Storms and Flooding	M	H	\$0
1892	2010 Winter Storm	Feb 23-Mar 3, 2010	High Winds, Rain, Snow	M	H	\$59,662
1812	2008 December Ice Storm	Dec 11-23, 2008	Severe Winter Storm	M	H	\$23,506
1799	2008 September Flood	Sep 6-7, 2008	Heavy Rains and Floods	M	H	\$4,568
1782	2008 July Tornado	Jul 24, 2008	Tornado, Severe Winds, Heavy Rains	M	---	\$0
1695	2007 April Spring Flood	Apr 15-23, 2007	Severe Storms and Flooding	M	H	\$48,139
1643	2006 Mother's Day Flood	May 12-23, 2006	Severe Storms and Flooding	M	H	\$33,727
1610	2005 Columbus Day Flood	Oct 7-18, 2005	Severe Storms and Flooding	M	H	\$1,685
EM-3207	2005 Snow Emergency	Jan 22-23, 2005	Snowstorm	M	H	\$0
EM-3193	2003 Snow Emergency	Dec 6-7, 2003	Snowstorm	M	H	\$5,216
EM-3177	2003 Snow Emergency	Feb 17-18, 2003	Snowstorm	M	H	\$5,067
EM-3166	2001 Snow Emergency	Mar 5-7, 2001	Snowstorm	M	H	\$5,820
1231	1998 Flooding	Jun 12-Jul 2, 1998	Severe Storms and Flooding	M	H	\$0
1199	1998 December Ice Storm	Jan 7-25, 1998	Ice Storms	M	H	\$0
1144	1996 Storms and Flooding	Oct 20-23, 1996	Severe Storms and Flooding	M	H	\$0
1077	1995 Flood	Oct 20-Nov 15, 1995	Storms and Floods	M	---	\$0

FEMA DR-	Local Disaster Name	Incident Period	FEMA Disaster Name	Includes County*		FEMA Public Assistance (PA) Funding To Allenstown**
				Merr	Hill	
EM-3101	1993 Blizzard	Mar 13-17, 1993	Blizzards, High Winds and Record Snowfall	EM-M	EM-H	\$1,080
917	1991 Hurricane Bob	Aug 18-20, 1991	Severe Storm	---	H	N/A
876	1990 Flooding and Severe Storm	Aug 7-11, 1990	Flooding and Severe Storm	M	H	No data
789	1987 Storms and Flooding	Mar 30-Apr 11, 1987	Severe Storms and Flooding	M	H	No data
771	1986 Storms and Flooding	Jul 29-Aug 10, 1986	Severe Storms and Flooding	---	H	N/A
399	1973 Storms and Flooding	Jul 11, 1973	Severe Storms and Flooding	M	H	No data
Total Public Assistance (PA) FEMA Funding to Allenstown, 1993-2020**						\$208,380

Source: http://www.fema.gov/disasters/grid/state/33?field_disaster_type_term_tid_1=All

*M = Merrimack County (18 towns in CNH region) H = Hillsborough County (2 towns in CNH region)

** Dollar figures are rounded to the nearest \$100

To help reclaim some of the costs these disasters wrought on town property and infrastructure, Allenstown applied for and received FEMA Public Assistance (PA) funds, Categories A-G, a 75% grant and 25% match program for several declared Merrimack County disasters. These PA funds have been used for overtime wages for Town employees, equipment rentals, snow removal, washout repair, road reconstruction, bridge repair, debris removal, and more.

The database where the Public Assistance funding information resides is available from **1993** to present (**2020**). The Public Assistance (PA) disaster funding was sought for and received by Allenstown for **8** of the **17** eligible *declared disasters* [DR-] in Merrimack County during this timeframe. *Emergency declaration* [EM-] funding was sought and received by Allenstown for **5** of the **7** eligible declared emergencies during this time period. In total, Allenstown was eligible for Public Assistance funding from **23** storms or public disasters during this time period and applied for received PA funding from **12** of these storms. This data is available through FEMA at <https://www.fema.gov/openfema-dataset-public-assistance-funded-projects-details-v1>.

The most expensive disaster for Allenstown in terms of FEMA Public Assistance (PA) funds received for recovery was the **2007 April Flood** after which Allenstown received **\$48k** for **6** applications for project funding to help repair River Road and other roads and bridges. The last time the Town was awarded PA funding was the **\$13k** for the snow removal from the **2013 February Snowstorm**. All Public Assistance funding to date from **1993** to **Feb 2013**, totals **\$208k**. This detail is displayed previously in **Table 11** and is summarized to \$100/\$1000 in the forthcoming **Table 12** for each disaster.

Past Disasters and Severe Weather Events

The Town of Allenstown has been affected by several significant natural disasters within the last decade and applied for and received Public Assistance (PA) funding for many of these events. Severe natural hazard events have been occurring more frequently in Merrimack County than in the past. While these events on occasion disrupted the flow of the community and isolated residents for days, the disaster impacts were relatively mild as few injuries were reported. FEMA provided Public Assistance funding to the Town for tasks such as cleanup, road repairs, tree and brush cutting, and culvert replacement.

The Hazard Mitigation Committee helped provide anecdotal descriptions of how the recently declared natural disasters or emergency declarations for the Central NH Region affected Allenstown and its residents. Public Assistance disaster funding opportunities open to communities when a disaster is declared within a county. The Town of Allenstown applied for and received this funding for several recently declared disasters.

Although New Hampshire experienced more disasters than those shown in **Table 12**, typically only those which occurred as declared disasters [DR-] or emergency declarations [EM-] in the Central NH region (Merrimack and Hillsborough Counties) were described. Sometimes a disaster occurring in a nearby county, such as Rockingham County in close proximity to Allenstown, will be included. Refer to the [State of New Hampshire Multi- Hazard Mitigation Plan 2018](#) for a complete list of disasters which impacted the rest of New Hampshire.

Also identified were numerous past hazard events or severe weather events that occurred locally in the community and within the area that were impactful enough to note in **Table 12 Local and Area Hazard Event and Disaster History**. These past hazard events are listed consecutively with the newest events at the top of the table. If a specific category of event was not recorded in Allenstown in the last **5** years, this means the Hazard Mitigation Committee did not recall an event of significance since the **2015 Plan**.

COLOR KEY for Table 12:

Declared Disasters (DR-) or Emergency Declaration (EM-) in Merrimack County or Hillsborough County in Central NH Region	PA Funding \$ Received by Allenstown	Other Allenstown Local Hazard Event	Regional Hazard Event with Allenstown Impacts
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Table 12

Local and Area Hazard Event and Disaster History

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
TOWN TO ADD NEW EVENT ROWS HERE								Allenstown Hazard Mitigation Committee
								Allenstown Hazard Mitigation Committee
COVID-19 Pandemic Apr 2020-	4516	2020	Apr 3 – July - TBD	\$TBD	The NH Governor issued social activities restrictions, minimal public meetings, remote meetings held, social distance practices in April 2020. Cases closely tracked by NH Division of Health and Human Services and NH HSEM. The State EOC was activated.	Beginning in March 2020, the EOC activated for coronavirus. A couple of local people tested for coronavirus - results pending. The Town follows the Governor's orders.	Public Health, Pandemic, Airborne	Allenstown Hazard Mitigation Committee, CNHRPC, NH HSEM, NH DHHS
Allenstown Residential Fire Nov 2019	No	2019	Nov	N/A	N/A	Residential fire occurred at Bear View Crossing, and the Fire Dept successfully extinguished it, no injuries. A total of 8 fires occurred in BVC since 2007, but the FD response kept everyone safe.	Fire, Wildfire	Allenstown Hazard Mitigation Committee, Bear View Crossing, CNHRPC
Regional Civil Disobedience Event Sep 2019	No	2019	Sep	N/A	Civil disturbance with 67 arrested at Bow's Merrimack Station - Granite Shore Power, protesting the use of coal fuel. No injuries to protesters or police. Allenstown Police Dept participated through the Central NH Special Operations Unit. Reportedly the largest "green" civil disturbance in the State's history since the 1970s.	Allenstown Police Dept participated in the arrest through the Central NH Special Operations Unit.	Human, Civil Disobedience	Allenstown Hazard Mitigation Committee, CNHRPC
Allenstown Broken Water Main Flooding Aug 2019	No	2019	Aug	N/A	Pembroke Water Works serves the high density population of both communities.	Water Main break occurred at Bear View Crossing in Aug 2019. It took personnel 4 days to find the pipes. Six (6) breaks were found at once, other places located later. The Town offered water and sheltering during this time. Constant vibration	Aging Infrastructure, Public Health, Water Quality	Allenstown Hazard Mitigation Committee, Bear View Crossing, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						from neighboring excavation blasting, at least once per month is thought to be the cause since the entire BVC community can feel it.		
Severe Storm and Flooding Jul 2019	4457	2019	Jul 11-12	N/A for Allenstown	Within the Central NH Region, it is likely communities experienced local flooding conditions, with wind blowing trees down, causing short power outages. <u>Not a declared disaster in Merrimack or Hillsborough Counties.</u>	Allenstown could not apply for or receive PA funding. The Town had likely experienced hard rains, localized flooding and culverts required cleaning to ensure road washouts did not occur. A few trees may have fallen on roads, but the storm was not particularly notable to Allenstown.	River, Wind, Storms, Debris, Flood, Utility, Aging Infrastructure	Allenstown Hazard Mitigation Committee, CNHRPC, NH HSEM
Capital Area Mutual Aid Fire Compact (CAMAFIC) Communications Outage Apr 2019	No	2019	Apr 6	N/A	The dispatch center in Concord lost power because a tree fell on Unutil wires. The facility is protected by a large uninterruptible power supply (UPS) that protects computers, telephone & radio equipment. This UPS also is a power conditioner so it is always on, working in the power line entering the building insuring that incoming power is clean and on specification. The City of Concord also has a diesel backup generator for power loss, the UPS is running in the incoming line so it powers CAFMAC equipment during the very brief period it takes the generator to start and the transfer switch to transfer. This all worked seamlessly, as it has many time before. CAFMAC ran on the generator without issue but when Unutil reenergized their lines and the generator transfer was switched, the UPS failed. Despite having a backup for our backup, power to	About 23 communities belong to the CAMARAC and were similarly impacted by the radio dispatch outage, including Allenstown.	Utility Failure, Communications Failure	Allenstown Hazard Mitigation Committee, CNHRPC, CAFMAC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					equipment was lost, resulting in damage to additional equipment beyond the UPS. On-duty staff immediately started to implement the continuity of operation plan. Lakes Region began dispatching for CAFMAC but the Simulcast equipment at the dispatch center was down. Initially Lakes was dispatching on their antenna sites and the audio was poor and tones were not getting through. CAFMAC was able to get the radio system running again and Lakes Region was then able to dispatch calls over the Simulcast system. CAFMAC then sent 2 dispatchers to Lakes and called others back into the Concord center to work through the problems caused by the outage.			
Canterbury Epicenter Earthquake 2.3M (Mercalli III) Mar 2019	No	2019	Mar 16	N/A	Many local news outlets reported on this quake, which shook communities of Merrimack County at 9:23 PM. This was a widely felt earthquake (Concord, Webster, Hopkinton, Canterbury, Boscawen, Loudon, and more) although there were no reports of damage. USGS reported the epicenter was at Bryant Brook in Canterbury, just east of the Merrimack River. The depth was 4.2 km.	For every earthquake, Allenstown residents hear rumbles, shaking of homes, rattling of wall pictures, and hears sounds like an explosion or truck idling. No damages have been reported.	Earthquake, Earth	Allenstown Hazard Mitigation Committee, CNHRPC, wmur.com, unionleader.com, earthquake.usgs.gov, Hopkinton Dam USACE
Regional Thunderstorm, Severe Winds, Tornado and Debris May 2018	No	2018	May 3-5	N/A	All across the northern Central NH region, the evening of May 4 experienced heavy downpours along with strong wind gusts, straight line winds (microbursts) and possible tornadic activity. Many communities suffered significant tree and	The tornado did not travel through Allenstown. The winds accompanying this storm likely knocked down trees and power lines, blocked roads, and caused short-term power outages in Town.	Wind, Tornado, Debris, Utility, Power Outage	Allenstown Hazard Mitigation Committee, CNHRPC, wmur.com, Concord Monitor

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					structure damage. The National Weather Service determined an EF-1 tornado blew 36 miles, about 300 yards across, through Bradford, Warner and Webster in the CNHRPC Region after originating in Charlestown (Sullivan County). About 41,000 customers lost power as a result of the storm.			
Severe Winter Storm and Snowstorm Mar 2018	4371	2018	Mar 13-14	N/A for Allenstown	Within the Central NH Region, it is likely communities experienced regular snowstorm conditions, with heavy snow and wind blowing trees and power lines down, causing short power outages. <u>Not a declared disaster in Merrimack or Hillsborough Counties</u>	Allenstown could not apply for or receive PA funding. In March, another Nor'easter threatened to close Town Meeting, but this time the vote went on as scheduled. The Highway Dept likely spent additional time cleaning roads and debris to ensure all could vote.	Winter, Extreme Temps, Wind, Storms, Debris, Utility, Aging Infrastructure	Allenstown Hazard Mitigation Committee, CNHRPC, NH HSEM
Concord/Hopkinton Epicenter Earthquake 2.4M (Mercalli IV) Mar 2018	No	2018	Mar 7	N/A	A significant 2.4M earthquake was recorded by the USGS in March 2018 a little after 5:00am. Its epicenter indicated in Concord south of Warner Road at the Hopkinton town line on the Contoocook River at a depth of 3.2km. 90 citizen reports were filed to USGS. Weak to light shaking and a boom was heard as reported by a great number of people in Penacook, Allenstown, Dunbarton, Boscawen, Hopkinton, Webster, Salisbury, while its greatest intensity was felt in Warner and Concord. From Mar 2018, the Concord area had experienced 9 earthquakes in the past 365 days.	For every earthquake, Allenstown residents hear rumbles, shaking of homes, rattling of wall pictures, and hears sounds like an explosion or truck idling. No damages have been reported.	Earthquake, Earth	Allenstown Hazard Mitigation Committee, Earthquake rack.com, CNHRPC, concordmonitor.com, earthquake.usgs.gov, Hopkinton Dam USACE
Severe Storm and Flooding Mar 2018	4370	2018	Mar 2 - 8	N/A for Allenstown	Within the Central NH Region, it is likely communities experienced local flooding conditions, with wind blowing trees	Allenstown could not apply for or receive PA funding. The Town likely experienced early spring	River, Wind, Storms, Debris, Flood, Utility,	Allenstown Hazard Mitigation Committee, CNHRPC, NH HSEM

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					down, causing short power outages. <u>Not a declared disaster in Merrimack or Hillsborough Counties</u>	rains that flooded culverts and caused a few washouts.	Aging Infrastructure	
Regional Flooding, Ice Storms, Snow Melts and Ice Jams Jan 2018	No	2018	Jan 13-23	N/A	During the month of January 2018 with several snowfall and melt periods, the region experienced high snow totals, flooding, and temperature fluctuations. Ice jams were common along the Contoocook and Warner Rivers.	Allenstown may have similarly experienced small ice jams on the Suncook River, higher than normal snowfall, and resultant flooding. There were likely power outages and likely accidents. Some roads may have flooded more completely than a washout as a result of this weather event, but overall this period was not notable to the Town.	River, Flood, Extreme Temp, Winter, Debris, Ice Jam	Allenstown Hazard Mitigation Committee, CNHRPC, nhpr.org
Allenstown Public Health Norovirus 2018	No	2018	---	N/A	Regional effects were experienced at Concord Hospital.	Norovirus struck Allenstown emergency services. The FD obtained the virus from the patient (0) they responded to. After brought to Concord Hospital, virus spread there to other patients and staff. FD personnel 6-8 of Allentown & Tri-Town impacted. FD reported 18 hrs after contact, personnel was struck by virus immediately.	Public Health	Allenstown Hazard Mitigation Committee, CNHRPC
Regional CAFMAC Radio Communications Disruptions by Solar Storms 2018-2020	No	2018	2020	N/A	The Town is a member of the Capital Area Fire Mutual Aid Compact (CAFMAC) of about 23 member communities in 4 counties. Mutual aid is provided and received as needed.	Allenstown reported 2018-2020 geomagnetic storms affected radio transmissions. Reception has been better since CAFMAC transferred to the SimulCast system and has undergone upgrades. In June 2018, a minor G1 geomagnetic storm contributed to ending the Northeast drought. In late August (26-27) 2018, the aurora borealis was visible across the planet, including in NH at high elevations. This event was classified as a strong G3 geomagnetic storm.	Solar Storms, Communications Interruption, Utility	Allenstown Hazard Mitigation Committee, CNHRPC, visibleearth.nasa.gov

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						In May (16-17) 2020, a G2 moderate geomagnetic storm with aurora borealis was forecast for New Hampshire. From Aug 31- Sep 1 2020, a G2 storm was observed again impacting NH with a positive polarity coronal hole high speed stream influence with solar wind speeds of >800km/s.		
Severe Wind Storm and Flood Oct 2017	4355	2017	Oct 28-30	\$0	Merrimack and Hillsborough Counties experienced downed trees on powerlines, debris to clean up, and some flooding of drainage catch basins and culverts. The storm impacted northern NH, with 6 counties declared disasters. Power was out for an estimated 270,000 customers.	Allenstown did not apply for or receive FEMA Public Assistance funding for roads & bridges, debris removal, or protective measures. Instead, they handled the storm effects within their Dept budgets. Bear View Crossing reported a downed tall white pine which bisected a house (2020 HMP cover photo). During the wind event, several sheds were destroyed. No injuries were reported.	Wind, Storms, Debris, Tropical, Utility, Aging Infrastructure	Allenstown Hazard Mitigation Committee, Bear View Crossing, CNHRPC
Severe Storms and Flooding Jul 2017	4329	2017	Jul 1-2	N/A for Allenstown	The entire State, North Country and Central NH region experienced severe storms with rain, wind, lightning, thunder and flooding. Not a declared disaster in Merrimack or Hillsborough counties.	Allenstown could not apply for or receive federal PA funds. The Town likely conducted debris clean up along roads but noted the storm was not out of the ordinary.	River, Wind, Storms, Flood, Lightning, Debris	Allenstown Hazard Mitigation Committee, FEMA CNHRPC, WMUR, NOAA
NH Geomagnetic Storm May 2017	No	2017	May	N/A	The aurora borealis (geomagnetic storm) likely reached all of NH although only those with equipment to capture the image likely knew it was occurring. In Warner, the Northern Lights were photographed overlooking Mount Kearsarge. No known effects from the storm.	Allenstown was likely subject to any potential geomagnetism or solar radiation. Radio communications (Capital Area Mutual Aid Fire Compact and local) interference could have occurred.	Solar Storms, Geomagnetic, Potential Communications failure	Warner Hazard Mitigation Committee, CNHRPC
April Fool's Snowstorm Apr 2017	No	2017	Apr 1-2	N/A	A spring snowstorm impacted New England, with 50,000 without power in NH alone and 180,000 in the NE.	Allenstown may have received heavy snowfall, ice jams, power failures and road washouts because of trees down	Winter, Extreme Temp Changes, Snow,	Allenstown Hazard Mitigation Committee, Hopkinton

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					Massachusetts was buried in nearly 2 feet of snow. The Central NH Region experienced more snowfall than the rest of the state, with Henniker at 15", Deering and Concord at 13", and Pembroke at 12".	on roadways, and rapid melting the following the day with warmer temperatures. Yet the storm was not notable to the Town.	Utility, Debris, Storms, Rain, Flood, Inundation	Dam USACE, wmur.com, CNHRPC, USA Today
Severe Snowstorm-Town Meeting Blizzard Mar 2017	4316	2017	Mar 14-15	N/A for Allenstown	Many other NH towns had to choose whether to close or not to accommodate the blizzard, which became a legal issue to sort out. Not a declared disaster in Merrimack or Hillsborough counties.	Allenstown could not apply for or receive federal PA funds. A state-wide blizzard occurred during Town Meeting, (Election Day Storm).	Winter, Extreme Temp, Snow, Crash	Allenstown Hazard Mitigation Committee, CNHRPC,
Webster Epicenter Earthquake 1.9M (Mercalli III) Feb 2017	No	2017	Feb 27	N/A	Residents of Contoocook, Webster and Warner in Central NH communities also felt this earthquake. Since it occurred overnight, there were fewer reports. The USGS reported its epicenter north of the Blackwater River in the hilly area between Battle Street and Clothspin Bridge Road at a depth of 8.9km.	The USACE registered this earthquake on their Hopkinton Dam monitoring equipment. No damages reported in Allenstown.	Earthquake, Earth	Allenstown Hazard Mitigation Committee, Earthquaketrack.com, CNHRPC, earthquake.usgs.gov, Hopkinton Dam USACE
Central NH Region and Allenstown Excessive Heat 2016-2017	No	2016	-2017	N/A	NH and the Central NH region experienced high heat records throughout 2016 and 2017.	In Allenstown, dug wells likely went dry but the Fire Department was not specifically requested to make water provision. The Community Center and Library were available for cooling.	Extreme Temp, Excessive Heat, Public Health	Allenstown Hazard Mitigation Committee, CNHRPC
Salisbury Epicenter Triple Earthquakes 1.8M/1.6M/1.3M Oct 2016	No	2016	Oct 31	N/A	Epicenters of three quakes in Salisbury occurred a few minutes apart, one 1.8M with a depth of 6.1 km, one with 1.6M with a 5.0km depth, and one with 1.3M with 5.0km depth. Three separate epicenters were located, the 2 first quakes south of West Salisbury Road and the last 1 north of the Blackwater River at Bay Road.	Allenstown likely felt some rattling from these small earthquakes, with its epicenters only about 20 miles from Town. No damage or injuries reported in Town.	Earth, Earthquake	Allenstown Hazard Mitigation Committee, Earthquaketrack.com, CNHRPC, earthquake.usgs.gov

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
NH Severe Wind Rain & Thunder Storm Jul 2016	No	2016	Jul 23	N/A	The entire region and the State experienced a severe storms with rain, wind, lightning and thunder. A possible microburst was reported. As many as 72,000 customers lost electricity. A similar storm earlier in the week brought several confirmed microbursts and also downed trees.	Allenstown likely experienced many of these conditions on their gravel roads. Washouts would have resulted along with downed trees and power lines.	Flood, Debris Impacted Infrastructure, Wind, Lightning, Rains, Utility, Power Outage, Washout	Allenstown Hazard Mitigation Committee Concord Patch, CNHRPC, WMUR, NOAA
Warner Epicenter Earthquake 2.8M (Mercalli IV) Mar 2016	No	2017	Mar 21	N/A	Epicenter in Warner on Schoodac Brook just south of I-89, with 2.8 magnitude at a depth of 7.3km. 124 citizen reports made to USGS. Felt in the Central NH Region and most of Merrimack County, light in Hillsborough County. Felt most strongly in Hopkinton, Allenstown, Warner, Webster, Salisbury, Franklin, Bradford, Concord, and Hillsborough. This quake was believed to have snapped one of the underground water lines in the Town of Warner, and people exited buildings onto Main Street wondering what happened.	With the epicenter in to northwest of Allenstown, residents may have felt this large daytime quake or heard rattles. Rumbles or booms may have been heard and buildings may have rocked. No damage or injuries reported in Town.	Earth, Earthquake	Allenstown Hazard Mitigation Committee, Earthquake rack.com, CNHRPC, earthquake.usgs.gov
Allenstown Opioid Epidemic Public Health 2016-2020	No	2016	-2018	N/A	The State experienced effects of the national "opioid crisis"	2016-2018 to 2020-Town has had a heroin problem for a long time, began around 2016-2018. In the first 2 years, FD administered Narcan every 6 weeks for overdoses. Jan 2018-23 overdose calls that month alone. FD and Tri Town Ambulance were overwhelmed. Fire Dept is only staffed Mon-Fri during business hours, otherwise they have on-call personnel which take longer to arrive on scene. Addiction over stresses abilities of the first responders. IN early 2020, an overdose fatality occurred. Over time Narcan	Public Health	Allenstown Hazard Mitigation Committee, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						administrations have decreased, to only 6 doses in 2019.		
Tornado, Severe Thunderstorms Jul 2015	No	2015	Jul 31	N/A	In Warner, NWS confirmed an EF-0 tornado touched down in the evening. It had a maximum wind speed of 75 mph and was 100 yards wide. Town officials said the tornado ripped the roof off a barn, but there were no injuries reported.	The Town seemed to have escaped the brunt of this tornado, although heavy winds could have toppled trees and powerlines. No significant damages were reported.	Wind, Tornado, Debris, Utility	Allenstown Hazard Mitigation Committee, WMUR, CNHRPC
NH Geomagnetic Storm June 2015	No	2015	Jun	N/A	The aurora borealis (geomagnetic storm) likely reached all of NH although only those with equipment to capture the image likely knew it was occurring. In Warner, the Northern Lights were photographed overlooking Mount Kearsarge. No known effects from the storm.	Allenstown was likely subject to any potential geomagnetism or solar radiation. Radio communications (CAMAFC or local) interference could have occurred.	Solar Storms, Geomagnetic, Potential Communications failure	Allenstown & Warner Hazard Mitigation Committees, CNHRPC
Boscawen Epicenter Earthquake 2.3M (Mercalli III) May 2015	No	2015	May 24	N/A	Epicenter in lower Boscawen on Queen Street north of Flaghole Pond with 2.3M at a depth of 5km. 61 citizen reports were made at the USGS.	Boscawen ins 15 miles from Allenstown. No damage or injuries reported in Town. The USACE registered this earthquake on their Hopkinton Dam monitoring equipment.	Earth, Earthquake	Allenstown Hazard Mitigation Committee Earthquake rack.com, CNHRPC, earthquake.usgs.gov, Hopkinton Dam USACE
Contoocook Epicenter Earthquake 2.1M Apr 2015	No	2015	Apr 25	N/A	The US Geological Survey recorded the 2.1 magnitude tremor near Contoocook just before 6 AM. It was the second small earthquake in NH in as many days. A 2.3 magnitude earthquake was recorded near Sanbornton early Wednesday morning.	Allenstown residents may have felt a slight shaking or noise outside. The USACE registered this earthquake on their Hopkinton Dam monitoring equipment	Earth, Earthquake	CNHRPC, nhpr.org, Hopkinton Dam USACE
Severe Winter Storm and Snowstorm - January Blizzard 2015	4209	2015	Jan 26-28	N/A for Allenstown	Predicted at near blizzard conditions, the end of January, 2015 snowstorm's major declaration ended up having a Hillsborough County wide per capita impact of \$3.88, making	Allenstown could not apply for or receive PA funding. Snow approached 30" in some areas with heavy snow and 50 mph whiteout wind conditions. To the west of Allenstown, the	Winter, Extreme Temp, Utility, Winds, Debris	Allenstown Hazard Mitigation Committee, fema.gov, Boston Globe

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					the storm a fairly expensive one at \$3.3 million dollars in Public Assistance over three southern NH counties. Snow approached 30" in some areas with heavy snow and 50 mph whiteout wind conditions. The closest reporting weather station, Concord Airport (CON), had accumulated 29" of heavy snow, 50 mph whiteout wind conditions in the region. <u>Not declared in Merrimack County.</u>	closest reporting weather station, Concord Airport (CON), had accumulated 29". Allenstown enacted its snow procedure, which includes a staging area off Deerfield Road for debris removal and plowing since these outlying areas in Bear Brook State Park quickly become cut off from the main Town.		
Town/Merrimack County Drought Severe Emergency 2015-2018	No	2015	-2018	N/A	Severe Drought (D2), Moderate Drought (D1) and Abnormally Dry (D0) intensities were found in communities of Merrimack County and Hillsborough in 2016. The State's counties had been experiencing levels of drought for over a year. The NH DES issued a series of statements and tips for homeowner water conservation. Residents and municipalities had been requested to voluntarily conserve water. Some communities or water precincts enacted water restrictions or bans for certain water usage.	The Severe Drought (D2) conditions caused some problems in Allenstown, including lower Suncook River levels, water restrictions in the Water Works area, and dry-up of smaller brooks.	Drought, Extreme Temp, Increased Wildfire Risk	Allenstown Hazard Mitigation Committee, US Drought Monitor NH, NH DES, CNHRPC
Regional Lyme Disease Epidemic 2015 - 2018	No	2015	2018	N/A	Likely experienced by other Central NH region communities during the same time period.	Central NH region residents are known to have been subjected to and tested for Lyme Disease; many are positive. Spring is particularly bad. Allenstown contains many rural, forested developments and the Bear Brook State Park which is used for outdoor recreation. While Lyme Disease is not known to be a local problem, most users of the BBSP are out-of-state.	Public Health (Epidemic), Tick-borne	CNHRPC, NH Dept of Environmental Services, Greater Sullivan County Public Health Network

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
Allenstown Lightning Strike and Wildfire Circa 2015	No	2015	Circa	N/A	N/A, although mutual aid response may have occurred.	A transformer was struck by lightning on River Road and a fire started. FD had to put fire out. Residents had no power, but only the transformer was damaged.	Lightning, Fire, Wildfire	Allenstown Hazard Mitigation Committee, CNHRPC
Allenstown Cyber Attacks and Cyber Fraud Circa 2015	No	2015	Circa	N/A	Similar incidents in the surrounding Central NH region towns are likely to have occurred.	Reports on internet fraud happens regularly THE FTC reports back to the Town of Allenstown the electronically data any identify fraud, credit card fraud, counterfeiting (3-4 per year which have been prosecuted) bank fraud, telecommunications fraud (calls from Russia, Nigeria) wire fraud, back to the Town for investigation.	Cyber, Human	Allenstown Hazard Mitigation Committee, CNHRPC
Regional Thanksgiving Day Snowstorm Nov 2014	No	2014	Nov 27	N/A	Large amount of snowfall fell in a very short period of time ahead of typical seasonal expectations. Power outages were prolific, with a peak of about 200,000 outages, from the Public Service of New Hampshire, Unitil (Concord area), and NH Electric Co-op. Nearby Concord and the towns on the eastern side of the Central NH region accumulated only 6-12" of snow according to PSNH, far less snow than southern and western NH. This was not a presidentially declared disaster in NH.	Allenstown enacted its snow procedure, which includes a staging area off Deerfield Road for debris removal and plowing since these outlying areas in Bear Brook State Park quickly become cut off from the main Town. Downtown was also impacted. For instance, a tree fell on a truck on Granite Street from wind/snow/ice during this large snowstorm.	Extreme Temp, Winter, Utility, Wind, Ice, Debris Impacted Infrastructure	Allenstown Hazard Mitigation Committee, Concord Monitor, CNHRPC, Eversource Thanksgiving Nor'easter 2015, PUC After Action Report
Allenstown Rockslide Apr 2014	No	2014	Apr 12	N/A	N/A	A localized rockslide occurred at Plourde Sand and Gravel due to an illegal trespass. A fatality occurred as a result.	Earth, Landslide, Human	Allenstown Hazard Mitigation Committee, CNHRPC
Warner Epicenter Earthquake 2.6M (Mercalli IV) Oct 2013	No	2013	Oct 11	N/A	Epicenter in Warner along Warner River, north of Davisville Exit 7, 2.6 magnitude at a depth of 4.0km. Felt in the Central NH Region/northern Merrimack County, most strongly	Allenstown residents may have heard a sonic boom or felt mild shaking. No injuries or damages reported.	Earthquake, Earth	Allenstown Hazard Mitigation Committee, CNHRPC, earthquake.usgs.gov

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					in Hopkinton, Allenstown, Bradford, Warner, Concord, Salisbury, Franklin. 124 citizen reports made to the USGS.			
NH Severe Storms, Flooding and Landslide Jun-Jul 2013	4139	2013	Jun 26 – Jul 3	N/A for Allenstown	This declared disaster for Grafton, Sullivan and Cheshire Counties included landslides from the heavy rain. Public Assistance (PA) was available for these 3 Counties and Hazard Mitigation Assistance (HMA) became available statewide. Damage per capita was high – Grafton (\$39.58), Sullivan (\$24.48), and Cheshire (\$21.46). <u>Not declared in Merrimack or Hillsborough Counties.</u>	Allenstown could not apply for or receive PA funding. Allenstown likely experienced heavy rains, road washouts during this event.	Landslide, Storms, Flood, Wind	FEMA, CNHRPC, Allenstown Hazard Mitigation Committee
Allenstown Cyber Attacks Jun 2013	No	2013	Jun	N/A	N/A	Five attacks in 2013 to date to the Town servers have been recorded, one of which did significant damage. The Town Hall computer system servers were affected, and some computers required hard drives reformatting in mid-May 2013. No leads were found. A number of additional cyberattacks in 2013 attempted to infiltrate the Police Department system, but none had been successful.	Cyber, Sabotage	Allenstown Hazard Mitigation Committee, CNHRPC
Regional and Allenstown Communications Failure Apr 2013	No	2013	Apr 15	No	The bombing incident occurred in Boston during the Boston Marathon. Its effects were felt throughout New England and the country.	On Apr 15 after the Boston Marathon bombing, some Allenstown callers could not communicate because the lines and towers were overwhelmed. No local carriers were operational.	Terrorism/ Violence, Communications Failure	Regional Hazard Mitigation Committees, CNHRPC
Severe Winter Storm and Snowstorm - Winter Storm Feb 2013	4105	2013	Feb 8-10	\$12,768	Winter Storm FEMA-3360-DR had blizzard conditions with wind gust of 50-60 MPH and over 20 inches snow fell on much of New Hampshire and the New England area. Disaster	Allenstown applied for and received \$12,768 in FEMA Public Assistance funding for snow removal. Allenstown experienced only minor damages	Winter, Extreme Temp, Wind	FEMA, Allenstown Hazard Mitigation Committee, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					declarations received for emergency protective measures in eight counties of the State.	from this snow storm. Sporadic power outages were experienced. The EOC was not activated. Only the Police and Fire Departments were on emergency footing. The Highway Department operated normally to remove the snow accumulation. The Town received Public Assistance (PA) grant funds.		
Hurricane Sandy Oct 2012	4095 EM-3360	2012	Oct 26-Nov 8	\$3,130	Merrimack County and Hillsborough County received a disaster declaration for Emergency Protective Measures. Five counties experienced severe damage from heavy winds and moderate flooding, 218,000 customers without power. Fallen trees and debris closed roads, building and vehicle damage.	Allenstown received \$3,130 in FEMA Public Assistance funding for protective measures. Minor damage to power lines occurred from Tropical Storm Sandy in October 2012 because of trees down and high winds. Infrastructure damage to traffic signals was experienced at the Main Street and Ferry Street intersections. The EOC was not activated. Overall, Allenstown was not greatly impacted.	Tropical, Wind, Flood, Debris, Utility, Communications Failure	Allenstown Hazard Mitigation Committee, FEMA, Nashua Telegraph, CNHRPC
Earthquake 4.0M Hollis ME Epicenter Oct 2012	No	2012	16-Oct	N/A	With the epicenter near Hollis Center, Maine, a 4.0 earthquake was measured and felt not only in Central NH, but throughout New England. Reportedly sounding like a jumbo jet and lasting for 10 seconds, calls came in to local Fire Departments inquiring about the event. By two hours later, no calls reporting damages or injuries had been received.	Reports may have been made to the USGS from Allenstown with an earthquake of this magnitude as it was felt around the Central NH Region. This earthquake may have been lightly felt in Allenstown.	Earthquake, Earth	Concord Monitor, Earthquake-track.com, CNHRPC, Allenstown Hazard Mitigation Committee
NH Severe Storm and Flooding May 2012	4065	2012	May 29-31	N/A for Allenstown	This declared disaster for Cheshire County. Public Assistance (PA) was available and Hazard Mitigation Assistance (HMA) became available statewide. Damage per capita was high – Cheshire (\$26.04). <u>Not declared in Merrimack</u>	Allenstown could not apply for or receive PA funding. There were no specific issues in Town noted. Any flooding, tree fall or other problems were handled as normal Dept response.	Flood, Storms, Wind	FEMA, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					or Hillsborough Counties.			
Allenstown Incendiary Device Situation Feb 2012	No	2012	Feb	Circa	Bomb threats and bomb situations were common in the Central NH region during this period. Allenstown is a member of the Capital Area Mutual Aid System for emergency dispatch services.	Six chemical bombs (made with common household chemicals) were found at a local NH DOT shed, and others at houses. No damage of consequence occurred.	Terrorism, Human, Incendiary	Allenstown Hazard Mitigation Committee, CNHRPC
Halloween Snow Storm Oct 2011	4049	2011	Oct 29-30	N/A for Allenstown	FEMA-4049-DR. Towns in Central NH were impacted by this shocking, early severe snowstorm, although a major disaster declaration was <u>not declared in Merrimack County</u> . Halloween festivities were cancelled in most communities, to the heartbreak of young children. In Hillsborough County, damages were at the equivalent of \$5.11 per capita (400,721 people in 2010). The storm was also declared in Rockingham County.	Allenstown could not apply for or receive FEMA Public Assistance funding. Allenstown was covered in nearly two feet of snow, which was removed from the roads and Town parking areas by the Highway Department. The EOC was not activated. The emergency shelter was opened, but no one used it. The Town received Public Assistance (PA) grant funds as a result of the unexpected snow event.	Winter, Extreme Temp	FEMA, Allenstown Hazard Mitigation Committee, CNHRPC
Tropical Storm-Irene Aug-Sep 2011	4026	2011	Aug 26-Sep 6	\$4,011	Carroll, Coos, Grafton, and Merrimack Counties suffered severe impacts to roads and bridges as a result of flooding from Tropical Storm Irene, which also caused power outages. Merrimack County reimbursement to towns was \$4.29 per capita (146,455 people in 2010), a total of \$11m was allocated. Disaster was not declared for Hillsborough County.	Allenstown received \$4,011 in FEMA Public Assistance funding for emergency protective measures and debris removal. Emergency responders and all Departments prepared for Tropical Storm Irene to hit Allenstown in August 2011. The EOC was activated, and all Departments were on emergency footing. However, the storm did minimal damage. Road closures occurred for a maximum of 15-20 minutes. Trees fell on multiple homes, many of which were destroyed as a result, but the expected rain and flooding did not occur. The Town and its residents received Public Assistance (PA)	Tropical Wind, Flood, Debris, Utility, Power Failure, Debris Impacted Infrastructure	FEMA, Allenstown Hazard Mitigation Committee, CNHRPC, NH State Climate Office 8/11 Summary

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						grant funds and Individual Assistance (IA) grant funds as a result of the Tropical Storm Irene.		
April Fool's Snowstorm Apr 2011	No	2011	Apr 1	N/A	A Nor'easter snowstorm impacted the State, causing over 30,000 power outages, most by PSNH. Snow fell in depths of up to 8" but stopped by noon. Although dozens of accidents were reported, no serious injuries were reported.	The snowstorm with heavy, wet snow likely brought down trees and powerlines in Town. Storm was not especially notable.	Extreme Temp, Snow, Wind Chill, Power Failure, Debris Impacted Infrastructure	Allenstown Hazard Mitigation Committee, wmur.com, CNHRPC, cbsnews
Concord Hospital Bomb Threat Oct 2010	No	2010	Oct	Circa	A bomb threat was called in to Concord Hospital as a result of a child custody issue and the group known as the "Oathkeepers." The FBI was contacted, but nothing was found in the Hospital during a bomb sweep. Phone lines were flooded with calls by the Oathkeepers to inhibit using the landlines. The incident was determined to be harassment instead of an actual event.	N/A to Allenstown although the response was likely regional. Any impacts to the hospital would have been felt regionally as the Hospital serves much of the State and Allenstown is a member of the Capital Area Mutual Aid System for emergency dispatch services.	Terrorism	Concord Hazard Mitigation Committee, CNHRPC
Canterbury Earthquake Epicenter 3.2M (Mercalli V) Sep 2010	No	2010	Sep 26	N/A	"A magnitude 3.4 [sic] earthquake rattled buildings and nerves across much of New Hampshire Saturday night. The quake occurred at 11:28 p.m. and was centered about 10 miles north of Concord, according to the U.S. Geological Survey. State police said they received reports from residents across the state who reported what they thought was an explosion. The quake was felt in places like Fremont, Derry, Durham, Allenstown, Penacook and Raymond. There were no reports of damage." The quake was in fact felt all over the state, Southern ME and MA,	Epicenter in Canterbury is about 20 miles to the north of Allenstown. Numerous area residents from across the state called WMUR's newsroom to report shaking and tremors in their home. Many said the quake felt like a "low rumbling" that rattled windows and shook homes for several seconds. Several residents also reported hearing a loud "boom" before feeling their homes shake. One emergency dispatcher with the town of Canterbury reported receiving 400 calls in 20 minutes	Earth, Earthquake	Allenstown Hazard Mitigation Committee, Union Leader, CNHRPC, earthquake.usgs.gov, wmur.com

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					but most reports were received from the Central NH region. After study and analysis, USGS reported a 3.2M quake at a depth of 5.0 km and a total of 2,494 citizen reports. The epicenter was in Canterbury just east of I-93 and Cold Brook, north of Soapstone Road and south of Cogswell Road.			
Quebec-Ottawa Earthquake 5.0M (Mercalli VI-VII) Jun 2010	No	2010	Jun 23	N/A	Earthquake lasted about 30 seconds, epicenter in Val-de-Bois Quebec (Ottawa) at a depth of 22 km. The shaking that occurred in Ottawa was rated the strongest in 200 years. Damages occurred in Ottawa. The tremors were felt in Central NH. 288 aftershocks were located.	No known impacts to Allenstown specifically, but this large quake was felt regionwide.	Earthquake, Earth	CNHRPC, Geological Survey of Canada
Canadian Wildfires Air Pollution May 2010	No	2010	May 31	N/A	The smoke from the wildfires was seen and smelled across Central NH. On Memorial Day weekend, brush fires from Canada impacted the air quality of New Hampshire Residents from more than 50 wildfires that are burning out of control in Quebec. Over 150,000 acres in central Quebec, north of Montreal and Quebec City, about 500 miles north of Manchester, reduced visibility to 1.75 miles in Concord. No air quality alert was issued, although people with respiratory issues were urged to remain indoors.	Allenstown likely experienced the effects of this smoke, smog, and fine particulate matter. High elevations would have been most susceptible, as would those who exercised outdoors.	Wildfire, Health (Air Quality)	Union Leader 2010, CNHRPC
Severe Storms and Flooding Mar 2010	1913	2010	Mar 14-31	\$0	Severe storms and flooding occurred over two weeks and damaged roads and bridges. Merrimack County reimbursement to towns for repair was \$0.28 per capita (146,455 people in	Allenstown did not apply for or receive FEMA Public Assistance funding for roads & bridges, debris removal, or protective measures. In March 2010, the Suncook River caused moderate flood damage	Wind, Tropical, Flood, Utility, Debris	Allenstown Hazard Mitigation Committee, FEMA

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					2010) and in Hillsborough County reimbursements were \$1.80 per capita (400,721 people in 2010).	to residences, but was not as extensive as the 2006 and 2007 floods. As a result of these two recent and high impact floods, the Town of Allenstown applied for and was granted a Flood Mitigation Assistance grant for Phase I to acquire 14 homes on Riverside Drive, Albin Drive and Jillerik Road and for Phase II to acquire 3 homes on Riverside Drive.		
Severe Winter Storm and Flooding Feb-March 2010	1892	2010	Feb 23-Mar 3	\$59,662	This severe weather event included high winds, rain, and snow over a week-long period. The primary impact was debris removal and repair reimbursement for fallen trees and powerlines. In Merrimack County, the reimbursement to communities was the equivalent of \$10.39 per capita (146,455 people in 2010), with Hillsborough County at \$3.68 per capita (400,721 people in 2010). In the Concord area, 21,000 Unital customers were out of power at the peak outage period.	Allenstown received \$59,662 in FEMA Public Assistance funding for roads & bridges, debris removal, or protective measures. Allenstown experienced power outages, with trees down on wires, roads, cars, and buildings. The flooding from this storm was worse than the snow and ice damage. Emergency responders activated the EOC. All Departments were on emergency footing. The Town received Public Assistance (PA) grant funds. Large Granite Street trees toppled onto properties and the street.	Extreme Temp, Snow, Wind, Flood, Debris, Aging Infrastructure	Allenstown Hazard Mitigation Committee, FEMA, Unital, CNHRPC
Vermont Yankee Tritium Contamination Jan 2010	No	2010	Jan 7	N/A	The Vermont Yankee Nuclear Power Plant notified the Vermont Department of Health that groundwater monitoring samples taken in November 2009 contained tritium. An investigation was launched, and a major source of leakage was found in steam pipes inside the Advanced Off-Gas (AOG) drain line to be clogged and corroded. The samples taken show the movement of the tritium contamination in the groundwater into	Allenstown may be affected in the future as groundwater sources are connected. The Connecticut River travels the NH / VT border.	Radiological, Health (Water Quality)	Vermont Department of Health 2012, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					the Connecticut River. Health risks are being investigated.			
Severe Winter Storm – Dec 2008 Ice Storm	1812	2008	Dec 11-23	\$23,506	Accumulating ice, snow, rain, and strong winds caused downed trees and power lines, with power outages and traffic accidents resulting. In Merrimack County, debris removal and repair cost reimbursement FEMA the equivalent of \$10.07 per capita (146,455 people in 2010). In Hillsborough County, debris removal costs were \$6.35 per capita (400,721 people in 2010). The major disaster was declared in all 10 counties. New England was blanketed with ice and snow during the winter storm. Weight of ice caused branches to snap, and trees to either snap or uproot, bringing down power lines and poles across the region. About 400,000 utility customers lost power during the event, with some customers without power for two weeks. Property damage across northern, central and southeastern NH was estimated at over \$5m. Event was the largest power outage in NH history.	Allenstown received \$23,506 in FEMA Public Assistance funding for debris removal, public buildings, and protective measures. The Ice Storm of December 11-12, 2008 caused significant power outages in Allenstown. Residents were temporarily sheltering in Concord hotels. The EOC was prepared to activate, but power came back on for essential services and the Village area. It took about 7 days before power was completely restored to the Town. Fallen branches along multiple streets or onto powerlines or homes are reported in addition to reports of utility poles on fire and requests for welfare checks. From the After Action Report (AAR), on Wednesday, December 10, Allenstown Emergency officials started to receive the first indications of a potential snow/ice event that would eventual have a significant impact on the Town of Allenstown. The snow/ice event that followed resulted in the loss of electricity to 20% of the population or approximately 1,000 residents. Electric power was out of service for a lengthy period of time and was not restored completely until the following Tuesday, December 16. There were several road closures due to power lines and trees in the roadway.	Winter, Extreme Temps, Cold, Wind, Utility, Debris, Communications Failure	Allenstown Hazard Mitigation Committee, Bear View Crossing, FEMA, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						<p>Several residents utilized the regional shelter established by the Red Cross on Green Street in Concord. However the majority of residents either spent their time in hotels, with relatives or had generators to power their residents. A fair number of residents needed water which they were able to obtain at either the Police or Fire Stations. The Police Station was established as a warming center that several residents used.</p> <p>During this event the Board of Selectmen declared a State of Emergency. Although the EOC was not activated several ESFs were operational while others were at a heightened state of readiness. The Fire Department responded to 25 calls for service consisting of arcing wires, wires down, alarm activations and CO2 issues. The Police Department responded to 100 calls for service during the event.</p> <p>The ice storm destroyed 3 homes on Mark Drive at Bear View Crossing Drive.</p>		
Severe Storms and Flooding (Hurricane Hannah) – Sep Flood 2008	1799	2008	Sep 6-7	\$4,568	Heavy rain from the remnants of tropical storm Hanna resulted in flooding on small rivers and streams in the Central NH area. The remains of tropical storm Hanna moved through eastern New England dumping 3 to 6 inches of rain in New Hampshire in about 8 hours causing rapid rises on area streams. In Merrimack County, damage to road systems totaled the equivalent of \$1.48 per	<p>Allenstown received \$4,568 in FEMA Public Assistance funding for roads and bridges.</p> <p>Allenstown sustained damage to culverts ditches and roads, resulting in road closures. No specific recollections of this event were available.</p>	Tropical, Flood, River, Wind, Storms, Debris, Aging Infrastructure	FEMA, Allenstown Hazard Mitigation Committee, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					capita (146,455 people in 2010) for town reimbursement. Hillsborough County's damage was much higher at \$6.90 per capita (400,721 people in 2010)			
Severe Winds, Heavy Rains & Tornado July 2008	1782	2008	Jul 24	\$0	An EF3 tornado touched down in Rockingham County then proceeded into another county. Then in Merrimack County, the tornado was rated up to an F-3 and killed a woman in Deerfield trapped in a collapsed house. In the county, there was substantial damage totaled the equivalent of \$1.12 per capita (146,455 people in 2010) for the towns' debris removal reimbursement costs. A total of 123 residences statewide were affected, with 17 destroyed and another 37 suffering major damage. Damage was estimated to exceed \$10 million. Hillsborough County	Allenstown did not apply for or receive FEMA Public Assistance funding for debris removal, protective measures, roads and bridges. Fortunately, the July 2008 tornado that ravaged adjacent Epsom, Northwood, and other nearby communities spared Allenstown. Emergency responders responded to Epsom's call for assistance during the response phase. The Highway Department assisted the Town for clean-up duties during the recovery phase.	Wind, Tornado, Downburst, Storm, Debris, Power Outage	FEMA, Allenstown Hazard Mitigation Committee, CNHRPC
Allenstown Wind and Rain Storms August 2007	No	2007	Aug 17-25	N/A	Similar storms were likely experienced in the Central NH region	A severe thunderstorm downed trees in Allenstown. Numerous severe thunderstorms began developing statewide during the late afternoon of August 17th and continued through the evening hours. Wind damage was widespread with these storms along with a few reports of large hail.	Storms, Lightning, Winds, Utility, Fire, Debris, Hail	Allenstown Hazard Mitigation Committee, CNHRPC
Allenstown Structure Fire Summer 2007	No	2007	Summer	N/A	Mutual aid response may have assisted with the fire.	Riverside Apartments at 98 Main St (once an old Mill building, now residential) housed arson activities. Carpet burns were found in the hallway, and minor building damage was experienced.	Fire, Arson, Human	Allenstown Hazard Mitigation Committee, CNHRPC
Severe Storms and Flooding -	1695	2007	Apr 15-23	\$48,139	Extensive flooding caused by severe	Allenstown received \$48,139 in FEMA Public	Flood, River,	FEMA, USGS Flood of

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
Spring Flood April 2007					<p>storms impacted seven counties. In the Central NH region, Indirect peak discharge measurements on stream gages on the Suncook River at Short Falls Road in Epsom were 14,100 ft³, which was determined to be greater than 100-year flood discharge levels. The heavy rain combined with snow melt to cause small rivers and streams in much of New Hampshire to flood. Over land, the strong winds downed numerous trees. The downed trees caused widespread power outages, especially near the coast, and numerous road closures. The storm also brought heavy rain to the region which, when combined with snow melt, produced widespread flooding across much of the region.</p> <p>To the north, Epsom sustained flooding damage to the following areas: in the area of Towle Pasture and Black Hall Roads was flooded, Route 107 was closed, Echo Valley Farm Road, River Road, New Orchard and Locke Hill Road, Range Road, Short Falls Road, Mill House Road, Jug City Road, Drolet Road, Sleepy Hollow Lane, Kingstowne Mobile Home Park, Webster Park, Route 28 by the Police Department and Rt 107. Epsom's water pump house, Center Hill Road, Rt 107 and Echo Valley Hill Road sustained damage.</p>	<p>Assistance funding for roads & bridges and protective measures. The results of this spring 2007 flood were more damaging than the 2006 flood. Emergency responders activated the EOC in April 2007. Mandatory evacuations were executed in vulnerable areas of Town. The Town and its residents received significant Public Assistance (PA) grant funds and Individual Assistance (IA) grant funds.</p> <p>From the After Action Report (AAR), the Allenstown Board of Selectmen declared a state of emergency for the Town of Allenstown at 11:30hrs on April 17. The Allenstown Emergency Operations Center (AEOC) was activated at the same time.</p> <p>This flood resulted in a higher water level causing significant damage throughout the town. A total of 101 residences were evacuated during the flood. Mandatory evacuations were ordered for 61 residences with another 40 voluntary evacuations. The number of condemned homes was 14. A total of 61 homes sustained damage. These residences were located on Riverside Drive, Jill-Erik Road, Albin Avenue, Clement Road, Bourque Road, and Jasper Drive. A residence on Hillside Drive sustained major structural damage from a tree that fell on the mobile home causing it to partially collapse. The AEOC was finally closed on April 21, 2007.</p>	Wind, Storms, Tropical, Debris, Erosion, Aging Infrastructure	2007, Allenstown Hazard Mitigation Committee, CNHRPC, National Oceanic and Atmospheric Administration, 2007, Epsom Hazard Mitigation Committee 2009, USGS Flood of April 2007 in New Hampshire

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					Indirect peak discharge measurements on stream gages on the Suncook River at Short Falls Road were 14,100 ft ³ , which was determined to be greater than 100-year flood discharge levels.	The following roadways were closed as a result of flooding: Route 28, Mount Delight Road, Jill-Erik Road, Riverside Drive, part of Albin Avenue, and Jasper Drive. Roadway damaged occurred on River Road, Deerfield Road, Mount Delight Road, Jill-Erik Road, Riverside Drive, and Granite Street near the Highway Department. The Ferry Street Boat Landing sustained damage as well. The area around the boat landing sustained erosion damage.		
Severe Storms and Flooding – Mother’s Day Flood May 2006	1643	2006	May 12-23	\$33,727	Extensive flooding caused by severe storms impacted seven counties including Merrimack and Hillsborough Counties. The USGS recorded the highest flows on record for several rivers including the Contoocook River in Davisville village, Soucook in Concord, and Piscataquog in Goffstown. North in adjacent Epsom, the Suncook River Avulsion occurred at Bear Island and the nearby excavation area. There were nine bridges / culverts washed out as well as dams breached. Epsom sustained flooding damage to the following areas: Northwood Lake Dam overtopped, damage to the Old Mill Dam (until the river changed direction), Kingstowne Mobile Home Park flooded, Webster Park Lane was underwater, Millhouse Road was flooded, Black Hall Road flooded, the Epsom Elementary School athletic fields flooded and the equipment hut	Allenstown received \$33,727 in FEMA Public Assistance funding for roads and bridges, recreational areas, and protective measures, for structures including culverts, ditches and roads (washouts). Emergency responders activated the EOC during the Mother’s Day Flood in May 2006. Mandatory evacuations were executed in vulnerable areas of Town. All Departments were on emergency footing. The Town and its residents received significant Public Assistance (PA) grant funds and Individual Assistance (IA) grant funds.	Flood, River, Wind, Tropical, Storms, Debris, Erosion, Landslide, Aging Infrastructure	Allenstown Hazard Mitigation Committee, FEMA, USGS, CNHRPC, Epsom Hazard Mitigation Committee 2009

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					was lost due to flooding, Center Hill Bridge washed out, Baker Road flooded, Swamp Road was under water. Damage, overtop & erosion to culverts of River Road, North Road, Blakes Brook, Mountain Road, Echo Valley Road, Griffin Road, NH 107, Old Richie Road, Mt Delight, as well as Leighton Brook culvert.			
Severe Storms and Flooding - Columbus Day Flood Oct 2005	1610	2005	Oct 7-18	\$1,685	Extensive flooding caused by severe storms impacted five counties, including Merrimack and Hillsborough. Alstead experienced several fatalities as the result of dam failure. During October 7-18, 2005, the State of NH experienced two major rainfall events. According to USGS the bulk of rainfall occurred during two major rainfall events; one on October 8-9 and one on October 14-16. Rainfall volumes were generally higher in the event of October 8-9 in southwestern NH, leading to major flooding in that region.	Allenstown received \$1,685 in FEMA Public Assistance funding for protective measures. The Columbus Day Flood in October 2005 was not a significant event in Allenstown. The EOC was not activated. The Suncook River reached action state, but no damage was done. The USGS Suncook River Stream Gage in North Chichester does not retain data sooner than 2007.	Flood, River, Wind, Tropical, Storms, Debris, Erosion, Landslide, Aging Infrastructure,	Allenstown Hazard Mitigation Committee, FEMA, CNHRPC
Regional Thunderstorms and Lightning Jun 2005	No	2005	12-Jun	N/A	During a thunderstorm, lightning struck and severely damaged the historic Loudon Town Hall on Clough Hill Road. Winds from severe thunderstorm knocked down trees and power lines down in the towns of Warner, Hopkinton, Concord, Bow, Loudon, and Webster in Merrimack County.	Allenstown likely experienced many lightning strikes, power outages, and heavy downfalls. The lightning would have been especially noticeable from the higher elevations and the Oak Hill Fire Tower in Loudon to the northwest.	Thunderstorm, Lightning, Severe Winds	Allenstown Hazard Mitigation Committee, CNHRPC, Area Hazard Mitigation Committees
Snow Emergency Jan 2005	EM-3207	2005	Jan 22-23	\$0	Record and near record snowstorm for 8 NH counties including Merrimack and Hillsborough. Emergency protective	Allenstown did not apply for or receive FEMA Public Assistance funding for snow removal. Record snows fell during this time period	Winter, Extreme Temp	Allenstown Hazard Mitigation Committee, CNHRPC, FEMA

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					measures declared for reimbursement.	causing many closures. A transportation system shutdown likely occurred in Allenstown, and Town emergency services were delayed.		
Hopkinton Earthquake 2.3M Epicenter Aug 2004	No	2004	Aug 28	N/A	An earthquake measuring 2.3 on the Richter Scale was centered in the Hopkinton area at Hopkinton Lake (Hopkinton-Everett Reservoir) east of Stumpfield Road at a depth of 5.8km Shaking and noise were reported, but no damage occurred.	Reports were likely made to the USGS by local residents feeling the earthquake as a rumble or loud noise.	Earth, Earthquake	Earthquake Monitor, CNHRPC, earthquake.usgs.gov, Allenstown Hazard Mitigation Committee
Henniker-Hopkinton Earthquake 2.2M Epicenter Jan 2004	No	2004	Jan 20	N/A	An earthquake measuring 2.3 on the Richter Scale was centered in the Henniker- Hopkinton town line on Line Hill Road at a depth of 3.6km.	Residents may have felt the earthquake as a rumble or heard a loud noise.	Earth, Earthquake	Concord Monitor, January 2004, Earthquake Monitor, CNHRPC, earthquake.usgs.gov
Snow Emergency Dec 2003	EM-3193	2003	Dec 6-7	\$5,216	Record snow fall event impacting much of New England. In NH, 8 counties received emergency protective measures, including Merrimack and Hillsborough.	Allenstown received \$5,216 in FEMA Public Assistance funding for snow removal. Record snowfalls, residents lost power due to winter snow storm with high winds and falling trees. A transportation system shutdown likely occurred in Allenstown, and Town emergency services were delayed.	Winter, Extreme Temp	Allenstown Hazard Mitigation Committee, CNHRPC, FEMA
Snow Emergency Feb 2003	EM-3177	2003	Feb 17-18	\$5,067	Record and near record snowstorm for 5 NH counties including Merrimack and Hillsborough. Emergency protective measures declared for reimbursement.	Allenstown received \$5,067 in FEMA Public Assistance funding for snow removal. Record or near record snowfalls, residents lost power due to winter snow storm with high winds and falling trees. A transportation system shutdown likely occurred in Allenstown, and Town emergency services were delayed.	Winter, Extreme Temp	Allenstown Hazard Mitigation Committee, CNHRPC, FEMA
NH Drought Emergency Aug 2002	No	2002	Aug	N/A	All counties in the State of NH except Coos County. One of the hottest Augusts on	Allenstown likely experienced loss of hay crops, lowering of the	Drought, Extreme Temp, Earth,	Allenstown Hazard Mitigation Committee,

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					record in Concord along with drought conditions since March made for a high fire danger in New Hampshire. Numerous forest fires were reported, including a 30-acre blaze in New Durham.	Suncook River and other brooks. Allenstown dug wells likely ran dry at areas of high elevation.	Increased Wildfire Risk	CNHRPC Concord Monitor 8/20/02, NHDES
Allenstown Thunderstorms and Lightning May 2002	No	2002	May 31	N/A	Similar storms were likely experienced in the Central NH region	A line of severe thunderstorms moving through New Hampshire produced severe winds that downed trees and power lines throughout the central and southeastern part of the state. About 18,000 customers lost electrical service during the storms. Trees were reported down in Allenstown and many other neighboring towns.	Storms, Lightning, Winds, Utility, Fire, Debris	Allenstown Hazard Mitigation Committee, CNHRPC, Area Hazard Mitigation Committees
Allenstown Structure Fire July 2001	No	2001	Jul 1	N/A	The building on the Suncook River is on the other side of Pembroke which may have helped respond to the fire along with other mutual aid towns.	At the White Rabbit Inn, a fatal arson killed one person and injured several others. Suspects were identified but no prosecutions; however, the suspects were indicted on other charges.	Fire, Arson, Human	Allenstown Hazard Mitigation Committee, CNHRPC
Allenstown Wildfire May 2001	No	2001	May	N/A	It is possible other communities surrounding Allenstown may have assisted with some of the larger fires.	In May 2001, a fire on Wing Road, Allenstown burned a barn, house, and 5 buildings. The fire spread and eventually burnt 10 acres of land.	Lightning, Wildfire	Allenstown Hazard Mitigation Committee 2004, CNHRPC
Snow Emergency Mar 2001	EM-3166	2001	Mar 5-7	\$5,820	Record and near-record snowfall from late winter storm, emergency declaration was issued for protective measures. Merrimack, Hillsborough and 5 other counties declared eligible.	Allenstown received \$5,820 in FEMA Public Assistance funding for protective measures, including snow removal. Likely numerous power outages and blizzard-like conditions were probably experienced in Allenstown.	Winter, Extreme Temp, Wind	Allenstown Hazard Mitigation Committee, CNHRPC, FEMA
Allenstown Civil Disobedience Event 2001	No	2001	---	N/A	A, although mutual aid response may have occurred, such as the NH State Police or local SWAT.	At Holiday Acres sit in when Chester Turnpike new road opening Marilynn Drive. They did not want the entry because it was a dead end street, more traffic	Human, Civil Disobedience	Allenstown Hazard Mitigation Committee, CNHRPC
Allenstown Wildfire Summer 2000	No	2000	Summer	N/A	It is possible other communities surrounding Allenstown	During the summer of 2000, an illegal campfire caused a wildfire to	Lightning, Wildfire	Allenstown Hazard Mitigation

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					may have assisted with some of the larger fires.	burn 25 acres near Gilbert Road		Committee 2004, CNHRPC
Allenstown Chemical Powder Circa 2000	No	2000	Circa	N/A	N/A	White powders were sent to the doctor's office in the Professional Park. The powders were later found to be a hoax.	Hazardous Materials, Radiological, Biological, Human, Public Health	Allenstown Hazard Mitigation Committee, CNHRPC
Regional Downbursts and Severe Winds Jul 1999	No	1999	6-Jul	N/A	Severe storms in July 1999 bring strong damaging winds and 3 downbursts. Two deaths occurred. The roof of the Ralph Pill building in Concord is blown off during a storm. The downburst was designated a macroburst (at least 2.5 miles in diameter). Other communities in the Central NH Region experienced damages	Allenstown likely experienced similar conditions and treefall. No historical perspectives were available for the event.	Severe Wind, Downburst	Concord Monitor, NH HSEM, CNHRPC, Allenstown Hazard Mitigation Committee
Concord Terrorism/ Bomb Threats Oct 1998	No	1998	Oct, Oct 27	N/A	On Oct 27, the lit fuse of a bomb left in the Concord Library stacks set off smoke alarms that may have saved the lives of many people. The individual allegedly responsible for the bomb scare left notes complaining about state government. A few days later, about a dozen buildings were evacuated after the New Hampshire Technical Institute in Concord received an anonymous call warning that three bombs had been placed on campus. This event followed the bomb scares at the Concord Library.	N/A, although Concord is the nearby employment and shopping hub of the Central NH Region. Should any terrorism event have impacted Concord, Allenstown residents would have been impacted.	Terrorism	AP Online, 11/01/98, NH HSEM, CNHRPC
Allenstown Lightning Strike August 1998	No	1998	Aug	N/A	N/A, although mutual aid response may have occurred.	Lightning struck the antenna on the roof of the Allenstown Town Hall, started a fire, and shorted out several computers inside. In addition, the fire station at the time (since then a new station has been built) was hit by	Lightning, Fire, Wildfire	Allenstown Hazard Mitigation Committee, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						lightning. This lightning strike shorted out computers and the municipal fire system.		
Severe Storms and Flooding Jun-Jul 1998	1231	1998	Jun 12-Jul 2	\$0	Heavy flooding in six counties, including Merrimack and Hillsborough Counties. Damages of \$3.4m for all counties.	Allenstown did not apply for or receive FEMA Public Assistance funding. In Allenstown, washouts are likely to have occurred. In Allenstown, Brookside Trailer Park was flooded.	Flood, Wind, Debris, Aging Infrastructure	FEMA, CNHRPC, Allenstown Hazard Mitigation Committee
Ice Storm of Jan 1998	1199	1998	Jan 7-25	\$0	This ice storm was the first to test our statewide and local emergency management systems and utility providers. Tree and infrastructure damage was extensive and power failures lasted up to two weeks in some parts of the state. In The Central NH Region, many lost power for over a week. This ice storm had severe impacts throughout most of the State, with 52 communities impacted. FEMA Disaster Declaration #1199, Six injuries and one death resulted. Damage totaled \$12,446,202. In addition, there were 20 major road closures, 67,586 people left without electricity, and 2,310 people without phone service.	Allenstown did not apply for or receive FEMA Public Assistance funding. In Allenstown, tree damage, especially in Bear Brook State Park, was particularly severe.	Extreme Temp, Winter, Utility, Debris	FEMA, US Army Corps of Engineers of Engineers NH Storms database, Allenstown Hazard Mitigation Committee, CNHRPC
NH Mass Casualty/Terrorism Aug 1997	No	1997	Aug	N/A	Five people were left dead after a series of shootings which began in Bow by a man who was angered over long simmering land disputes. The individual was eventually apprehended in Colebrook, NH.	N/A for Allenstown specifically, but this tragedy occurred in the Central NH region.	Terrorism, Mass Casualty	NH HSEM, CNHRPC
Severe Storms and Flooding Oct 1996	1144	1996	Oct 20-23	\$0	Heavy rains caused flooding in six counties, including Merrimack and Hillsborough Counties. Damage totaled \$2.3m for all counties.	Allenstown did not apply for or receive FEMA Public Assistance funding. As Allenstown is within Merrimack County, it is	Flood, Storms	FEMA, NH HSEM, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						likely experienced heavy rains and possibly some flooding.		
Storms and Floods Oct-Nov 1995	1077	1995	Oct 20- Nov 15	\$0	Four NH counties were damaged by excessive rain, high winds and flooding, including Merrimack (not Hillsborough).	Allenstown did not apply for or receive FEMA Public Assistance funding. It is likely several gravel roads were washed out in Allenstown.	Flood, Winds, Aging Infrastructure	FEMA, Federal Register, CNHRPC, Allenstown Hazard Mitigation Committee
Allenstown Incendiary Device Situation Late 1990s	No	Late 1990s	Unk	N/A	Bomb threats and bomb situations were common in the Central NH region during this period. Allenstown is a member of the Capital Area Mutual Aid System for emergency dispatch services.	On Main Street, a pipe bomb with gunpowder in a canister exploded. Local Fire and Police Departments were called. Another bomb was sent to a MA mall and the perpetrator convicted of terrorism.	Terrorism, Human, Incendiary, Fire	Allenstown Hazard Mitigation Committee, CNHRPC
Newbury Terrorism/Active Shooter Nov 1993	No	1993	Nov 1	N/A	A shooting at the Newbury Town Hall was ignited by tax and land disputes. Two town workers were killed, another was wounded, and the gunman shot and killed himself.	N/A for Allenstown specifically, but this tragedy occurred nearby. Newbury is two towns north of Allenstown. All NH communities were impacted by this terrible event.	Terrorism/Violence, Mass Casualty, Active Shooter	NH HSEM, CNHRPC
Blizzard Mar 1993	EM-3101	1993	Mar 13-17	\$1,080	Blizzards, High Winds and Record Snowfall. It is likely the Central NH Region experienced heavy snow, tree fall.	Allenstown received \$1,080 in FEMA Public Assistance funding for emergency snow plowing. Allenstown experienced power outages throughout town during this storm.	Winter, Extreme Temp, Wind, Utility	NH HSEM, CNHRPC, FEMA, Allenstown Hazard Mitigation Committee
Severe Storm-Hurricane Bob Aug 1991	917	1991	Aug 18-20	N/A for Allenstown	Public assistance was available for Hillsborough County and 2 other counties (not declared in Merrimack County) as a result of damages caused by Hurricane Bob. The 2 seacoast counties fared the worst.	As Allenstown is within Merrimack County, it likely experienced heavy rains, wind gusts, tree debris, power outages and possibly some flooding.	Severe Winds, Hurricane	FEMA, CNHRPC
Allenstown Snowstorm March 1991	No	1991	Mar 3-6	N/A	It is likely the Central NH region experienced similar conditions.	Numerous outages from ice-laden power lines in southern New Hampshire occurred. Allenstown was hit hard by this storm.	Winter, Extreme Temp, Wind, Ice, Utility	Allenstown Hazard Mitigation Committee, CNHRPC
Allenstown Wildfires Summer Early 1990s	No	Early 1990s	Summer	N/A	It is possible other communities surrounding Allenstown may have assisted with some of the larger fires.	During a dry summer in the early 1990s, 30 acres were burned by wildfire in Bear Brook State Park.	Lightning, Wildfire	Allenstown Hazard Mitigation Committee 2004, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
Flooding and Severe Storm Aug 1990	876	1990	Aug 7-11	No data available	Moderate to heavy rains caused flooding in eight counties, including Merrimack and Hillsborough Counties. Damage totaled \$2.3m for all counties	As Allenstown is within Merrimack County, the Town likely experienced heavy rains, tree debris, power outages and possibly some flooding.	Flood, Severe Winds	FEMA, NH HSEM, CNHRPC
Allenstown Structure Fire 1990s to Early 2000s	No	1990s	Early 2000s	N/A	Mutual aid response may have assisted with the fire.	Five arson fires at China Mill (Hodgson Mill) fabric factory occurred. No arrests were made but, suspects were identified in some of them. See photo in Appendix E	Fire, Arson, Human	Allenstown Hazard Mitigation Committee, CNHRPC
Allenstown Lightning Strike and Fire Circa 1990s	No	1990s	Circa	N/A	N/A, although mutual aid response may have occurred.	A church steeple in Suncook was struck, people had to evacuate. Town Hall was also struck by lightning in the same decade.	Lightning, Fire,	Allenstown Hazard Mitigation Committee, CNHRPC
Severe Storms and Flooding Mar-Apr 1987	789	1987	Mar 30-Apr 11	No data available	Flooding caused by snowmelt and intense rain was felt in seven counties, including Merrimack and Hillsborough Counties. Nearly \$5m in damages.	It is likely the flooding caused by snowmelt and intense rain was experienced in Allenstown. Several roads may have been damaged as a result of the flooding and washout.	Flood, Debris, Extreme Temps	Allenstown Hazard Mitigation Committee, CNHRPC FEMA, NH HSEM, US Army Corps of Engineers
Allenstown Incendiary Device Situation 1987	No	1987	---	N/A	Bomb threats and bomb situations were common in the Central NH region during this period. Allenstown is a member of the Capital Area Mutual Aid System for emergency dispatch services.	The Toll House at Bear Brook State Park was exploded by a bomb. No injuries were sustained as the bombing occurred at night. No one was discovered, but later a pipe bomb resident was prosecuted in the 1990s.	Terrorism, Human, Incendiary, Explosion, Fire	Allenstown Hazard Mitigation Committee, CNHRPC
Severe Storms and Flooding Jul-Aug 1986	771	1986	Jul 29-Aug 10	N/A for Allenstown	Severe summer storms with heavy rains, tornadoes, flash floods, and severe winds, damaged the road network statewide. Disaster declared in Cheshire, Sullivan and Hillsborough Counties (not declared in Merrimack County).	Allenstown's gravel roads likely washout during these storms. Trees likely fall onto roads along with power lines.	Flood, Wind, Landslide, Erosion, Debris	FEMA, NH HSEM, CNHRPC, Allenstown Hazard Mitigation Committee
Earthquake 4.5M Sanbornton Jan 1982	No	1982	Dec	N/A	An earthquake originating near in Sanbornton in Belknap County measured 4.5M and was felt in various locations throughout the State. The area it was felt includes all of	A Sanbornton-centered earthquake could have caused some light physical damage in Allenstown. Sanbornton is about 25-30 miles to the northwest of Allenstown.	Earth, Earthquake	CNHRPC, Earthquake-track.com,

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4 HAZARD RISK ASSESSMENT

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					northern Merrimack County including the Concord area communities in Central NH. The earthquake was known to have cracked the original glass panes in one Warner resident's home.			
NH Blizzard of Feb 1978	No	1978	Feb 5-7	N/A	RSI Index of Category 5 (Extreme). This snowstorm is described as "a natural disaster of major proportions" and stunned all of New England. The storm was caused by an intense coastal Nor'easter that produced winds in excess of hurricane force and very high snow totals. Most of southern New England received more than three feet of snow, 25-33" in NH and higher throughout New England. Abandoned cars along roadways immobilized infrastructure and blocked major interstates. For over a week, New England remained paralyzed by the storm. All of New Hampshire was impacted. Governor Meldrim Thomson Jr. declared a state of emergency.	It is likely many of the same snow depths and effects occurred across Allenstown as occurred in Merrimack County and New England. The entire Central NH Region was brought to a standstill.	Extreme Temperatures, Severe Snow Storms, Windchill, Power Failure	Allenstown Hazard Mitigation Committee; American Meteorological Society, Northeast States Emergency Consortium, CNHRPC
Allenstown Suncook River Ice Jams Mar 1977	No	1977	Mar	N/A	N/A, although surrounding communities may have had mosquito problems too	In March of 1977, ice break-up caused a major jam in the Suncook River, causing flooding both in Allenstown and Pembroke. Homes and roads were flooded. More than 100 buildings were evacuated in Allenstown and Pembroke combined.	River, Ice Jam, Flood, Winter, Extreme Temps, Debris Impacted Infrastructure	Allenstown Hazard Mitigation Committee, US Army Corps of Engineers, CNHRPC
Allenstown Suncook River Floods Spring 1976	No	1976	Spring	N/A	N/A, although surrounding communities may have had mosquito problems too	In the spring of 1976, the Suncook River flooded in Allenstown, causing flooding on Albin Avenue, Canal Street, and Ferry Street.	River, Flood, Rapid Snow Melt, Extreme Temps	Allenstown Hazard Mitigation Committee, Town Historian

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4 HAZARD RISK ASSESSMENT

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						People living on Albin Avenue were evacuated. Brookside Trailer Park was also flooded.		2004, CNHRPC
Severe Storms and Flooding Jul 1973	399	1973	Jul 11	No data available	All counties in the State of NH experienced storm damage and were declared disaster areas, including Merrimack and Hillsborough Counties.	Torrential downpours inundated the area, including Allenstown which likely experienced road washouts.	Flood, Wind, Washout, Erosion	FEMA, CNHRPC, Allenstown Hazard Mitigation Committee
Quebec Earthquake 4.8M Jun 1973	No	1973	15-Jun	N/A	An earthquake originating near the Quebec border at a scale of 4.8 was felt in various locations throughout NH.	N/A, although some Allenstown residents may have felt the effects.	Earth, Earthquake	Northeast States Emergency Consortium, CNHRPC
Regional Earthquake Dec 1970	No	1970	Dec 25	N/A	The origin and magnitude are unknown but likely impacted the Central NH Region.	Some Allenstown residents may have felt the earthquake effects.	Earth, Earthquake	CNHRPC, Earthquake-track.com, Allenstown Hazard Mitigation Committee
Allenstown Suncook River Ice Jams Feb 1970	No	1970	Feb 12	N/A	N/A, although surrounding communities may have had mosquito problems too	During the February 12, 1970 ice jam event, there were three separate jam sites on the Suncook River in Allenstown. One site was an abandoned dam located in close proximity to the Route 28 bridge. This site caused the evacuation of 5 homes and 50 trailers. The second jam, near the Route 3 bridge, flooded roads and 40 families were forced to evacuate. The last ice jam was located at the Webster Dam and resulted in eight flooded basements. Brookside Trailer Park was flooded. Residents of Riverside Park were evacuated and the Civil Defense was called out to sandbag a home at Pine Acres. The home was normally 100 feet from the stream's edge, but water reached the home's foundation during the flood. The gates on the Suncook River Dam in Allenstown	River, Ice Jam, Flood, Winter, Extreme Temps, Debris Impacted Infrastructure	Allenstown Hazard Mitigation Committee, Town Historian 2004, Union Leader 02-12-70, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
						were raised to alleviate backpressure.		
Allenstown Snowstorm April Late 1950s	No	Late 1950s	April		N/A It is likely the Central NH region experienced similar conditions.	During mid-April in the late 1950s, an ice storm impacted Allenstown by disrupting the road network. Bulldozers were required to open the road to get to the Town Hall.	Winter, Extreme Temp, Wind, Ice, Utility	Allenstown Hazard Mitigation Committee, CNHRPC
Older Hurricanes 1954-1991	No	1954	to 1991		N/A Many older hurricanes have impacted New Hampshire including the 1954 – 1991 Hurricanes: Carol on August 31, 1954 (tree and crop damage), Edna on September 11, 1954, Donna on April 12, 1960 (heavy flooding), Dora on August 28, 1971, Bell on August 10, 1976, Gloria on September 27, 1985, and Bob in 1991.	Downed trees, wind damage, and flooding were likely experienced in Allenstown during many of these hurricanes. 1960- Hurricane Donna impacted Allenstown with heavy rain and some wind damage. 1954- Hurricane Carol, a category 2 storm, passed through the area resulting in heavy rain with increased wind. This resulted in extensive crop and tree damage.	Tropical, Wind, Flood, Debris	Allenstown Hazard Mitigation Committee, NH Homeland Security and Emergency Management, CNHRPC
Regional Snow Storm and Rapid Snow Pack Melt Mar 1953	No	1953	Mar		N/A Similar rain or snow storms and rapid snow pack melt likely impacted the Central NH region. The highest level of water in the Blackwater Dam was measured, with the capacity at 93%. No flooding was reported. Uncertain as to exactly what type of storm caused this effect. A total of nearly 8" of precipitation in March 1953. The Hopkinton-Everett Flood Control Reservoir (1963) has not yet been constructed for this event. Contoocook River flooding was likely experienced	Local river flooding, including the Merrimack River and Suncook River in Allenstown, likely occurred.	Flood, Debris	FEMA, NH HSEM, US Army Corps of Engineers, CNHRPC
Regional Earthquake Dec 1940	No	1940	Dec 20-24		N/A The earthquake was reportedly felt in all of New Hampshire. The greatest earthquake felt	Allenstown residents likely felt shaking and rattling and may have heard loud noises.	Earth, Earthquake	CNHRPC, Local Histories

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
					in all of New Hampshire caused “a heavy rumble” and “was accompanied by the rattling of windows and the crashing of dishes” in the Central NH region.			
10 Severe Snowstorms 1940-1978	No	1940	to 1978	N/A	Ten severe snowstorms are documented in south-central NH during this time span, Feb 14-15, 1940 (depths over 30” and high winds), Feb 14-17, 1958 (20-33”), Mar 18-21, 1958 (22-24”), Mar 2-5, 1960 (up to 25”), Jan 18-20, 1961 (up to 25”, blizzard conditions), Jan 11-14, 1964 (up to 12”), Jan 29-31, 1966 (up to 10”), Feb 22-28, 1969 (24-98”, slow-moving storm), Dec 25-28, 1969 (12-18”), Jan 19-21, 1978 (up to 16”).	Although it is unknown precisely what Allenstown experienced, it is likely many of the same snow depths occurred, as well as debris on roads, difficulty traveling, crashes, and power outages.	Extreme Temp, Winter, Snow Storms, Utility, Power Outage, Debris Impacted Infrastructure	American Meteorological Society, CNHRPC
Regional & Allenstown Hurricane of Sep 1938	No	1938	Sep 21	N/A	Hurricane made landfall as a 3 on the Saffir-Simpson Scale, killed about 682 people and damaged or destroyed over 57,000 homes. Most deadly New England hurricane. Central New Hampshire was inundated with water. This was also the worst hurricane to ever strike New England, resulting in 564 deaths and over 1,700 injuries (Northeast States Emergency Consortium). Downed trees caused extensive damage to homes, businesses and community infrastructure. President Roosevelt ordered emergency aid be sent to NH, including Merrimack County. Thirteen people died in New Hampshire.	High winds and heavy flooding made this hurricane the worst natural disaster to impact the Town. Wind had a devastating impact in Allenstown. Many roofs and chimneys were torn off by high winds in Town	Tropical, Wind, Hurricane, Flood, Debris	CNHRPC, USGS 1938 report, Allenstown Town Historian 2004
Regional & Allenstown Flood of	No	1936	Mar 11-21	N/A	Simultaneous high snowfall totals, heavy rains, and warm	In central New Hampshire, the flood of 1936 caused the	Flood, River, Ice Jam,	Concord Monitor, Union

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Allenstown	Local Effects Occurring in Allenstown	Hazard Category	Source
Mar 1936					weather combined to hit all of New England. Floods killed 24 people, caused \$133,000,000 in damage, and made 77,000 people homeless in New England. The great flooding of 1936 resulted from heavy rains and rapid snow pack melt. Snow north of Concord contributed to the higher waters in the Winnepesaukee, Contoocook and Pemigewasset rivers that were largely responsible for the destruction in Concord and the surrounding area. NH issued boil water warnings to everyone.	Suncook River and Merrimack River to overflow. The Merrimack River flooded homes near the Sewer Plant on Ferry Street and also flooded homes on Main Street in Allenstown. In Epsom bordering Allenstown, low roads near the Suncook River were flooded. In addition, water came up over the railroad tracks and train service could not reach Town. It took 5-7 days for the floodwaters to completely recede. This is one of the worst natural disasters to ever strike nearby Epsom.	Winter, Rapid Snow Melt, Erosion, Scouring, Debris Impacted Infrastructure	Leader, Army Corps of Engineers Ice Jam Database, CNHRPC, USGS 1938 report, Allenstown Town Historian 2004, Epsom Town Historian
Merrimack County Earthquake Nov 1884	No	1884	Nov 23	N/A	The earthquake was reportedly felt in an area of 14,000 square miles, in all of Merrimack County. Two moderate earthquakes shook the Merrimack County area, causing damages to foundations.	It was unknown what Allenstown residents experienced.	Earth, Earthquake	CNHRPC, NH Department of Safety

Source: Compilation of Events by Allenstown Hazard Mitigation Committee; CNHRPC

Description and Magnitude of Hazards

A compilation of past hazards that have occurred in Allenstown and the Central NH Region area is provided in the prior Table of **Local and Area Hazard Events**. **Existing and Susceptible Hazard Locations in Town** are areas to watch, areas of particular susceptibility and may be vulnerable to future events. **Potential Future Hazards** are determined based on the past hazard events, possibilities, and existing issues in Town to provide focus to future potential problem areas and to help with mitigation action development and are provided in the **Potential Future Hazards** section.

Each hazard is generally described and then is noted how and where it could occur in Allenstown. For all hazards examined in this Plan, a table of the **Hazard Locations in Town** and the **Potential Future Hazards** is provided at the end of this Plan Chapter.

Cumulative hazard events were researched using a wide variety of sources for the **original Allenstown Hazard Mitigation Plan 2004** and the **2010** and **2015 Plan Updates** which were the basis for many of the past disaster events and then were updated to the present day. The **2015 Plan** provided recent information on many of the extreme disasters experienced between **2005-2008**. Sources and techniques included interviewing local townspeople, researching Town Histories and related documents, and collecting information from governmental or non-profit websites. Presidentially declared disasters or other significant hazard events are described for the surrounding area or Merrimack County for the **Hazard Mitigation Plan Update 2020** and some of them may have affected the community. These disasters were also considered by the Committee when determining the risk evaluation.

Committee member experiences, knowledge, and recollections generally comprise the **Local and Area Hazard Events** and **Hazard Locations in Town**. While additional hazards might have occurred in Town, those events in the Plan are what the Committee chose to list, or were familiar with to list, to comprise the hazard events within the in Tables. The same is true for the **Potential Future Hazards** section.

Numeric of Probability and Severity	CONCERN SUMMARY	Numeric of Overall Risk Score
1	LOW	1 - 4
2	MEDIUM	5 - 7
3	HIGH	8 - 11
4	HIGH	12 - 16

EARTH HAZARDS

Earth hazards include geologic events such as the small earthquake NH residents experience. The Central NH area is seismically active and small earthquakes (less than **2.5** magnitude on the Richter Scale) occur about **1-2** times per year. Landslides can occur as a result of earthquakes, rain, flooding and result in erosion along roadways and watercourses.

Radon is a naturally occurring radioactive gas with carcinogenic properties. The gas is a common problem in many states, including New Hampshire, seeping into homes from basements. Radon may also enter homes dissolved in drinking water from drilled wells. High levels of radon in water from individual drilled wells is a common occurrence in New Hampshire. Radon is no longer being addressed by the *State of New Hampshire Multi-Hazard Mitigation Plan 2018* as no new studies have made specific data available. It is generally known that radon exists throughout in the State and in communities, including the Central NH Region. Arsenic is a new concern that often co-occurs with radon. Radon is known to be present throughout New Hampshire and is addressed on an individual basis, no longer addressed in the **Allenstown Hazard Mitigation Plan** because of the lack of State monitoring and available action.

There are several types of **EARTH** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included		
EARTH	DROUGHT	EARTHQUAKE	LANDSLIDE Soil, Rockslide or Excavation Areas

Drought

The overall ratings of **Drought** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
DROUGHT	2 MEDIUM	1 LOW	1 LOW	1 LOW	2.0 LOW

A drought is defined as a long period of abnormally low precipitation, especially one that adversely affects growing or living conditions. Droughts are becoming less rare in New Hampshire than they have been in the past. They have different, widespread damages compared with floods and are more difficult to define. The effect of droughts is indicated through measurements of soil moisture, groundwater levels, and streamflow. However, not all of these indicators will be minimal during a drought. For example, frequent minor rainstorms can replenish the soil moisture without raising ground-water levels or increasing streamflow. Low streamflow also correlates with low ground-water levels and commonly cause diminished water supply because ground water discharge to streams and rivers maintains streamflow during extended dry periods.

In the case of drought, residential (dug wells especially) and Town water supplies would be threatened. Pembroke Water Works in Pembroke provides municipal water to the Downtown area/ Suncook Village and implements water restrictions during dry conditions. The remaining residences, businesses, non-residential buildings and facilities rely either on community water systems pumped from bedrock or on individual well water systems which are not easily replenished during periods of drought. During the **2015-2018** drought period, many residences notified the Town of their dug wells going dry. The residents either made private arrangements for potable water or they dug new bedrock wells. All farms, orchards, tree farms, and conservation areas in Town would be affected by drought. Additionally, wildfires have the potential of being more severe and commonplace during periods of drought, more difficult to contain. The Fire Department has on occasion brought water to farms for agricultural use.

Magnitude of Drought

Table 13 displays overall drought magnitude as measured by the US Drought Monitor (USDM) and Palmer Hydrological Drought Index (PHDI), the extent of hydrological drought in the form of long-term, cumulative monthly moisture conditions. The weekly [US Drought Monitor for NH](#) can be accessed online. The Palmer indices are developed by algorithms taking into consideration precipitation, temperature data, and the local Available Water Content (AWC) of the soil.

Table 13
US Drought Monitor Intensity Scale

Category	Description	Description of Possible Impacts	Palmer Drought Severity Index (PDSI)
D0	Abnormally Dry	Going into drought: - Short-term dryness, slow planting, growth of crops or pastures Coming out of drought: - Some lingering water deficits - Pastures or crops not fully recovered	-1.0 to -1.9
D1	Moderate Drought	- Some damage to crops, pastures - Streams, reservoirs or wells low, some water shortages developing or imminent - Voluntary water use restrictions requested	-2.0 to -2.9
D2	Severe Drought	- Crop of pasture losses likely - Water shortages common - Water restrictions imposed	-3.0 to -3.9
D3	Extreme Drought	- Major crop/pasture losses - Widespread water shortages or restrictions	-4.0 to -4.9
D4	Exceptional Drought	- Exceptional and widespread crop/pasture losses - Shortages of water in reservoirs, streams and wells creating water emergencies	-5.0 or less

Source: <https://droughtmonitor.unl.edu/AboutUSDM/AbouttheData/DroughtClassification.aspx>
as compiled by CNHRPC, accessed 02-22-19

Earthquake

The overall ratings of **Earthquake** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
EARTHQUAKE	4 HIGH	1 LOW	1 LOW	1 LOW	4.0 LOW

An earthquake is a rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. **Earthquakes** can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and often cause **landslides, flash floods, fires**, and avalanches. Larger earthquakes usually begin with slight tremors but rapidly take the form of one or more violent shocks, and end in vibrations of gradually diminishing force called aftershocks. The underground point of origin of an earthquake is called its focus; the point on the surface directly above the focus is the epicenter. The magnitude and intensity of an earthquake is determined by the use of scales such as the Richter scale and Mercalli scale. Geologic events are often associated with California, but New England is considered a moderate risk earthquake zone. New Hampshire experiences regular, minor earthquakes with its bedrock geology.

Magnitude of Earthquake

Earthquake hazard magnitude can be measured by the Richter Scale as shown in **Table 14**, just as its intensity can be measured by the Modified Mercalli Instrumental Intensity (MMI) scale. The two scales do not correlate consistently among sources but utilizing a combination of scales and descriptions on USGS and NOAA sites, **Table 14** approximates the Richter to Mercalli comparison. For practical purposes, descriptions of potential impacts to people, furnishings, the built environment and the natural environment are provided to better place earthquake magnitude in perspective.

Table 14
Modified Mercalli and Richter Magnitude Scales

Approx Richter Magnitude Scale	Mercalli Instrumental Intensity Scale	Damage Category	Perceived Shaking	Potential Impacts			
				People's Reaction	Furnishings	Built Environment	Natural Environment
< 3	I	Instrumental	Not felt	Not felt.	N/A	Passing truck vibrations and noises	Changes in level and clarity of well water are occasionally associated with great earthquakes at distances beyond which the quakes are felt by people
3 – 3.4	II	Just Perceptible	Weak	Felt by a few.	Delicately suspended objects may swing.	N/A	Trees and bodies of water sway.
3.5 - 4	III	Slight	Weak	Felt by several. Vibrations like a truck passing.	Hanging objects may swing appreciably. Vehicles rocked slightly.	N/A	N/A
4.1 – 4.4	IV	Moderate	Light	Felt by many. Sensation like heavy truck striking building.	Dishes rattle. Vehicles rocked noticeably.	Walls creak, windows rattle.	N/A
4.5 – 4.8	V	Rather Strong	Moderate	Felt by nearly all. Frightens a few.	Pictures swing out of place; small objects move; a few objects fall from shelves within the community.	A few instances of cracked plaster and cracked windows in the community.	Trees and bushes shaken noticeably.
4.9 – 5.4	VI	Strong	Strong	Frightens many. People move unsteadily	Many objects fall from shelves.	A few instances of fallen plaster, broken windows and damaged chimneys within the community.	Some fall of tree limbs and tops, isolated rockfalls and landslides, and isolated liquefaction.
5.5 - 6	VII	Very Strong	Very strong	Frightens most. Some lose balance.	Heavy furniture overturned	Damage negligible in buildings of good design and construction but considerable in some historic, poorly built or badly designed structures; weak chimneys broken at roof line, fall of unbraced parapets.	Tree damage, rockfalls, landslides, and liquefaction are more severe and widespread with increasing intensity. Water is stirred and muddy.

Approx Richter Magnitude Scale	Mercalli Instrumental Intensity Scale	Damage Category	Perceived Shaking	Potential Impacts			
				People's Reaction	Furnishings	Built Environment	Natural Environment
6.1 – 6.5	VIII	Destructive	Severe	Many find it difficult to stand	Very heavy furniture moves conspicuously.	Damage slight in buildings designed to be earthquake resistant but severe in historic or some poorly built structures. Widespread fall of chimneys, walls and monuments. Powerlines fallen.	N/A
6.6 - 7	IX	Ruinous	Violent	Some forcibly thrown to the ground	N/A	Damage considerable in some buildings designed to be earthquake resistant; buildings shift off foundations if not bolted.	N/A
7.1 – 7.3	X	Disastrous	Extreme	N/A	N/A	Some well-built wooden structures destroyed. Most ordinary masonry structures collapse; damage moderate to severe in many buildings designed to be earthquake resistant. Dams destroyed.	N/A
7.4 – 8.1	XI	Very Disastrous	N/A	N/A	N/A	Few if any masonry structures remain standing. Bridges destroyed. Rails bent greatly. Wide cracks in ground. Pipelines break	Waves seen on the ground
> 8.1	XII	Catastrophic				Total damage. Lines of sight and level are distorted. Objects thrown into air.	Waves seen on the ground

Source: National Oceanic and Atmospheric Administration (NOAA), USGS and other sources compiled by CNHRPC Feb 2020

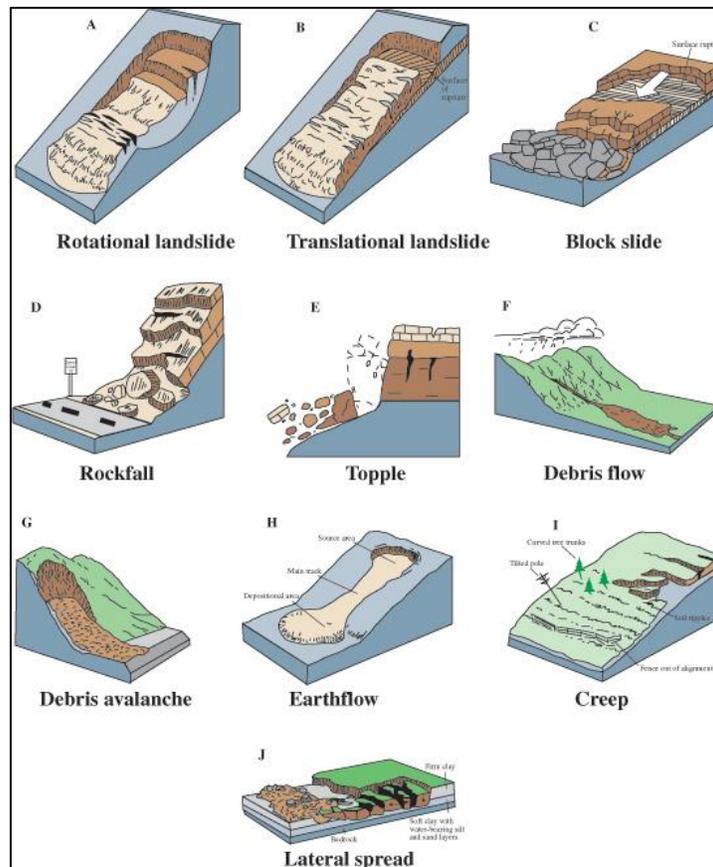
Landslide

The overall ratings of **Landslide** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
LANDSLIDE	2 MEDIUM	1 LOW	1 LOW	1 LOW	2.0 LOW

A landslide is the downward or outward movement of slope-forming materials reacting under the force of gravity including: mudflows, mudslides, debris flows, rockslides, debris avalanches, debris slides, and earth flows. Erosion of soil may also contribute to landslides. **Landslides** could damage or destroy roads (US 3 or NH 28, local roads), electrical and telephone lines, buildings, sewers, bridges, dams, forests, parks, and farms and are also dangerous to people. A display of different types of landslides is shown in **Figure 6**.

Figure 6
Basic Types of Landslides



Source: US Geological Survey (USGS)

Magnitude of Landslide

There is no known standardized measurement of landslide magnitude available.

EXTREME TEMPERATURE HAZARDS

Extreme temperature hazards include diverse hazards such as severe cold or windchill, excessive heat, and heatwaves. Excessive heat or extreme cold can create other hazards such as public health issues, utility outages. The severity of these hazards is influenced by New Hampshire’s changing climate and severe weather systems. This category is meant to encompass all the hazards which can be influenced by the extreme weather temperatures and climate changes that New England, New Hampshire, the Central NH Region, and Allenstown are experiencing.

There are several types of **EXTREME TEMPERATURE** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included
EXTREME TEMPERATURES	EXTREME TEMPERATURES Excessive Heat, Heat Wave, Cold or Wind Chill

The environmental temperature spectrum is addressed under extreme temperatures, from very cold to very hot.

The overall ratings of **Extreme Temperatures** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
EXTREME TEMPERATURES Excessive Heat, Heat Wave, or Cold or Wind Chill	4 HIGH	1 LOW	1 LOW	1 LOW	4.0 LOW

Excessive Heat or Heatwave

A heat wave is a period of abnormally and uncomfortably hot and unusually humid weather that typically lasts two or more days. The National Weather Services’ Heat Index is used to measure humidity against temperature to develop a “real feel” temperature. Heat disorders on the body are quick and can be deadly. These now normal hot temperatures in the summer are commonly known as **excessive heat**.

The National Weather Service categorizes a **Hot Day** when temperatures reach **90°** or warmer. An official **Heat Wave** is defined as three or more consecutive days with the temperature reaching or exceeding **90°**.

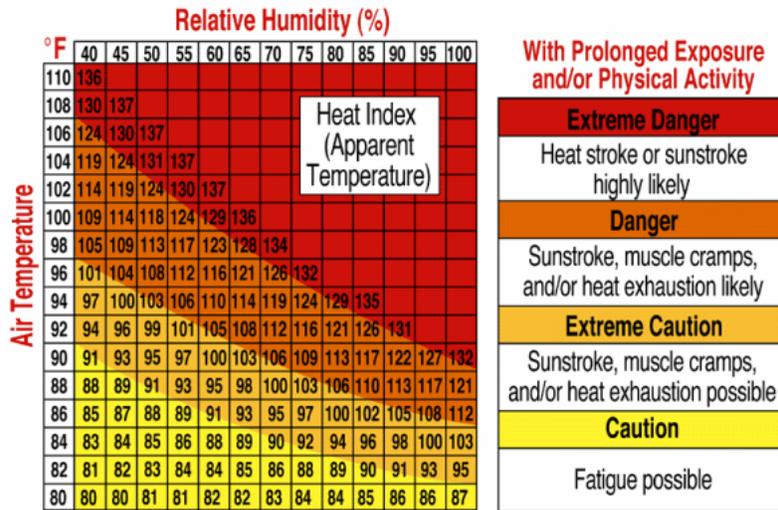
Extreme heat weather is forecasted with the following levels of high temperatures. **Excessive Heat Outlooks** are issued when the potential exists for an excessive heat event in the next **3-7** days. An Outlook provides information to those who need considerable lead-time to prepare for the event.

<p>✦ Excessive Heat Watch BE PREPARED</p>	<p>A Heat Watch is 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.</p>
<p>✦ Excessive Heat Warning BE AWARE</p>	<p>An Excessive Heat Warning is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for this Warning is when the maximum heat index temperature is expected to be 105° or higher for at least 2 days and night time air temperatures will not drop below 75°; however, these criteria vary across the country, especially for areas not used to extreme heat conditions. If you don't take precautions immediately when conditions are extreme, you may become seriously ill or even die.</p>
<p>✦ Heat Advisory TAKE ACTION</p>	<p>A Heat Advisory is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for this Advisory is when the maximum heat index temperature is expected to be 100° or higher for at least 2 days, and night time air temperatures will not drop below 75°; however, these criteria vary across the country, especially for areas that are not used to dangerous heat conditions. Take precautions to avoid heat illness. If you don't take precautions, you may become seriously ill or even die</p>

Magnitude of Excessive Heat of Heat Wave

Excessive heat is measured by the [NWS Heat Index and the NWS Excessive Heat Warning Classifications](#). As both the air temperature and the humidity rise, so will the danger level to people. Heat disorders will become more likely with prolonged exposure or strenuous activity as shown in **Figure 7**.

Figure 7
Heat Index (Temperature and Humidity)



Source: weather.gov

The **Caution** stage describes how fatigue is possible, while **Extreme Caution** temperatures can result in sunstroke, muscle cramps, or heat exhaustion. The **Danger** temperatures could cause sunstroke, while at the **Extreme Danger** temperatures, heatstroke or sunstroke is likely according to the humidity and temperature Heat Index. Since heat index values were devised for shady, light wind conditions, exposure to full sunshine can increase heat index values by up to **15°F**. Also, strong winds, particularly with very hot, dry air, can be extremely hazardous.

Cold or Wind Chill

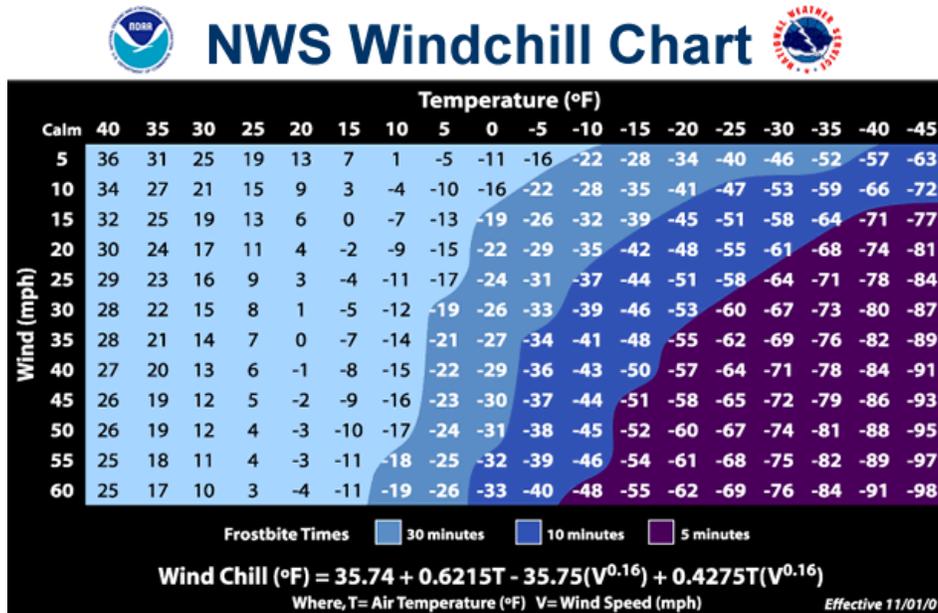
Extreme cold temperatures are associated with continental Arctic air masses. The actual temperatures reached depend specifically on the nature of the cold air mass and where it originated. In general, those from the Arctic regions are the coldest. Though cold temperatures are dangerous, they become more so in conjunction with strong winds. The combination produces a wind-chill factor, which is heat loss measured in Watts per meter squared (Wm⁻²). A wind-chill factor of **1400 Wm⁻²** is equivalent to a temperature of **-40° F**. At **2700 Wm⁻²**, exposed flesh freezes within a half-minute.

Magnitude of Extreme Cold or Wind Chill

Extreme cold magnitude can be measured for **windchill** using the **NWS Windchill Temperature (WCT) Index** as displayed in **Figure 8**, measuring the wind and temperature leading to how quickly frostbite can occur. The **extreme cold weather** warning stages describe the potential impacts of the weather.

Figure 8

Windchill Temperature (WCT) Index



Source: National Weather Service

Cold weather warnings incrementally warn people of the dangers of **extreme cold**. The [National Weather Service](https://www.weather.gov) provides watches, advisories, and warnings.

<p>✦ Wind Chill Watch BE PREPARED</p>	<p>NWS issues a wind chill watch when dangerously cold wind chill values are possible. As with a warning, adjust your plans to avoid being outside during the coldest parts of the day. Make sure your car has at least a half tank of gas and update your winter survival kit.</p>
<p>✦ Wind Chill Advisory BE AWARE</p>	<p>NWS issues a wind chill advisory when seasonably cold wind chill values, but not extremely cold values, are expected or are occurring. Be sure you and your loved ones dress Appropriately and cover exposed skin when venturing outdoors. A Wind Chill Advisory is issued for New Hampshire when wind chill values are expected to be -20°F to -29°F and winds are greater than 5 mph.</p>
<p>✦ Wind Chill Warning TAKE ACTION</p>	<p>NWS issues a wind chill warning when dangerously cold wind chill values are expected or are occurring. A Wind Chill Warning is issued for New Hampshire when wind chill values are expected to be -30°F and winds are greater than 5 mph.</p>

FIRE HAZARDS

Fire can be caused by several agents and can spread rapidly to consume property and endanger lives. This **2020 Plan** examines **lightning**, and **wildfire** (natural) fire sources and places other **fires (vehicles, structure, arson, explosions)** with **Technological Hazards**.

Wildfire is a significant concern and can quickly get out of control without good infrastructure, easily accessible forested backlots and practiced procedures. Lightning or human folly can cause wildfire. Locations of older narrow graveled roads or densely packed residential areas and areas of Town or roads with only 1 access/egress are among the most vulnerable locations for fire and wildfire hazards. Rural, forested areas of the community or recreation and conservation areas are often the most vulnerable to both wildfire and lightning.

There are several types of natural **FIRE** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included	
FIRE	WILDFIRE Brushfire, Outdoor Fires or Accidental	LIGHTNING

Wildfire

The overall ratings of **Wildfire** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
WILDFIRE Brushfire, Outdoor Fires or Accidental	4 HIGH	2 MEDIUM	2 MEDIUM	2 MEDIUM	8.0 HIGH

Wildfire is defined as any unwanted and unplanned fire burning in forest, shrub or grass. Wildfires are frequently referred to as forest fires, brush fires, shrub fires or grass fires, depending on their location and size. They often occur during drought and when woody debris on the forest floor is readily available to fuel the fire. The threat of wildfires is greatest where vegetation patterns have been altered by past land-use practices, fire suppression and fire exclusion. Because fire is a natural process, fire suppression can lead to more severe wildfires due to vegetation buildup. With Bear Brook State Park, **wildfire** seems particularly relevant.

Increased severity over recent years has decreased capability to extinguish wildfires. Wildfires are unpredictable and usually destructive, causing both personal property damage and damage to community infrastructure and cultural and economic resources.

Magnitude of Wildfire

Although there are a number of potential indices, the current standard of measuring wildfire magnitude is utilizing the National Wildfire Coordinating Group (NWCG)'s wildfire classification scale. **Table 15** displays the wildfire classification size per the number of acres burned.

Table 15
National Wildfire Coordinating Group Wildfire Classification Scale

Fire Class	Sizes in Acres
Class A	1/4 acre or less
Class B	> 1/4 acre to < 10 acres
Class C	10 acres to < 100 acres
Class D	100 acres to < 300 acres
Class E	300 acres to < 1,000 acres
Class F	1,000 acres to < 5,000 acres
Class G	5,000 acres or more

Source: National Wildfire Coordinating Group

The [New Hampshire Department of Natural and Cultural Resources Division \(NHDNCR\) of Forest and Lands \(DFL\)](#) helps to promote daily fire danger ratings which community members can readily understand. The Fire Department posts the information in a prominent location, at the Fire Station. The **fire danger ratings** are as follows:

<p>✦ Low GREEN</p>	Fire starts are unlikely. Weather and fuel conditions will lead to slow fire spread, low intensity and relatively easy control with light mop-up. Controlled burns can usually be executed with reasonable safety.
<p>✦ Moderate BLUE</p>	Some wildfires may be expected. Expect moderate flame length and rate of spread. Control is usually not difficult and light to moderate mop-up can be expected. Although controlled burning can be done without creating a hazard, routine caution should be taken.
<p>✦ High YELLOW</p>	Wildfires are likely. Fires in heavy, continuous fuel such as mature grassland, weed fields and forest litter, will be difficult to control under windy conditions. Control through direct attack may be difficult but possible and mop-up will be required. Outdoor burning should be restricted to early morning and late evening hours.
<p>✦ Very High ORANGE</p>	Fires start easily from all causes and may spread faster than suppression resources can travel. Flame lengths will be long with high intensity, making control very difficult. Both suppression and mop-up will require an extended and very thorough effort. Outdoor burning is not recommended.
<p>✦ Extreme RED</p>	Fires will start and spread rapidly. Every fire start has the potential to become large. Expect extreme, erratic fire behavior. NO OUTDOOR BURNING SHOULD TAKE PLACE IN AREAS WITH EXTREME FIRE DANGER.

Lightning

The overall ratings of **Lightning** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
LIGHTNING	4 HIGH	1 LOW	1 LOW	1 LOW	4.0 LOW

All thunderstorms contain lightning. During a lightning discharge, the sudden heating of the air causes it to expand rapidly. After the discharge, the air contracts quickly as it cools back to ambient temperatures. This rapid expansion and contraction of the air causes a shock wave that we hear as thunder, a shock wave that can damage building walls and break glass. Lightning strikes can cause death, injury, and property damage. Lightning is often referred to as the “underrated killer”.

Magnitude of Lightning

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 in **Table 16**.

**Table 16
Lightning Activity Level (LAL)**

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

Source: National Weather Service

FLOOD HAZARDS

Floods are defined as a temporary overflow of water onto lands that are not normally covered by water. Flooding results from the overflow of major rivers and tributaries, storm surges, and/or inadequate local drainage. Floods can cause loss of life, property damage, crop/livestock damage, and water supply contamination. Floods can also disrupt travel routes on roads and bridges. However, floods can be beneficial to the low lying agricultural areas which are used for active farm lands by enriching the soil.

Floodplains are usually located in lowlands near rivers, and flood on a regular basis. The term **100-year flood** does not mean that a flood will occur once every **100** years. It is a statement of probability that scientists and engineers use to describe how one flood compares to others that are likely to occur. It is more accurate to use the phrase **1% annual chance flood**. This phrase means that there is a **1%** chance of a flood of that size happening in any single year.

Inland floods are most likely to occur in the spring due to the increase in rainfall and melting of snow; however, floods can occur at any time of year. A sudden thaw during the winter or a major downpour in the summer can cause flooding because there is suddenly a lot of water in one place with nowhere to drain. Flooding is the most common natural disaster to affect New Hampshire, a common and costly hazard.

Dam Breach, Release or Failure has a close relationship with **Flood Hazards**, uses the NH DES Dam Hazard Classification categories, and has therefore been rated along with the natural hazards.

There are several types of **Flood Hazards** examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included	
FLOOD	INLAND FLOODING Rains, Snow Melt, or Flash Floods	RIVER HAZARDS Ice Jams, Scouring, Erosion, Channel Movement or Debris
TECHNOLOGICAL	DAM FAILURE Water Overtop, Breach, Beaver, etc.	

Inland Flooding

The overall ratings of **Inland Flooding** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
INLAND FLOODING Rains, Snow Melt or Flash Floods	2 LOW	1 LOW	1 LOW	1 LOW	2.0 LOW

Inland flooding hazards from storms, spring temperatures, rains and more can be measured by Special Hazard Flood Areas (SFHAs) and river gage flood stage heights.

Magnitude of Inland Flooding

Flooding magnitude, or how severe flooding could occur in Allenstown, can be measured by the following SFHA Flood Zone scale in **Table 17**. “Flood” encompasses all types of flooding including **Rains, Snow Melt, Floods and Flash Floods** and is often the result of other natural hazards, such as **Tropical and Post Tropical, Severe Storms**, etc.

Special Flood Hazard Areas (SFHAs)

Base Flood Elevations (BFEs) are abundant within Central NH along the **Merrimack River, Contoocook River, Blackwater River, Warner River, Soucook River, and Suncook River** on the DFIRMs of **2010**. In Allenstown (**330114**) New Hampshire (**D33013C**), there are several DFIRMs identifying floodplains. DFIRM panels are not printed when floodplains are not present in an area.

DFIRMs illustrate the location of floodplains as a significant upgrade from the previous series of outdated paper maps, known as FIRMs. These new **2010** maps are now set on an aerial photography background that displays roads, buildings, forested areas, waterbodies and watercourses. Allenstown’s Zoning Ordinance references the new maps as the official Special Hazard Flood Areas (SFHAs). The general Flood Zone types appear in **Table 17**.

Table 17
Special Flood Hazard Area (SFHA) Zones on 2010 DFIRMS

Special Flood Hazard Areas on Allenstown DFIRMs	
Zone A	<p>1% annual chance of flooding</p> <ul style="list-style-type: none"> • 100-year floodplains <i>without</i> Base Flood Elevations (BFE)
Zone AE <i>(with or without floodways)</i>	<p>1% annual chance of flooding</p> <ul style="list-style-type: none"> • 100-year floodplains <i>with</i> Base Flood Elevations (BFE) • some identified as floodways with stream channel and/or adjacent floodplain areas • areas must be kept free of encroachment so 1% annual chance of flood will not substantially increase flood height
Zone X	<p>0.2% annual chance of flooding</p> <ul style="list-style-type: none"> • 500-year floodplain <i>without</i> Base Flood Elevations (BFE) • sheet flow flooding less than 1-foot deep • stream flooding where the contributing drainage area is less than 1 square mile • areas protected from 100-year floodplains by levees • OR areas determined to be outside the 0.2% annual chance of flood (see DFIRMs)

Sources: FEMA and NH Geographically Referenced Analysis and Transfer System (NH GRANIT) websites

Allenstown DFIRMs can be viewed online at and downloaded from the [NH Geographically Referenced Analysis and Transfer System \(NH GRANIT\)](#) website. Alternatively, the DFIRMs’ respective paper FEMA 2009 Floodplain Maps in the Town Office could be consulted. Should the **Zone A** or **Zone X** or **Zone AE** flood to either the **100-year** or **500-year** level, the DFIRM areas will help **measure the location of the floodplain and potential magnitude of the flood**.

Suncook River Gage at Allenstown

Stream gages are useful tools to determine how quickly the water levels of the Suncook River have increased during heavy rainfall or snow melt conditions, and whether flooding is about to occur. River gages are essential for measuring flooding conditions in the Central NH Region. Dynamic river gages measure water height and discharge over time for the purposes of flood control and upload information in real time to the USGS, enabling easily accessible public information about potential flooding conditions at the gage location. Being able to monitor and chart this information provides emergency responders and local officials the opportunity to plan for protecting people and property.

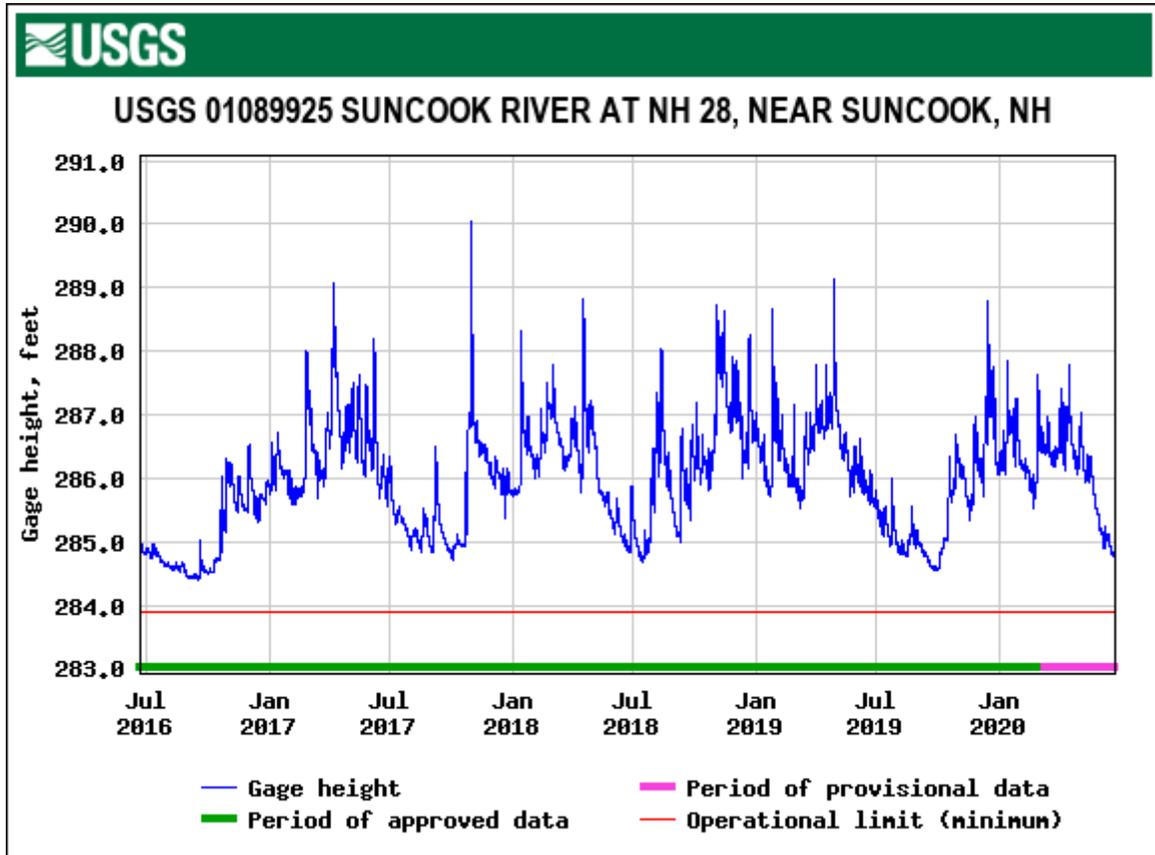
The US Geological Survey (USGS) operates **river monitoring gages** along many Central NH region rivers, including the **Suncook River**. Two river gaging stations are located on the **Suncook**. The [USGS gage in North Chichester](#) was installed in 1918 and has been operated/monitored on and off since then, but current observations are only available from November 2007 to present. The USGS Allenstown gage off of the NH 28 bridge was installed most recently in July 2011 after the Town of Allenstown secured a grant for its purchase, installation, and maintenance to help prepare its residents for **Suncook River** flooding.

The US Geological Survey (USGS) operates also operates the gage closest to Allenstown, [USGS 01089925](#), at the **Suncook River** on NH 28 on the bridge at the border with Pembroke. The gage measures **Suncook River's** flow from Epsom entering the Allenstown as it travels through Downtown and into the **Merrimack River**, reading river elevation height. The gage was funded using FEMA 2010 Emergency Management Performance Grant (EMPG) monies provided to Allenstown. Three years of gage maintenance was included, which ended July 2014. Pembroke no longer contributes towards its upkeep, and Allenstown has chosen to continue funding the service of the gage at this time. In addition, a static river height gage was installed at the same time on the US 3 bridge which permits visual monitoring in the field.

Hydrographs on the [US Geological Survey \(USGS\) National Water Information System \(NWIS\) website](#) display either the height of the water in feet or the discharge value in cubic feet per second in separate graphs and are a cooperative venture with the National Weather Service (NWS). River monitoring gage station options **measure the magnitude of river flooding during monitored times**.

Figure 9 displays the **Suncook River** at Allenstown (NH 28) elevation heights for **June 2016 – June 2020**, as reminder of this emergency management tool that continually measures potential flooding conditions as well as potential **Drought** conditions.

Figure 9
 USGS Suncook River Gage at NH 28 Hydrograph, Jun 2016-2020



Source: https://nwis.waterdata.usgs.gov/nh/nwis/uv?site_no=01089925, accessed 06-20

During the sample time period of **Aug 2020**, the NWS graph in **Figure 9** displays the elevation height of the **Suncook River**. The recorded extremes are a maximum water discharge of 3,640 ft³/s, October 31, 2017 (gage height 290.03 ft), and a minimum water discharge of 6.2 ft³/s on September 17, 2016.

Shown in **Figure 10** is the location of the NH 28 river gage on the Suncook River, north of Deerfield Road.

Figure 10

USGS Suncook River Gage at NH 28 01089925 Location



Source: https://nwis.waterdata.usgs.gov/nh/nwis/uv?site_no=01089925, accessed 06-20

Flood Stages are a measurement of when action needs to be taken and what type of flooding to expect. On the Suncook River (from the North Chichester gate) The **6.0' Action Stage** is when local officials would get ready to take action for a flooding event. The **7.0' Minor Flood Stage** will have minor flooding (minimal or no property damage but possibly public threat such as road washout), while the **12.0' Moderate Stage** (inundation of structures and roads near streams, evacuations) and **14.0' Major Stage** (extensive inundation of structures and roads, significant evacuations) will require immediate and significant action by the Town. These **Flood Stages** are another form of **Inland Flooding** magnitude, as pertaining to the lower **Suncook River**.

Rapid Snow Pack Melt

Warm temperatures and heavy rains cause rapid snowmelt. The water cannot seep into the frozen ground in early spring and so it runs off into streets and waterways. Quickly melting snow coupled with moderate to heavy rains are prime conditions for flooding.

There is the possibility of damages from the rapid snow pack melt because of the flooding from the **Suncook River** and the various brooks along the roads, roadside wetlands, and from the culverts of the watercourses. Locations in Allenstown that may be vulnerable to rapid snow pack melt include undersized or unmaintained culverts, roads, driveways, slopes, yards or fields, or any of the Town’s fast moving brooks or drainage areas. Damage to roads is expected.

Magnitude of Rapid Snow Pack Melt

Rapid snow pack melt is a type of flooding. On its own, it has no known magnitude measurement. However, the hazard can share **Flooding’s** Special Flood Hazard Areas (SFHAs) table.

River Hazards

There are several types of **RIVER** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included
RIVER	RIVER HAZARDS Ice Jams, Scouring, Erosion, Channel Movement or Debris

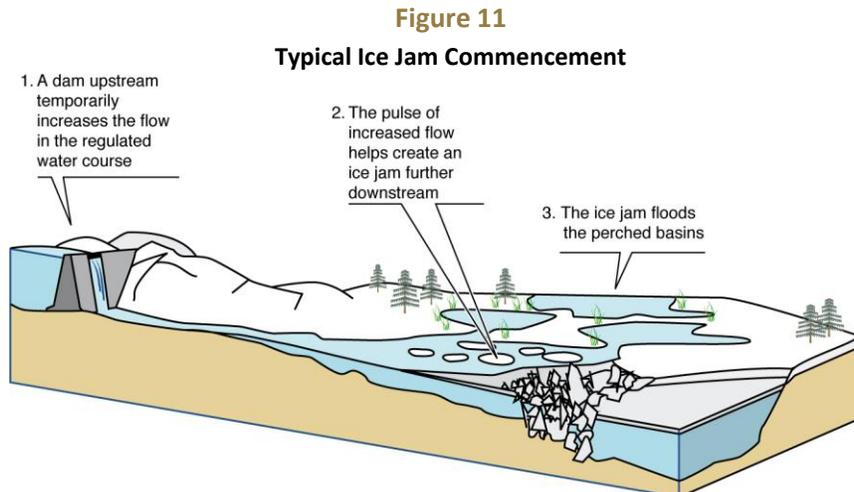
River hazards are considered different from flooding in this **Hazard Mitigation Plan**. They include ice jams, scouring of banks and infrastructure, erosion of banks and shoreline, channel movement, and woody material debris. These types of incidents could occur on large brooks or other watercourses as well as rivers. See also the **Map 7 Large Woody Material** series.

The overall ratings of **River Hazards** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
RIVER HAZARDS Ice Jams, Scouring, Erosion, Channel Movement or Debris	3 HIGH	1 LOW	1 LOW	1 LOW	3.0 LOW

River Ice Jams

Rising waters in early spring often break ice into chunks, which float downstream, pile up and cause flooding. Small rivers and streams pose special flooding risks because they are easily blocked by jams. Ice in riverbeds and against structures presents significant flooding threats to bridges, roads, and the surrounding lands. A visual of how ice jams often form is displayed in **Figure 11**.



Source: USGS, Internet Accessed May 2015

Magnitude of River Ice Jams

There is no known widely-used magnitude scale for **river ice jams**. River ice jams can cause debris impacted infrastructure when they apply pressure to bridges and dams.

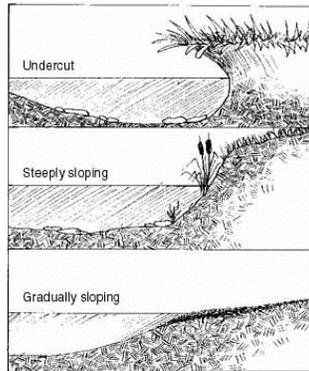
The US Army Corps of Engineers (ACOE) maintains the [Ice Jam Database, Bulletins & Surveys](#) website which locates where known ice jams are presently occurring and where they have occurred in the past. Reports can be generated in various formats so emergency responders can identify the locations of prior ice jams and begin to mitigate the effects of future events.

Fluvial Erosion, Bed Scouring and Channel Movement

Fluvial erosion is the wearing away of the river/stream bank and floodway. Bed scouring is the wearing away of the bed of the river or stream, typically shown as a pool type formation at downstream culvert outflows. Watercourses with high elevation change (stream gradient) are particularly prone to flash-flooding conditions and most vulnerable to erosion and scouring. During flooding or even high flow events, rivers can erode their banks and migrate into their floodplains. A migrating river, when channel movement is occurring, has the potential to impact nearby structures (berms, dams, buildings, etc.) or infrastructure such as river or stream crossings (culverts and bridges) or transportation features (roads, drainage structures, rail, etc.) in its migration path.

Fluvial geomorphology is the study of how processes of flowing water in rivers work to shape river channels and the land around them. Fluvial assessments are a collection of field data undertaken within designated river reaches. A **river reach** is a length of stream that has characteristics similar enough that condition data collected within that length is representative of the entire reach. **Figure 12** displays visual bank erosion characteristics.

Figure 12
Bank Erosion Characteristics

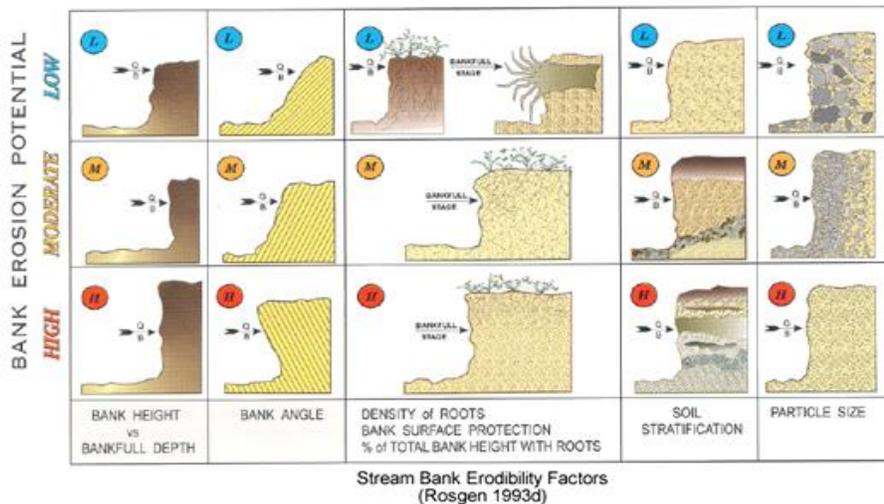


Source: US Geological Survey (USGS)

Magnitude of (Fluvial) River Bank Erosion

River and streambank erosion magnitude can be measured by the US EPA Bank Erosion Prediction Index (BEHI), which is used with the Near Bank Stress (NBS) quantification. Taken into consideration for the BEHI are the bank height versus bankfull depth, bank angle, density of roots, soil stratification, and particle size at a river reach. **Figure 13** displays the visual version of the index.

Figure 13
Bank Erosion Prediction Index (BEHI)



Source: US Environmental Protection Agency (US EPA)

Dam Failure

Dam breach and the resulting failure cause rapid loss of water that is normally impounded by the dam. These kinds of floods are extremely dangerous and pose a significant threat to both life and property as they are quick, unexpected, and if they occur during a flooding event, dam failures can overload an already burdened water channel.

The overall ratings of **Dam Failure** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
DAM FAILURE Water Overtop, Breach, Beaver, etc.	1 LOW	1 LOW	1 LOW	1 LOW	1.0 LOW

Magnitude of Dam Failures

Although dam failure is considered a **Technological Hazard**, it is often a secondary hazard caused by flooding conditions and has been rated along with the natural hazards. Classifications of dams and their magnitude of failure can be measured by the [NH DES Dam Hazard Classifications](#) shown in **Table 18**.

Table 18
New Hampshire Dam Hazard Classifications

Dam Classification		Inspection
NON-MENACE Structure		Inspection
NM	Means a dam that is not a menace because it is in a location and of a size that failure or misoperation of the dam would not result in probable loss of life or loss to property, provided the dam is:	Every 6 years if certain criteria are met
	<ul style="list-style-type: none"> ○ Less than six feet in height if it has a storage capacity greater than 50 acre-feet; ○ Less than 25 feet in height if it has a storage capacity of 15 to 50 acre-feet. 	
LOW Hazard Structure		Inspection
L	Means a dam that has a low hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in any of the following:	Every 6 years
	<ul style="list-style-type: none"> ○ 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 Structure		Inspection

Dam Classification		
S	Means a dam that has a significant hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in any of the following:	Every 4 years
	<ul style="list-style-type: none"> ○ No probable loss of lives. ○ 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: <ul style="list-style-type: none"> ◆ 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 ◆ Damage to an environmentally-sensitive site that does not meet the definition of reversible environmental losses. 	
HIGH Hazard Structure		Inspection
H	Means a dam that has a high hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in probable loss of human life as a result of:	Every 2 years
	<ul style="list-style-type: none"> ○ Water levels and velocities causing the structural failure of a foundation of a habitable residential structure or commercial or industrial structure, which is occupied under normal conditions. ○ Water levels rising above the first floor elevation of a habitable residential structure or a commercial or industrial structure, which is occupied under normal conditions when the rise due to dam failure is greater than one foot. ○ Structural damage to an interstate highway, which could render the roadway impassable or otherwise interrupt public safety services. ○ The release of a quantity and concentration of material, which qualify as “hazardous waste” as defined by RSA 147-A:2 VII. ○ Any other circumstance that would more likely than not cause one or more deaths. 	

Source: NH Department of Environmental Services (NHDES) Dams Bureau [Fact Sheet WD-DB-15](#), 2012

PUBLIC HEALTH HAZARDS

Public health issues can be measured in many ways. Students and the elderly are vulnerable to seasonal health outbreaks as they tend to congregate in large numbers and in shared environments where physical contact is common. Large groups can make bioterrorism more effective.

It is difficult to predict where an epidemic would occur due to human, mosquito and wildlife mobility. Commonly occurring epidemics following extreme heat or cold can include **influenza**, norovirus, rhinovirus (viruses), Lyme disease, Anaplasmosis and Babesiosis, Borrelia miyamotoi or Powassan (tickborne diseases), Eastern Equine Encephalitis (EEE), West Nile, Jamestown Canyon Virus or Zika (arboviral, mosquito-borne diseases) and any could occur in Allenstown. The Town has swampy areas around its rivers, wetlands and brooks which are prime breeding ground for **mosquitoes**. Large deer herds that roam can carry **deer ticks** in the Town’s heavily forested sections and into State Forests. The **coronavirus** global pandemic is contagious between humans in aerosol /droplet form and is much more contagious and deadly than influenza.

Other wide-spread public health hazards include **water quality degradation** (failing septic systems, flooding, pipes breaking) that could sicken residents using the public water supplies (those serving over 25 people), dug wells or bedrock wells, or could cause aquatic and wildlife deaths. Epidemics could result from water quality issues.

Air quality could decline from ground-level ozone or fine particulates and is monitored by the [NH Department of Environmental Services](#). Air Quality Action Days are announced when monitoring sites report poor breathing air.

Food-borne illnesses could result from improperly handled or cooked food, either at home or at restaurants, cafeterias, or from markets or farms.

There are several types of **PUBLIC HEALTH** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included
PUBLIC HEALTH	PUBLIC HEALTH Infectious Diseases, Air & Water Quality, Biological, Addiction, Arboviral or Tick-borne

Most of these diseases can cause epidemics transmitted through food, water, environment, or personal contact. An epidemic could also result from bioterrorism, whereby an infectious agent is released into a susceptible population. Drug addiction is reportedly high in New Hampshire and is considered a public health hazard. There are many facets public health hazards could take in Allenstown. The Town is an active member of the [Capital Area Public Health Network](#) and has a Point of Dispensing (POD) location at the Bow High School.

Coronavirus

Coronaviruses are a large family of viruses, but only several types are known to commonly cause infections in people, with these common human coronaviruses usually causing mild to moderate respiratory illness (like the common cold). Newer human coronaviruses, like Severe Acute Respiratory Syndrome (SARS), Middle Eastern Respiratory Syndrome (MERS), and the COVID-19 can cause more severe symptoms. The COVID-19 is originally thought to have spread from animals to humans, but now person-to-person spread is occurring. The virus is spread through the air by coughing and sneezing; by close personal contact, such as touching or shaking hands; and by touching an object or surface with the virus on it, then touching mouth, nose, or eyes before washing hands.

The NH Department of Health and Human Services maintains a website with current information, statistics, legislation, Governor’s Executive Orders, and testing locations. Social distancing (staying at least 6 feet away from people outside of one’s household), wearing cloth facial masks, sanitizing hands, monitoring for symptoms, and staying at home when possible are the ways to fight the COVID-19.

Current cases in Merrimack County total **65** cases of COVID-19 as of **June 29, 2020**, with **958** cases in the State as displayed in **Figure 14**. Cumulatively, between **March 1 - June 29, 2020**, **5,760** New Hampshire residents have tested positive for this deadly respiratory virus, with **10-19** people in Allenstown testing positive to date. In the State, **367** people have died to date from COVID-19. These statistics are indicated in **Figure 15** and **Figure 16**. As of **July 6, 2020**, nearly **540,000** people have died globally with nearly **13m** cases in the world. Over **130,000** people in the United States have died, with nearly **3m** cases identified in the country. The pandemic is ongoing as of the writing of this **Plan**.

Figure 14
Current NH COVID-19 Cases Through 06-29-20

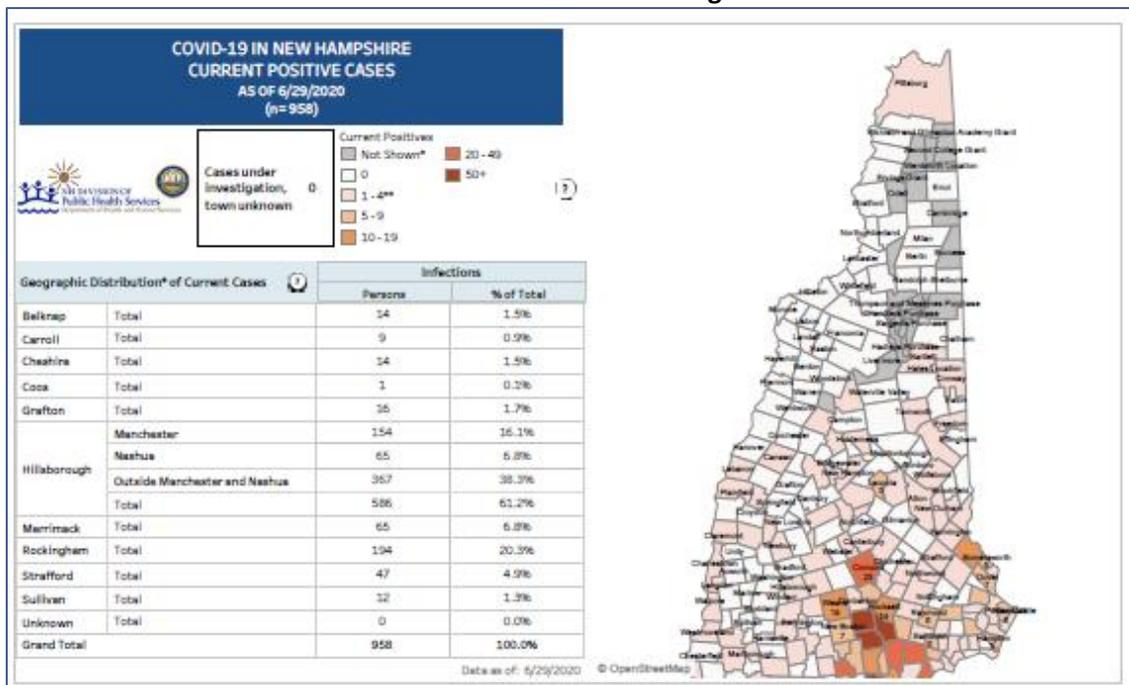


Figure 15
Cumulative NH COVID-19 Statistics Through 06-29-20

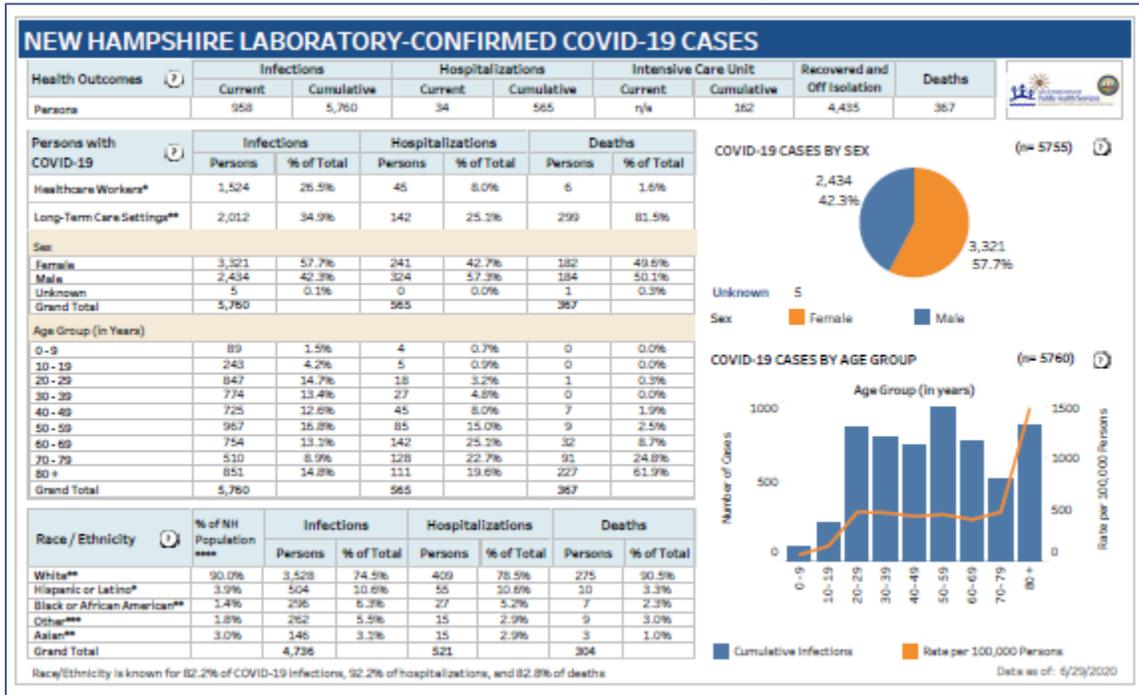
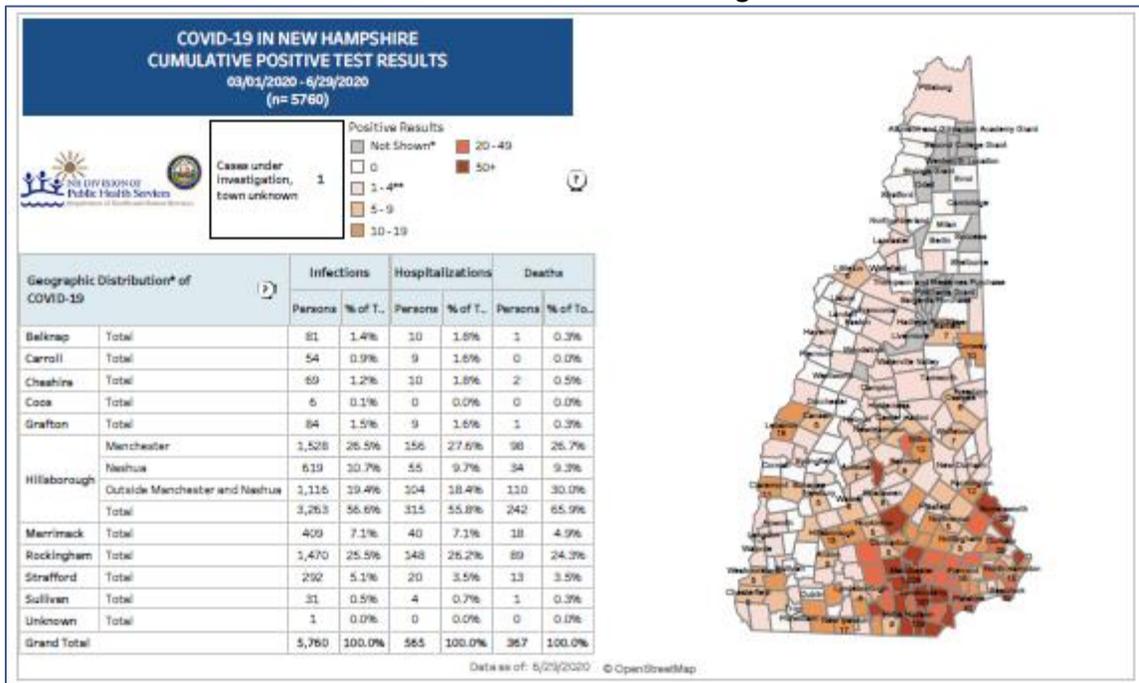


Figure 16
Cumulative NH COVID-19 Cases Through 06-29-20



Sources for Figures: NH Division of Health and Human Services Dashboard <https://www.nh.gov/covid19/>

Influenza

A magnitude scales for **Pandemic Severity Index (PSI) for Influenza** and resulting Community Mitigation Strategies is available from the US Center for Disease Control (US CDC). The [State of New Hampshire Influenza Pandemic Public Health Preparedness and Response Plan 2007](#) included the **PSI for Influenza** classification system and the Community Strategies. As a growing college community, Allenstown may be particularly vulnerable to influenza.

Arboviral

New Hampshire developed guidelines for phased response to the arboviruses (mosquito-borne) Eastern Equine Encephalitis (EEE) and West Nile Virus (WNV) and Jamestown Canyon Virus (JCV). Annually, the [NH DHHS publishes the State of New Hampshire Arboviral Illness Surveillance, Prevention, and Response Plan 2018](#) and its associated [Arboviral Risk Map 2018](#). Risk Categories **1** through **5** determine human illness probability and the recommended response to outbreaks.

The new [State of New Hampshire Zika Virus Response Plan 2018](#) describes Response Phases **0** to **3** and is written like an Emergency Operations Plan Annex for emergency responders to follow.

The NH DHHS and the Capital Area Public Health Network should be notified of all public health emergencies, no matter the type of threat.

Tick-borne

Tick-borne diseases are increasing in New Hampshire, and now include Lyme Disease, Anaplasmosis, Babesiosis, Powassan Virus, and more. These are all carried by the black legged tick in New Hampshire. The State has currently stopped producing annual maps and updates of tick-borne disease locations, but they have other resources available. Check back here at the NH Department of Health and Human Services for future updates: <https://www.dhhs.nh.gov/dphs/cdcs/lyme/index.htm>.

Air and Water Quality

The [NH DES Drinking Water and Groundwater Bureau](#) administers the federal Safe Drinking Water Act and NH statutes to protect public water systems, drinking water sources and groundwater supplies to help maintain safe **water quality** for drinking. NHDES currently is encouraging municipalities to refine the [potable water definition in NH municipal building codes](#).

Water quality hazards such as radon, arsenic, uranium Per- and polyfluoroalkyl substances (PFAS) industrial chemicals, cyanobacteria, coliform bacteria, lead and copper in public water systems, are constantly being tested for and when found, monitored. Once these enter the groundwater (aquifers) system, they are extremely difficult to mitigate. The [Climate Change Resilience Plan 2015](#) describes the NHDES efforts understand how damage to infrastructure from natural hazards such as **Inland Flooding** and spring **snow melt** runoff can occur to create more resilient water systems.

Air quality is a particular danger to the young, elderly people, and those with Chronic Obstructive Pulmonary Diseases (COPD), asthma and other breathing diseases. Ground level ozone and particle pollution are monitored, reported and forecasted for New Hampshire counties. The [Map of Current Air Quality](#) changes daily and is coded to [US EPA’s Air Quality Index](#). Air Quality Action Days are announced when the air quality becomes Moderate, Unhealthy or Hazardous. Transportation such as I-89 and I-93, large local industries such as Merrimack Station and Wheelabrator contribute to Central NH Region air pollution, but New Hampshire is impacted by industries and wildfires across the United States and Canada. Greenhouse gases from industrial pollution and manufacturing contributes to poor **air quality**. The NH DHHS maintains [NH Health WISDOM](#), a database of public health data for air quality, childhood lead, cancer, asthma, tickborne disease, radon, and more.

Many public health threats in New Hampshire have indices, monitoring, and data recording. The NH Department of Health and Human Services (NH DHHS) <https://www.dhhs.nh.gov/> is a good resource to determine what diseases are most prominent.

The overall ratings of **Public Health** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
PUBLIC HEALTH Infectious Diseases, Air & Water Quality, Biological, Addiction, Arboviral, or Tick-borne	4 HIGH	4 HIGH	4 HIGH	4 HIGH	16.0 HIGH

Magnitude of Public Health

The *2018 State Multi-Hazard Mitigation Plan* includes **Infectious Diseases** as a natural hazard. From this resource, the definition and extent of the potential magnitude of public health threats are identified as follows. These disease levels are described at the [US Center for Disease Control](#).

The magnitude and severity of infectious diseases are 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:

✦ Sporadic	Disease that occurs infrequently and irregularly.
✦ Endemic	(Baseline) 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 in the area.
✦ Cluster	The 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 in the population of the area.
✦ Outbreak	The same as epidemic, but over a much smaller geographical area.
✦ Pandemic	An epidemic that has spread over several countries or continents, usually affecting many people.

SOLAR STORMS HAZARDS

Solar storms and space weather is a new addition to the **Hazard Mitigation Plan** and can refer to solar flares, coronal mass ejections, high-speed solar wind, or geomagnetic storms. Solar activity can occur for as short a duration as a few minutes to several hours and create resulting effects on the Earth for weeks. When a geomagnetic storm occurs, high speed solar winds penetrate the Earth’s magnetosphere and can decrease the Earth’s magnetic field for several hours.

There are several types of **SOLAR STORMS** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included
SOLAR STORMS	SOLAR STORMS AND SPACE WEATHER Solar Winds, Geomagnetic Storms (Aurora Borealis), Solar Radiation or Radio Blackout

A significant danger from solar storms is the potential communications and electronics disruption. Satellites, vehicles, radios, airplanes, cell phones, computers, power lines and the internet have the capability for temporary cessation because of solar winds. Solar radiation can become a personal radiation hazard the closer one is to the stratosphere, especially on planes. Satellites, navigation, and electricity are sensitive to geomagnetic storms, which can cause electrical current surges in power lines, interference in the broadcast of radio, television, and telephone signals, and problems with defense communications.

The overall ratings of **Solar Storms** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
SOLAR STORMS AND SPACE WEATHER Solar Winds, Geomagnetic Storms (Aurora Borealis), Solar Radiation or Radio Blackout	3 HIGH	1 LOW	1 LOW	1 LOW	3.0 LOW

Magnitude of Solar Storms

Many in residents in the Central NH region enjoy the aurora borealis viewed from Mount Kearsarge, visible to Allenstown, although when this phenomenon occurs a geomagnetic storm is reaching New Hampshire. Emergency response personnel could monitor these storms from the Oak Hill Fire Tower in Loudon. NOAA’s Space Weather Prediction Service <https://www.swpc.noaa.gov/> provides 3-day outlooks on solar storms. Magnitude scales for **Radio Blackout (R)**, **Geomagnetic Storms (G)** and **Solar Radiation Storms (S)** are provided in **Table 19**.

Table 19
Solar Storms Magnitude Scales

Magnitude Scale	Description	Effect of Space Storm	Average Frequency (1 cycle = 11 years)
GEOMAGNETIC STORM (G)			
G1 Geomagnetic	Minor	<ul style="list-style-type: none"> ✦ 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). 	1700 per cycle (900 days per cycle)
G2 Geomagnetic	Moderate	<ul style="list-style-type: none"> ✦ 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.). 	600 per cycle (360 days per cycle)
G3 Geomagnetic	Strong	<ul style="list-style-type: none"> ✦ 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.). 	200 per cycle (130 days per cycle)
G4 Geomagnetic	Severe	<ul style="list-style-type: none"> ✦ 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.). 	100 per cycle (60 days per cycle)
G5 Geomagnetic	Extreme	<ul style="list-style-type: none"> ✦ 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.). 	4 per cycle (4 days per cycle)
SOLAR RADIATION (S)			
S1 Solar Radiation	Minor	<ul style="list-style-type: none"> ✦ Biological: None. ✦ Satellite operations: None. ✦ Other systems: Minor impacts on HF radio in the polar regions. 	50 per cycle
S2 Solar Radiation	Moderate	<ul style="list-style-type: none"> ✦ Biological: Passengers and crew in high-flying aircraft at high latitudes may be exposed to elevated radiation risk. ✦ Satellite operations: Infrequent single-event upsets possible. ✦ Other systems: Small effects on HF propagation through the polar regions and navigation at polar cap locations possibly affected. 	25 per cycle
S3 Solar Radiation	Strong	<ul style="list-style-type: none"> ✦ 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. 	10 per cycle

Magnitude Scale	Description	Effect of Space Storm	Average Frequency (1 cycle = 11 years)
		<ul style="list-style-type: none"> ✦ Satellite operations: Single-event upsets, noise in imaging systems, and slight reduction of efficiency in solar panel are likely. ✦ Other systems: Degraded HF radio propagation through the polar regions and navigation position errors likely. 	
S4 Solar Radiation	Severe	<ul style="list-style-type: none"> ✦ Biological: Unavoidable radiation hazard to astronauts on EVA; passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk. ✦ 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. ✦ Other systems: Blackout of HF radio communications through the polar regions and increased navigation errors over several days are likely. 	3 per cycle
S5 Solar Radiation	Extreme	<ul style="list-style-type: none"> ✦ 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. ✦ 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. ✦ Other systems: Complete blackout of HF (high frequency) communications possible through the polar regions, and position errors make navigation operations extremely difficult. 	Fewer than 1 per cycle
RADIO BLACKOUT (R)			
R1 Radio Blackouts	Minor	<ul style="list-style-type: none"> ✦ 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. 	2000 per cycle (950 days per cycle)
R2 Radio Blackouts	Moderate	<ul style="list-style-type: none"> ✦ 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. 	350 per cycle (300 days per cycle)
R3 Radio Blackouts	Strong	<ul style="list-style-type: none"> ✦ 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. 	175 per cycle (140 days per cycle)
R4 Radio Blackouts	Severe	<ul style="list-style-type: none"> ✦ 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. 	8 per cycle (8 days per cycle)
R5 Radio Blackouts	Extreme	<ul style="list-style-type: none"> ✦ 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. 	Less than 1 per cycle

Source: <https://www.swpc.noaa.gov/noaa-scales-explanation>

WIND HAZARDS

Severe wind is likely to occur throughout all seasons. Significantly high winds occur especially during hurricanes, tornadoes, downbursts, winter storms, and thunderstorms any time of the year. Falling objects and downed power lines are dangerous risks associated with high winds. Property damage and downed trees are common during high wind occurrences. All utilities, including power lines, are at risk and their damage or destruction would create a hazard to the Town. A communications interruption or failure resulting from damage to telecommunications towers could affect the capabilities of emergency personnel to respond to the hazard event. Often with wind events, precipitation accompanies, increasing the danger of the hazard.

There are several types of **WIND** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included	
WIND	HIGH WIND EVENTS Wind, Thunderstorms, Hail, Downbursts, Tornadoes or Debris	TROPICAL AND POST-TROPICAL CYCLONES Hurricanes, Tropical Storms or Tree Debris

High Wind Events

High wind events can take the form of severe winds, rainstorms, thunderstorms, tornadoes, and downbursts.

The overall ratings of **High Wind Events** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
HIGH WIND EVENTS Wind, Thunderstorms, Hail, Downbursts, Tornadoes or Debris	4 HIGH	2 MEDIUM	2 MEDIUM	2 MEDIUM	8.0 HIGH

Severe Wind, Rainstorms and Thunder Storms

More commonly experienced are **severe wind storms**, **rainstorms** and **thunderstorms**. The severe wind storms occur during all months of the year while the thunder storms tend to erupt during periods of humidity. On occasion, precipitation in the form of rain or hail is experienced during these storms. Rainstorms bring can flooding and high winds. **Thunderstorms** can also bring lightning hazards in addition to high winds and flooding.

Magnitude of Severe Wind and Thunder Storms

Many of the severe wind storms Allenstown experiences are not hurricanes but are severe wind storms or thunderstorms. Thunderstorms are common in New Hampshire, particularly during the hot weather months. The [Thunderstorm Category Criteria](#) scale in **Table 20** measures the magnitude of thunderstorms with their various weather components, including rain, wind, hail, tornado, and lightning.

Table 20
Thunderstorm Criteria Scale

Thunderstorm Categories	Rainfall Inches per hour	Wind Gust max mph	Hail Size in	Tornado Potential Highest Category	Lightning Frequency per 5 minutes	Darkness Aspect	Overall Thunderstorm Impact
T-1 Weak Thunderstorms or Thundershowers	0.03" to 0.10"	< 25 mph	None	None	Few strikes during entire storm	Slightly Dark Sunlight may be seen after storm	1. No damage. 2. Gusty winds at times.
T-2 Moderate Thunderstorms	0.10" to 0.25"	25-40 mph	None	None	Occasional 1 to 10 strikes/ 5 min	Moderately Dark Heavy downpours might cause the need for car headlights	1. Heavy downpours. 2. Occasional lightning. 3. Gusty winds. 4. Very little damage. 5. Small tree branches might break. 6. Lawn furniture moved around. 7. Power outages are possible.
T-3 Heavy Thunderstorms 1. Singular or lines of storms	0.25" to 0.55"	40-57 mph	1/4" to 3/4"	EF0	Occasional to Frequent 10 to 20 strikes/ 5 min	Dark Car headlights used. Visibility low in heavy rains. Cars might pull off the road.	1. Minor damage. 2. Downpours produce some flooding on streets. 3. Frequent lightning could cause house fires. 4. Hail occurs with the downpours. 5. Small tree branches are broken. 6. Shingles are blown off roofs. 7. Power outages are likely.
T-4 Intense Thunderstorms 1. Weaker supercells 2. Bow echoes or lines of storms	0.55" to 1.25"	58-70 mph	1" to 1.5"	EF0 to EF2	Frequent 20 to 30 strikes/ 5 min	Very Dark Car headlights used. Some streetlights turn on.	1. Moderate damage. 2. Heavy rains can cause flooding to streams and roadway flooding occurs. 3. Hail can cause dents on cars and cause crop damage. 4. Tornado damage. 5. Power outages will occur.
T-5 Extreme Thunderstorms 1. Supercells with family of tornadoes 2. Derecho Windstorms	1.25" to 4"	> 70 mph	1.5" to 4"	EF3 to EF5	Frequent to Continuous > 30 strikes/ 5 min	Pitch Black Street lights turn on. House lights might be used.	1. Severe damage to trees and property. Damage is widespread. 2. Flooding rains. 3. Damaging hail. 4. Damaging wind gusts to trees and buildings. 5. Tornadoes EF3 to EF5 or family of tornadoes can occur. Tornadoes cause total devastation. 6. Widespread power outages.

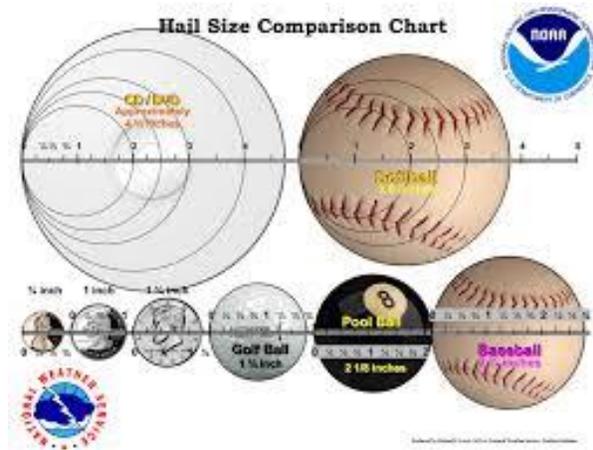
Source: Adapted from Accuweather.com, Henry Margusity, Senior Meteorologist

Incidentally, hail can accompany thunderstorms, hurricanes, or severe wind events. The **Hail Size Descriptions** in **Table 21** describes the potential size of hail during a hurricane or severe storm event, which could occur anywhere in Allenstown. The Table is shown below along with a **Hail Size Comparison Chart** which is a visual representation of some of the relative sizes of hail (note this chart image is not shown to scale). The **Table 21** hail size description and **Figure 17** size comparison scales measure the magnitude of hailstones that could fall on Allenstown during severe storm events.

Table 21
Hail Size Description

Hailstone Diameter (inches)	Size Description
< 1/4	bb
1/4	Pea Size
1/2	Mothball Size
3/4	Penny Size
7/8	Nickel Size
Severe Criteria 1	Quarter Size
1 1/4	Half Dollar Size
1 1/2	Walnut or Ping Pong Ball
1 3/4	Golf Ball Size
2	Hen Egg Size
2 1/2	Tennis Ball Size
2 3/4	Baseball Size
3	Teacup Size
3 4/5	Softball Size
4	Grapefruit Size

Figure 17
Visual Hail Size Comparison



Sources: National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS)

Tornadoes

Significantly high winds that occur especially during hurricanes, winter storms, and thunderstorms, but can also exist independent of other storms. Falling objects and downed power lines are dangerous risks associated with high winds. In addition, property damage and downed trees are common during high wind occurrences.

A tornado is a violent windstorm characterized by a twisting, funnel shaped cloud. They develop when cool air overrides a layer of warm air, causing the warm air to rise rapidly. The atmospheric conditions required for the formation of a tornado include great thermal instability, high humidity, and the convergence of warm, moist air at low levels with cooler, drier air aloft. Most tornadoes remain suspended in the atmosphere, but if they touch down, they become a force of destruction.

Tornadoes produce the most violent winds on earth, at speeds of 280 mph or more. In addition, tornadoes can travel at a forward speed of up to 70 mph. Damage paths can be in excess of one-mile wide and 50 miles long. Violent winds and debris slamming into buildings cause the most structural damage.

Magnitude of Tornadoes

A tornado occurring in Allenstown would cause considerable damage. Roofs could be torn off frame houses; dams could be damaged; large trees snapped or uprooted; and light object missiles would be generated by an EF-2 Tornado. Tornado magnitude is measured by the [Enhanced Fujita \(EF\) Scale](#), a 2007 update from the original F-scale (Fujita Scale), which are provided in **Table 22**.

Table 22

Enhanced Fujita (EF) Scale

Enhanced Fujita (EF) Scale 2007 – Present	Old Fujita (F) Scale <i>replaced</i>
F Number with 3-Second Gust mph	F Number with 3-Second Gust mph
EF0 65-85 mph	F0 45-78 mph
EF1 86-110 mph	F1 79-117 mph
EF2 111-135 mph	F2 118-161 mph
EF3 136-165 mph	F3 162-209 mph
EF4 166-200 mph	F4 210-261 mph
EF5 over 200 mph	F5 262-317 mph

Source: National Oceanic and Atmospheric Administration (NOAA) Storm Prediction Center

The entire Town is forested and Class V and Class VI gravel roads run the risk of isolation through **debris impacted infrastructure** (trees down on roads and powerlines) after a **tornado**, resulting in **power failure** with little emergency access until the way is cleared. Wooded and forested sections of Town are vulnerable to tree fall. One-egress roads and remote neighborhoods are especially at risk to the impacts of high wind events, including tornadoes.

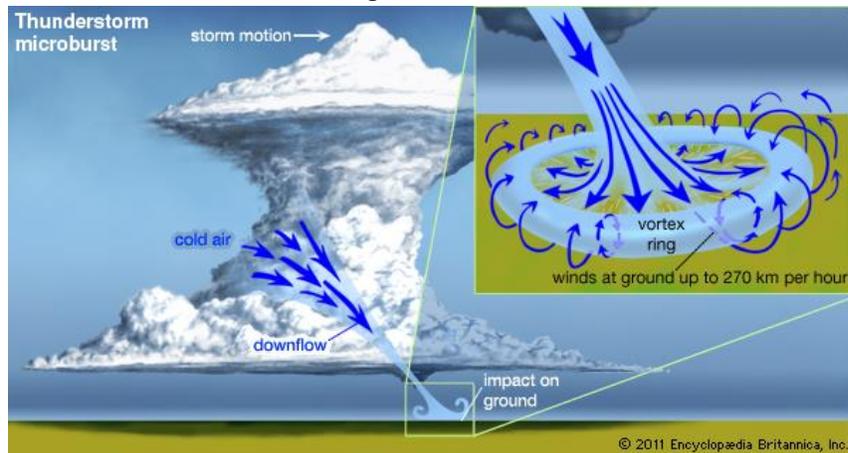
Downbursts

A downburst is a severe localized wind blasting down from a thunderstorm. These "straight line" winds are distinguishable from tornadic activity by the pattern of destruction and debris. Downbursts are capable of producing winds of up to **175 mph** and are life threatening. Downbursts are quite common during Central NH’s hot weather months. Microbursts and macrobursts have been known to occur here in the region.

Downbursts of both sizes can produce strong wind shear, large changes in wind speed and direction over a short distance. Trees are regularly snapped off in a singular direction by a macroburst or microburst. Downbursts typically originate from thunderstorm clouds, with air moving in a downward motion until it hits the ground level and then spreads outward in all directions. In fact, the wind pattern of a downburst is the opposite of a tornado’s wind pattern, shown in **Figure 18**.

Figure 18

Microburst Forming from Thunderstorm Clouds



Source: Internet (Encyclopedia Britannica)

Magnitude of Downbursts

Downburst magnitude is rated on the same NOAA **Enhanced Fujita (EF)** scale as tornadoes. In addition, downbursts fall into two categories:

- microburst, which covers an area less than **2.5 miles** in diameter and
- macroburst, which covers an area equal to or greater than **2.5 miles** in diameter.

Debris Impacted Infrastructure

The immediate result of severe wind events becomes another hazard, **debris impacted infrastructure**. The infrastructure could include roads, culverts, powerlines, utility lines, water towers, bridges or dams. Infrastructure could also be the natural infrastructure, such as rivers, ponds, lakes and brooks.

Typically, trees and woody material and debris are blown down from **severe wind events** causing **debris impacted infrastructure**. Watercourses, including the rivers, brooks, intermittent streams, and ditches alongside roads, and stationary waterbodies such as lakes, ponds, wetlands, swamps, bogs, and wet meadows receive trees, leafy material and other debris and can then **flood** their banks, **overflow culverts**, or cause **road washouts** during certain conditions. Trees and limbs falling on power lines, substations, or communications towers cause **power failure** and **live wire danger**. Trees and limbs falling onto roadways can **road blockages** and **transportation crashes**. Debris from wind could include roofs, siding, shingles, and more from buildings which can cause potential human injury as well as **road blockages**, **power failure** and **live wire danger**.

These features inventoried in **APPENDIX A Critical and Community Vulnerability Assessment** are those which should be watched carefully before and after storms and should be checked and maintained regularly to reduce the risk of significant **debris impacted infrastructure** events. **Erosion** along the rivers can cause scouring to infrastructure such as bridge abutments, and woody debris can flow downstream to become hazards to the landowners who have shoreland frontage.

Most dams and bridges could experience **debris impacted infrastructure**. Debris generated during storms and winds could continue for many years. This woody material debris is a concern during and after storm events. For emergency removal, the Town could contact the NH Department of Environmental Services and remove the trees right away, obtaining a “retroactive permit” during emergency situations.

Bridges vulnerable to debris dislodged during storm events may be eligible for NH Bridge Aid funding to help rehabilitate these bridges. All outlying roads are susceptible to tree fall and downed powerlines from **severe wind events**.

Magnitude of Debris Impacted Infrastructure

There is no standardized scientific scale for debris impacted infrastructure. However, the [US Federal Highway Administration](#) rates the potential for river/brook debris delivery to the infrastructure site and for river/brook accumulation across an infrastructure span. These can be utilized for hydrologic debris impacted infrastructure measurements.

Tropical and Post-Tropical Cyclones

Hurricane season begins on June 1 and continues through the end of November. August and September are the most active hurricane months. It is not uncommon for New England to be impacted by a hurricane more than once in a season. River and flooding due to heavy rains is a risk to Allenstown during hurricanes. Numerous hurricane events in recent history have occurred in the State, region, and the local area surrounding Allenstown that may have also had an impact on the Town.

The overall ratings of **Tropical and Post Tropical Cyclones** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
TROPICAL AND POST-TROPICAL CYCLONES Hurricanes, Tropical Storms or Tree Debris	3 HIGH	1 LOW	1 LOW	1 LOW	3.0 LOW

A hurricane is a tropical cyclone in which winds reach speeds of **74** miles per hour or more and blow in a large spiral around a relatively calm center. Flooding is often caused from the coastal storm surge of the ocean and torrential rains, both of which accompany the storm. The floods and high winds can result in loss of life and property. Hurricanes, high wind and rain events, and thunderstorms can damage Allenstown just like any other community in Central New Hampshire. Forested lands and trees along the transportation infrastructure can be blown down across roads; the above-ground powerlines along the sides of the road can be snapped either by trees or high winds and fall onto the roads or nearby objects; and runoff flooding and stream/brook and river flooding can occur because of hurricanes and severe storms.

Magnitude of Hurricanes and Tropical Storms

The [Saffir-Simpson Hurricane Wind Scale](#) measures the magnitude of wind event on a **1** through **5** rating basis. The definitions of Category **1** through **5**'s sustained wind miles per hour and their respective threats to people, different types of homes, shopping centers, trees, power lines, water, and more are displayed in **Table 23**.

Table 23
Saffir-Simpson Hurricane Wind Scale

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	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	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.
3 <i>major</i>	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 <i>major</i>	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 <i>major</i>	157 mph or higher	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.

Source: National Oceanic and Atmospheric Administration (NOAA)

WINTER HAZARDS

Ice and snow events typically occur during the winter months and can cause loss of life, property damage, and tree damage. Severe winter storms, including Nor’easters, typically occur during January and February. However, winter storms can occur from late September through late May. Numerous severe winter events in recent history have occurred in the State, region, and the local area surrounding Allenstown that may have also had an impact on the Town. Unlike the relatively infrequent hurricane, New Hampshire generally experiences at least several Nor’easters each year with varying degrees of severity. They form along the East coast as warm air from the Atlantic Ocean collides with cold arctic winds to the north and west. A hurricane, the nor'easter's warm-weather counterpart, differs in that it has a narrow range of strong winds around a warm, low-pressure core—nor'easter winds are more dispersed around a cold, low-pressure center.

There are several types of **WINTER** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included
WINTER	SEVERE WINTER WEATHER Snow, Ice, Blizzard or Nor’Easter

The overall ratings of **Severe Winter Weather** in Allenstown from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
SEVERE WINTER WEATHER Snow, Ice, Blizzard or Nor’Easter	4 HIGH	2 MEDIUM	2 MEDIUM	2 MEDIUM	8.0 HIGH

Severe Winter Storms

A winter storm can range from moderate snow to blizzard conditions. Blizzard conditions are considered blinding, wind-driven snow over 35 mph that lasts several days. A severe winter storm deposits four or more inches of snow during a 12-hour period or six inches of snow during a 24-hour period.

An ice storm involves rain, which freezes upon impact. Ice coating at least one-fourth inch in thickness is heavy enough to damage trees, overhead wires, and similar objects. Ice storms also often produce widespread power outages.

A Nor’easter is a large weather system traveling from South to North, passing along or near the seacoast. As the storm approaches New England and its intensity becomes increasingly apparent, the resulting counterclockwise cyclonic winds impact the coast and inland areas from a Northeasterly direction. In the winter months, oftentimes blizzard conditions accompany these events. The added impact of the masses

of snow and/or ice upon infrastructure often affects transportation and the delivery of goods and services for extended periods.

Extreme cold temperatures are associated with continental Arctic air masses. The actual temperatures reached depend specifically on the nature of the cold air mass and where it originated. In general, those from the Arctic regions are the coldest. Though cold temperatures are dangerous, they become more so in conjunction with strong winds. The combination produces a wind-chill factor – heat loss measured in Watts per meter squared (Wm^{-2}). A wind-chill factor of $1400 Wm^{-2}$ is equivalent to a temperature of -40 degrees F. At $2700 Wm^{-2}$, exposed flesh freezes within a half-minute.

Recent Severe Winter Weather in New Hampshire

In March **2018**, New Hampshire was hit by 4 cyclonic Nor'easters in a row over a 2- week period because of the changing climate, in a recurring snow-and-melt cycle. These storms have the potential to inflict more damage than many hurricanes because the high storm surge and high winds can last from 12 hours to 3 days, while the duration of hurricanes ranges from 6 to 12 hours.

- March 2-3, 2018 – Seacoast flooding, Concord wind gusts 36 mph, about 1"
- March 7-8, 2018 – Concord 11"
- March 12-14, 2018 – Concord 11", Epsom 23"
- March 22, 2018 – Concord 3"

All winter storms make walking and driving extremely dangerous. The elderly and very young are at high risk during winter storms and may be affected by hypothermia and isolation. During winter storms, there is an increased risk of **fire** because people experience **power failure** and use candles, portable gas stoves, generators, and flammable sources of heat and light.

Magnitude of Severe Winter Weather

Severe Winter Weather magnitude in can be measured for, ice accumulation and snowfall using several different scales and indices including the Sperry-Piltz Ice Accumulation Index (SPIA) and NCDRC Regional Snowfall Index (RSI) for the Northeast.

Table 24 displays the [Sperry-Piltz Ice Accumulation Index \(SPIA\)](#) which measure the magnitude of ice damage from severe winter weather. The index is compared to the tornado and hurricane scales note above. Storm total rainfall converted to ice accumulation, wind, and temperatures during the storm period are used to develop SPIA.

Table 24
Sperry-Piltz Ice Accumulation Index (SPIA)

Ice Damage Index	Average NWS Ice Amount in Inches	Wind Speed mph	Ice Damage and Impact Descriptions
0	< 0.25	< 15	Minimal risk of damage to exposed utility systems. No alerts or advisories needed for crews, few outages.
1	0.10 to 0.25	15 to 25	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges might become slick and hazardous.
	0.25 to 0.50	> 15	
2	0.10 to 0.25	25-35	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions might be extremely hazardous due to ice accumulation.
	0.25 to 0.50	15-25	
	0.50 to 0.75	< 15	
3	0.10 to 0.25	> = 35	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1-5 days. Warming sites needed.
	0.25 to 0.50	25 - 35	
	0.50 to 0.75	15 - 25	
	0.75 to 1.00	< 15	
4	0.25 to 0.50	> = 35	Prolonged and widespread utility interruptions with extensive damage to main distribution feeder lines and some high voltage transmission lines/structures. Outages lasting 5-10 days. Shelters or warming sites needed.
	0.50 to 0.75	25 - 35	
	0.75 to 1.00	15 - 25	
	1.00 to 1.50	< 15	
5	0.50 to 0.75	> = 35	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.
	0.75 to 1.00	> = 25	
	1.00 to 1.50	> = 15	
	> 1.50	Any	

Source: www.spia-index.com (adapted by CNHRPC)

The [Regional Snowfall Index \(RSI\) for the Northeast](#) is used to categorize significant snowstorms. The RSI ranks snowstorm effects on a scale from **1** to **5**, similar to the Enhanced Fujita Scale for tornadoes or the Saffir-Simpson Hurricane Wind Scale for hurricanes. The RSI differs from these other indices because it includes population, a social component. The RSI is based on the spatial extent of the storm, the amount of snowfall, and the juxtaposition of these elements with population. The Regional Snowfall Index (RSI) displayed in **Table 25** is a measurement of the magnitude of a snowstorm in the Northeast, which includes New Hampshire.

Table 25
Regional Snowfall Index (RSI) for the Northeast

Storm Category	RSI Value	Snow Description
1	1–3	Notable
2	3–6	Significant
3	6–10	Major
4	10–18	Crippling
5	18.0+	Extreme

Source: www.ncdc.noaa.gov/snow-and-ice/rsi/ (adapted by CNHRPC)

TECHNOLOGICAL HAZARDS

Many technological hazards could be construed as secondary hazards, as they often occur as the result of a primary (natural) hazard. For example, **power failure** or **transportation accidents** (technological) can result from severe winter weather (natural). Scientific measures of magnitude are generally not available for individual technological hazards, but they are provided for **debris impacted infrastructure** and **dam failure** which are closely related to **flooding** and for **hazardous materials spills** and **radiological incident**.

One of the technological hazards has been rated along with the natural hazards within the **Hazard Identification and Risk Assessment**. There are several specific hazards of the **TECHNOLOGICAL** hazard category examined in the **HIRA**:

Main Hazard Category	Specific Hazards Included			
TECHNOLOGICAL	AGING INFRASTRUCTURE Bridges, Culverts, Roads, Pipes or Underground Lines	DAM FAILURE Water Overtop, Breach, Beaver, etc.	FIRE Vehicle, Structure, Arson or Conflagration	HAZARDOUS MATERIALS Haz Mat Spills, Brownfields or Trucking
	LONG TERM UTILITY OUTAGE Power, Water, Sewer, Gas, Internet, Communications or Live Wire Danger			

Magnitude of Technological Events

The magnitudes of technological hazards are not addressed in this Plan. Technological events could have rating systems within their sphere of influence, but these are outside the scope of this **Hazard Mitigation Plan**. More information is provided for reference as needed for some of these technological hazards.

Aging Infrastructure

Infrastructure of a community includes its roads, sidewalks, bridges, culverts, water lines, sewer lines. Those components such as electric lines, telecommunications towers and dams are not considered in this section because they are not usually municipal-owned. The State of New Hampshire maintains responsibility for NH 28 and US 3 in Allenstown. The Town is responsible for miles of local Class V gravel and paved roadways and sidewalks, as well as the bridges. Communities in New Hampshire are faced with the dilemma of poor conditioned infrastructure with not enough funding to pay for rehabilitation, even with grants from the NH Department of Transportation (NHDOT) for roads and bridges and revolving loans from the NH Department of Environmental Services for water infrastructure.

Aging infrastructure creates hazards to people, through **transportation crashes**, **public health water quality crisis**, weakened bridges during **flooding** events, undersized culverts unable to accommodate storm water, and more.

Bridges, Culverts, Roads

Debris impacted infrastructure regularly occurs along the Central NH Region's rivers and streams and also along roadways. Rivers or brooks flowing under bridges or through culverts could get clogged or damaged by woody material or leaves in the watercourse. Culvert maintenance is particularly important before and during heavy rainfall and floods. Tree limbs falling onto power lines and onto roadways, disrupting both electricity and the roadway, occur during wind or winter storms.

Many of the local Town roads in Allenstown are constructed using ditching instead of storm drains. Most of the Town maintained roads are gravel, enabling easier washout. Bridges and dams are described in the **APPENDIX A Critical and Community Vulnerability Assessment**. In **APPENDIX F Allenstown Roads Data** is a list of data about each of the Town's roads, including length, classification, surface type, and number of homes.

Fire (Arson, Vehicle, Structure)

Fires which are not natural hazards are often associated with vehicles, structures or hazardous materials spills, or sometimes an explosion. These are considered **Technological Hazards**. Arson, the deliberate setting of a fire as an act of sabotage or mischief, is a **Human Hazard** but is contained in this section for convenience. No magnitude scales were defined for these types of non-natural fires.

Hazardous Materials

Hazardous materials and hazardous wastes contain properties that make them potentially dangerous or harmful to humans. They can be liquids, solids, contained gases or sludge. Hazardous wastes can be the by-product of manufacturing, as well as discarded commercial products. Most households contain cleaning agents that become hazardous waste when disposed of improperly. Chemicals have numerous

benefits but can also cause hazards during their production, storage, transportation, use or disposal. Hazardous materials can have adverse health related effects and may even cause death in certain cases. In addition, hazardous materials may damage homes, businesses and other property, as well as natural ecosystems. Chemical accidents in plants or chemical spills during transportation may often release hazardous chemicals.

The risk from hazardous materials spills or releases into groundwater is present if consumers and homeowners make irresponsible decisions regarding the disposal of household chemicals. These household chemicals can contaminate drinking water in wells and cause damage to various ecosystems. Most people contaminate without being aware that they are doing so. Further education may be needed to reduce hazardous waste contamination. The necessity for holding municipal Household Hazard Waste (HHW) collection days is crucial to helping to maintain a healthy environmental for Allenstown's residents.

Long Term Utility Outage

Utilities systems exist everywhere and are subject to damage from construction work, accidents and extreme weather. Many utilities are protected by back-up generators to prevent failure, whatever the cause may be. Nuclear power plants produce roughly 20% of the nation's power, they exist in nearly all states and 3 million Americans live within 10 miles of a nuclear power plant. The greatest risk to life resulting from a nuclear power plant failure is radiation contamination resulting from radiation release into the environment. People in the immediate vicinity are at greatest risk of radiation contamination. Another common source of energy, coal, can be potentially hazardous because coal power plants emit chemicals such as mercury and sulfur dioxide.

The service-providing businesses in Town (gas station, bank, fast food, convenience, etc) rely on electricity provided by powerlines, and in many cases, enterprise comes to a standstill during disaster events. Aging, vulnerable populations are at greatest risk in rural Allenstown from the effects of **power/utility failure** and **communications failure**. A few individuals in Town require oxygen and power failure and the likely accompanying communications systems failure would comprise the most vulnerable populations. The Fire, Rescue and Police Departments conduct welfare checks for those residents many known to be in need.

As a rule of thumb, all residents should be able to shelter in place in their homes for up to **3** days or **72** hours, gathering needed supplies and water ahead of time. **Power failure** can cause inconvenience, loss of economy, extra Town expenditures and staffing, and could restrict emergency response because the typical power failure is a secondary hazard caused by natural weather event. This problem is applicable to the **High Wind Events** and **Winter Weather** hazard events described earlier as well as **Debris Impacted Infrastructure** and **Transportation Crash** hazard events in the following sections.

Electricity

New Hampshire contains nuclear, coal and natural gas power plants. There is only one (1) coal power plant in New Hampshire, the Merrimack Station in Bow, currently owned by Granite Shore Power, formerly owned by Eversource and Public Service of New Hampshire. As of 2018, the Merrimack Station is partially decommissioned, only operating when there is a need for additional kilowatt hours in the area. The Station requires 24 hours to become operational, then ceases firing when there is no additional electrical demand. The Merrimack Station is the largest coal-fired electrical generating station and when it was operating around the clock, supplied power to 190,000 households. Coal fuel generated only 7% of the State’s electricity in 2016. Much of the State’s electricity (56% in 2016) is provided by the Seabrook nuclear power reactor.

Granite Shore Power is located across the Merrimack River from Allenstown.

In the harsh environment that New Hampshire residents are subjected to, power and utility failures on an isolated level are commonplace. During nearly every heavy snow storm, ice storm, or other severe weather event, someone, somewhere, loses power and/or other utilities. Allenstown is served by Eversource.

Communications Systems Failure

Communications systems, like utilities, are found everywhere and are subject to damage by construction work, severe weather and traffic accidents. Because communications systems depend on electricity, any power outage may cause an interruption in a communications system. In addition, many communications systems have buried cables which are particularly vulnerable to being cut. Communications systems interruptions can negatively impact a region, town, neighborhood or household in the case of a natural disaster, catastrophe or other emergency. Power lines often share cables and poles with communications systems. When power fails, cable, telephone and radio services frequently fail as well.

Telecommunications towers often carry local, regional, county, state and sometimes federal antennas that relay emergency communications. In addition, personal cellular communications are often co-located at the same tower. When a major communications tower is out of service, its impacts are widespread. In some Central NH Regional municipalities, the existing towers do not provide coverage to the entire community and create dead zones. This is particularly dangerous to people without landlines or when emergency services are necessary.

HUMAN HAZARDS

Events of human nature include terrorism (ecological, cyber and chemical), sabotage/vandalism, hostage situations, and civil unrest. These are often “behind the scenes” hazards that local Police Departments handle on a regular basis. These events are all caused by direct human action. Mass casualty incidents, caused by any number of hazards, would also be addressed as a human hazard. Cyber events, while a technological hazard, are considered another type of artificial, human-developed hazard.

There are several types of **HUMAN** hazards examined in the **Hazard Identification and Risk Assessment**:

Main Hazard Category	Specific Hazards Included			
HUMAN	TRANSPORTATION CRASH Vehicle, Airplane, Helicopter, Rail, Interstate, Pedestrian or Bicycle	MASS CASUALTY INCIDENT As a result of any hazard event	TERRORISM/ VIOLENCE Active Shooter, Hostage, Public Harm, Civil Disturbance/Unrest, Politically Motivated Attacks, Incendiary Devices, Sabotage or Vandalism	CYBER EVENT Municipal Computer Systems Attack, Cloud Data Breach, Identity Theft, Phishing, Ransomware or Virus

Human Hazards are examined by descriptions of the types of hazards and in the **Potential Future Hazards**. Scientific measures of magnitude are not available for individual human hazards.

Transportation Crashes

Automobile crashes could occur on any roadway in the Central NH region. A major accident would have the greatest impact for travelers on Interstates 93, 393 or 89; on US Route 202, US Route 4/202 or US Route 3; on NH Route 3A, NH Route 9, NH Route 13, NH Route 28, NH Route 31 NH Route 49, NH Route 77, NH 103, NH Route 106, NH Route 107, NH 114, NH Route 127, NH Route 129 and NH Route 132 or on their bypasses, interchanges, Exits and on/off ramps. These are high speed corridors with high traffic volumes. Many local roads allow for residential and commuter vehicles at low speeds. A vehicle-pedestrian or vehicle-bicycle crash has a greater casualty rate on the local and state roads as different road users use the same limited space.

In the region, the railroad lines along the Merrimack River create the potential for a (railcar) transportation accident. Trains could potentially derail, causing injuries or fatalities and hazardous materials spills. In the Central NH Region, the Concord-Lincoln Line runs 73 miles between Concord and Lincoln. The New Hampshire Maine Line runs between Concord, Nashua and Lowell, MA. Several communities through which these lines travel have expressed the concern about hazardous material spills due to transportation crashes or sabotage. Concord Municipal Airport is the major airport in the Central NH Region but Manchester-Boston Regional Airport (MHT) can be accessed via NH 28 or US 3 in about 30

minutes. Air traffic can also be hazardous to the region's citizens. Small local airstrips and increase the chances for a possible aviation crash, especially in the higher elevations around Mount Kearsarge.

Mass Casualty Incident

Mass casualty is the situation for which local, regional, state and national personnel train for treating large numbers of people who are injured from any natural, human or technological disaster. The Central NH Region has many partners for mass casualty training and preparation. [Capital Area Public Health Network](#) (CAPHN) works to promote, protect, and improve the health and well-being of communities within the Capital Area of New Hampshire through the proactive, coordinated, and comprehensive delivery of essential public health services. These include substance misuse prevention, suicide prevention, public health emergency preparedness, vaccinations, and more. The staff works with area emergency management directors. Across New Hampshire, there are **13** regional public health networks.

Concord Hospital is a **295**-licensed beds (plus **238** staffed beds) facility and the only trauma center in the Central NH Region. New London Hospital (**25** critical access beds, **58** long term care beds) and Franklin Regional Hospital (**25** critical access beds) are smaller hospitals in Merrimack County. In Laconia, the Lakes Region General Hospital (**137** beds) has a trauma center. The Dartmouth-Hitchcock Medical Center (**396** beds) in Lebanon has a trauma center and is New Hampshire's only and teaching hospital. Mass casualty preparedness is a situation regularly trained for by hospital employees.

The [New Hampshire Hospital Association](#) provides leadership through advocacy, education and information in support of its member hospitals and health care delivery systems. The NHHA has an encourages its members to develop hospital emergency plans and staffs an Emergency Preparedness Coordinator position to plan for such events. **Mass casualties** of the magnitude that can be expected with a disaster related to terrorism or other incidents demand an expanded role for hospitals. They must be supported by their communities as they attempt to protect the facility, its patients and personnel while attending to the victims of a disaster. The NHHA has a mutual aid network designed to work together during times of crisis.

Terrorism/Violence

The use of force or violence against people to create fear, cause physical harm and/or intimidation or for reasons of ransom. Terrorists often make threats to create fear and change public opinion. Cyber terrorism consists of hackers who threaten the economy by attacking the intricate computer infrastructure, affecting business and communication. Biological and chemical terrorism refers to those infectious microbes or toxins used to produce illness or death in people or animals. Large groups or close quarters of people can make bioterrorism more effective. Terrorists may contaminate food or water, thus threatening an unprotected civilian population. Eco-terrorism refers to the destruction of property by persons who are generally opposed to the destruction of the environment or to make a visible argument against forms of technology that may be destructive to the environment.

Sabotage/Vandalism

Sabotage is a deliberate action aimed at someone or some institution to weaken that person’s or institution’s integrity and reputation through subversion, destruction, obstruction, or disruption. Sabotage may occur in war, a workplace, in the natural environment, as a crime, in politics or as a direct attack against an individual.

Hostage Situation

A **hostage situation** is an incident where innocent civilian(s) are held by someone or some group of persons demanding something from third party not related to the individual(s) being held hostage to ensure the fulfillment of certain terms. Often, a hostage situation results from a domestic dispute.

Civil Disturbance/Public Unrest

This hazard refers to types of disturbances that are caused by a group of people, often in protest against major socio-political problems including sit-ins or protests against wars and any general and public expression of outrage against a political establishment or policy. Many instances of **civil disturbance** and public unrest are quelled by a use of force from police. Participants may be victims of personal injury in severe cases. The most probable locations of larger civil disturbance and/or protest in New Hampshire are at the State House in Concord and at the universities and colleges. They have also occurred at political locations, such as feminist health centers or political party headquarters.

Bioterrorism

Biological hazards can also be caused by bioterrorism, the deliberate release of viruses, bacteria, or other germs (agents) used to cause illness or death in people, animals, or plants. The US Center for Disease Control (US CDC) has categorized the bioterrorism agents into 3 priority Categories **A, B or C**, indicating how easily they can be spread and the severity of illness or death they cause. The bioterrorism Categories measure the risk of transmission of infectious organisms, germs, or pathogens but does not include chemicals.

Cyber Event

While **cyber events** could be considered technological hazards, they are deliberately initiated by a person or group of people, thus falling into the human hazard category. Cyberattacks are malicious attempts to access or damage a computer system. These events are socially- or politically- motivated attacks carried out primarily through the Internet. Cyberattacks target the general public or national and corporate organizations and are carried out through the spread of malicious programs (viruses), unauthorized web access, fake websites, and other means of stealing personal or institutional information from targets of attacks, causing far-reaching damage. **Cyberattacks** are geared toward organizations, services, and individuals to obtain private, technical, and institutional information, and other intellectual assets for the purpose of vandalism or monetary gain.

As computer crimes, they can cause serious consequences to those against which this threat is used. The cyber events range from more harmless such as website hacking, to personally harmful such as identity theft to more dangerous, such as those that cripple critical infrastructure. Cyber events cause harm to people or property and can generate fear. Much of the infrastructure upon which the State of NH relies is automated and could be subject to cyberattacks. These could include the government, military, communications systems, utilities, fuel, electrical systems, nuclear power plants, transportation systems, financial systems, emergency medical services and more.

On a municipal level, computer systems data storage, transmission of emergency communications, daily operations and monitoring or financial information, could be disrupted or be redirected to the perpetrators. Information Technology (IT) **cybersecurity** is paramount, as is employee training, to reduce the incidence of malware, phishing, SQL injection, man-in-the-middle attack, zero-day exploit, and other techniques to gain access to systems. With our society's increasing reliance on electronic devices and computers, Allenstown's local government and residents should be prepared to address **cyber events** in the various and growing forms they take.

Potential Future Hazards

After the inventory of hazards types and past hazards in Town, a list of hazards which currently exist or need to be monitored in Allenstown has been completed along with potential future hazards that could occur in the same or other areas. This unique listing of **Potential Future Hazards** was compiled so the Town can be aware of areas that might need to be watched for recurring hazardous problems or that may experience some of these hazards for the first time. The listing was developed by knowledge of the Hazard Mitigation Committee and past experiences of hazards. Past locations of hazard events, where they exist for each hazard, are listed under the individual hazard narratives in the previous section. The existing and susceptible hazard locations are taken from the **Hazard Identification and Risk Assessment (HIRA)**. With this existing and potential future knowledge listed side by side, it becomes easier for a community to plan mitigation measures for the most prominent hazard events in Town.

Potential future hazards in **Table 26** indicate locations in the community where a hazard event could occur and how that hazard could impact the Town. The **Overall Risk** score between **1-16** for the **15** rated hazards from the **HIRA** is provided to understand the scale of risk to Allenstown from all natural hazards. Also from the **HIRA** is whether or not each hazard event occurred within the last **5** years in Allenstown, indicated by either ***Events(s) Within Last 5 Years*** or ***NO Event(s) Within Last 5 Years*** beneath each *Hazard Category*. The magnitude or extent scale where available from previous **4 HAZARD RISK ASSESSMENT** descriptions enable possible effect measurement of the noted Allenstown locations.

Table 26
Potential Future Hazards

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
<p>DAM FAILURE Water Overtop, Breach, Beaver, etc. *NO Event(s) Within Last 5 Years*</p>	<p>1.0 LOW</p>	<ul style="list-style-type: none"> There are few constructed dams in Allenstown with potential for future flooding damage if breached or failed. The four Low (L) Hazard dams, Bear Hill Pond (Boat Meadow Brook), Catamount Pond Dam (Bear Brook), Hall Mountain marsh (Bear Brook), and Hayes Marsh Dam (Catamount Brook), may be unlikely to flood but still have the potential during a strong flooding event. Several Non-Menace dams are located on Boat Meadow Brook and Bear Brook. No significant dam breach issues have occurred in the community or upstream. A potential future breach of the High (H) Hazard Garvins Falls Dam (Merrimack River), (H) Pembroke Dam (Suncook River), Significant (S) Hazard Webster Mill Dam (Suncook River), or Low (L) Hazard China Mill Dam (Suncook River) occur, downstream or inundation flooding is expected to occur in the Downtown (Suncook Village) area. Beaver dams carry a high probability of flooding and potential for breakage. Beaver dams are located throughout the Town and depending on size and location, could cause significant damage to roads if the natural dams breach. 	<p>◆ NHDES Dam Classifications</p>
<p>DROUGHT *Events(s) Within Last 5 Years*</p>	<p>2.0 LOW</p>	<ul style="list-style-type: none"> During future drought events, agricultural farms, orchards, nurseries tree farms run the risk of high damage from droughts which also brings economic consequences. Some farms are homestead farms which provide food and income for owners. Crop and livestock loss are consequences of droughts in these locations. In Allenstown, agricultural operations include multiple farms, orchards, nurseries, livestock, including Bear Brook Stables (Horses), Edelweiss Farm (horse stable), Fiddler's Farm & Construction (Poultry, Eggs, Produce), McNamara Hay Fields. When hayfields die off, livestock animals in Town cannot easily be locally fed. See APPENDIX A for the list. In future drought conditions, private homeowner wells will continue to go dry. When this occurs, the owners typically have a new well dug. Town fire ponds and dry hydrants are found throughout the community, but over time they may dry up from drought. The Fire Department draws from these fire ponds around Town, but low conditions will make this more difficult. The Suncook River will have to be used as the primary source for firefighting. In the Downtown area/ Suncook Village, users of the Pembroke Water Works municipal water supply might need to follow voluntary or required water restrictions to conserve the supply. The reserve water tanks might be used in severe drought conditions, and another active water well might be necessary in the future. 	<p>◆ US Drought (D-scale) Monitor Intensity Scale ◆ Palmer Drought Index (PHDI)</p>
<p>EARTHQUAKE *Events(s) Within Last 5 Years*</p>	<p>4.0 LOW</p>	<ul style="list-style-type: none"> Since Allenstown is located within an active seismic region, residents are expected to feel future earthquakes, but damages should be minor, if any. Locations to watch include: the historic Downtown / Suncook Village, areas with underground utilities, densely populated buildings or 	<p>◆ Richter Magnitude Scale ◆ Modified Mercalli Intensity Scale</p>

4 HAZARD RISK ASSESSMENT

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		<p>vulnerable populations such Allenstown Elementary School and Armand Dupont School and sporting fields, Community Center, Volunteers Park, campgrounds, and Bear Brook State Park and essential Town facilities. Although the buildings may receive little damage from earthquakes, they should be carefully monitored because the buildings are structurally larger, typically contain a large number of people, may contain vulnerable populations, and are critical to the Town’s operations and culture.</p> <ul style="list-style-type: none"> • Damage to utility poles and wires, roadways and infrastructure could be significant. Aboveground poles, underground electric lines, wastewater treatment lines (mostly Downtown) and the high transmission Tenneco gas lines could be susceptible. The Allenstown Wastewater Treatment Facility could be damaged in an earthquake along with its underground infrastructure. Wastewater pumping stations at River Road and Glass Street could be at risk. The Pembroke Water Works water lines in Suncook Village and the water tank at Bailey Avenue could be damaged by earthquakes. 	
<p>EXTREME TEMPERATURES Excessive Heat, Heat Wave, or Cold, Wind Chill <i>*Events(s) Within Last 5 Years*</i></p>	<p>4.0 LOW</p>	<ul style="list-style-type: none"> • Excessive heat and extreme cold will continue being problematic for Allenstown residents. There are many group facilities, manufactured housing parks, containing the old, young, vulnerable, or marginalized populations. The Fire & Rescue and Police Departments will continue to check on at-risk residents when possible. • Should the temperature remain high (or low), the Community Center could be opened as a temporary cooling (or warming) centers. The Community Center is the primary Town shelter (Allenstown Elementary School is the secondary shelter) and could be opened for this need with School District, Red Cross, and/or Capital Area Public Health Network assistance. 	<ul style="list-style-type: none"> ◆ NWS Windchill Index ◆ NWS Heat Index
<p>HIGH WIND EVENTS Wind, Thunderstorms, Hail, Downbursts, Tornadoes, Debris <i>*Events(s) Within Last 5 Years*</i></p>	<p>8.0 HIGH</p>	<ul style="list-style-type: none"> • All of Allenstown will experience future severe wind, rainstorms, and thunderstorms often with lightning, particularly common in the summer months. In addition, tornadoes and downbursts are anticipated in the future based on past events. Flooding, debris, and property damage will accompany these events. Electrical power (Eversource) is disrupted during most wind-related events. The telecommunications tower and antennas on US 3/Bailey Avenue, Eversource electric lines and substations, transmission lines, Allenstown Wastewater Treatment Facility on Canal Street, and Water Works tanks at Bailey Ave (Hooksett). could be damaged by High Wind events. • The whole Town could be impacted by a tornado or downburst. The Downtown would be most vulnerable with its high number of people and buildings along the Suncook River, as tornadoes travel through flat areas and valleys. The Allenstown Elementary School and Armand Dupont School may together hold the largest numbers of vulnerable people in the vicinity, but many other Village facilities would be at risk. • Future high wind events will likely endanger roadways and utility lines from falling trees and limbs. US 3 travels east west and NH 28 travels north south, with the two routes intersecting at Main Street in the Downtown. Deerfield Road is a critical local route that leads to hundreds 	<ul style="list-style-type: none"> ◆ Enhanced Fujita (EF) Tornado Scale ◆ Accuweather Thunderstorm Criteria Scale ◆ Hail Size Scale

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		<p>of residences. Other Class V town roads may be suitable for temporary commuter detour traveling but most of them are gravel and hilly and are in danger of tree fall during high wind events.</p> <ul style="list-style-type: none"> • Outside of the Downtown, the rest of the Town is wooded and forested and sections would be difficult to access with trees and power lines down on the residential roads. Should a downburst or tornado run through the Bear Brook State Park and its hiking trails, people in the park and living on homes along the Park’s perimeter would likely need assistance. • Older historic or wooden buildings within the Downtown areas, and the Churches, Library, Historical Society, private homes, other historical sites, and the Old Meetinghouse on Deerfield Road may be more vulnerable to wind damage because of their age and type of construction. 	
<p>INLAND FLOODING Rains, Snow Melt or Flash Floods <i>*Events(s) Within Last 5 Years*</i></p>	<p>2.0 LOW</p>	<ul style="list-style-type: none"> • Future flooding is expected in Allenstown. The Suncook River and Merrimack River, Catamount Brook, Little Bear Brook, Boat Meadow Brook, Bear Brook, and Pease Brook have the potential to flood their banks. Riverside Drive, Fanny Drive, Albin Avenue, Swiftwater Condominiums (~41 units) on Swiftwater Drive, Pinewood Road, or the Deerfield Road area may be impacted. • Some of the Town’s roads have steep slopes and tend to washout during storm events. The community has unnamed brooks that flow under roads that would become impassible during heavy rainfall and resultant flooding conditions. Regularly washout locations include Dodge Road, Chester Turnpike Road, Albin Avenue, Wing Road, and Mount Delight Road, are anticipated to do so in the future from spring snow melts or heavy rainfall at least until repaired. • Allenstown Wastewater Treatment Facility on Canal Street may be impacted by Merrimack or Suncook River flooding. See also the Special Flood Hazard Areas (floodplains), Waterbodies, and Road Washouts sections for details. The SFHAs and road washout areas are anticipated to flood in the future during extreme events. 	<ul style="list-style-type: none"> ◆ Special Flood Hazard Areas (SFHAs) on 2010 Digital Flood Rate Insurance Maps (Zones A, AE, X) ◆ Flood Action Stages
<p>LANDSLIDE Soil, Rockslide or Excavation Areas <i>*Event(s) Within Last 5 Years*</i></p>	<p>1.0 LOW</p>	<ul style="list-style-type: none"> • Generally, vegetation and best operational practices of excavation sites in Allenstown are good at preventing landslides or rockslides. Sites include the active Bailey’s Quarry/ Hudson’s Quarry, Allenstown Aggregate, and Plourde Sand and Gravel. They are well maintained and used for private operations. Potential future landslides are not expected to occur at the excavation sites in Town, although slides are possible under the right conditions. • The Town has numerous hills over 1,000’ in elevation, most of them with roadways leading to homes. • Roads with steep ditching or embankments will remain vulnerable to landslide in the future. Road washouts and flash-flooding could cause landslides, especially along Dodge Road, Lower Road, New Rye Road or US 3. Gravel roads with ditching in Allenstown could be subject to landslide conditions (see Inland Flooding). Landslide is an uncommon 	<ul style="list-style-type: none"> ◆ No known widely-used scale measuring the magnitude of landslides

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		hazard but one that could cause property damage, otherwise the Town is not particularly susceptible.	
<p>LIGHTNING *Events(s) Within Last 5 Years*</p>	<p>4.0 LOW</p>	<ul style="list-style-type: none"> • Future lightning strikes may cause the damage at wooden historic structures in the greater Downtown: the area includes Suncook Village (including all Town facilities, Allenstown Elementary School and Armand Dupont School), Tender Years Child Care Center, the Churches, and senior housing facilities (Suncook Pond Senior Housing with high density residential, commercial and tax exempt facilities and buildings without lightning rods. <p>Other structures and homes located in the populated areas would be most vulnerable to the power surges and outages caused by these strikes, especially those high density populations in proximity to wooded and forested areas: Bear View Crossing MHP, Catamount Hill Cooperative MHP, Garden Drive MHP, Old Towne HMP, River Pines MHP, Rodgers/Betty Lane HMP, Swiftwater Condos, and campgrounds. The potential for resulting wildfire and conflagration is high in these densely populated areas.</p> <ul style="list-style-type: none"> • Town essential facilities buildings, construction/lumber businesses, and the fuel businesses (Businesses with potentially hazardous materials onsite such as fuel, gasoline, used fluids (various automotive repair shops, Circle K Convenience Store/gas station, Mega X Convenience Store/gas station, etc) could each be vulnerable to lightning and fire. The Allenstown Wastewater Treatment Facility, Town Highway Garage, Police Department, Fire Department, Town Hall, Transfer Station and Old Meetinghouse could be vulnerable to lightning strike. • The higher elevations including Catamount Hill and Bear Hill may be most susceptible to lightning. • Outdoor utilities and antennas are highly vulnerable to future lightning strike, such as the Bailey Avenue telecommunications tower and Pembroke Water Works tower, Eversource electric lines and switching stations, repeaters, and other equipment. • Forested areas and open recreation fields can be dangerous to people and property. Trees are constantly struck. These include the public Town lands and State Forests, conservation areas, and points of higher elevation which can be dangerous to people and property if struck by lightning. Numerous outdoor recreational and gathering places such as Bear Brook State Park trails and Volunteer Park, School athletic fields, and Merrimack River Canoe Access could be vulnerable to lightning. The State Park locations cannot be easily accessed by emergency vehicles, whether to fight the fire or remove people from harm’s way. 	<p>◆ Lightning Activity Level (LAL)</p>

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
<p>PUBLIC HEALTH Infectious Diseases, Air & Water Quality, Biological, Addiction, Arboviral, or Tick-borne *Events(s) Within Last 5 Years*</p>	<p>16.0 HIGH</p>	<ul style="list-style-type: none"> Public health issues may occur in the community in the future during warm or cold months. For indoor contamination, the highest risk facilities for pick-up or transfer of viruses and bacteria can include the : Allenstown Elementary School, Armand Dupont School, Pine Haven Boys Center, Community Center, Town Hall, Tender Years Child Care Center, the Churches, Elliott Family Health Center at Suncook, and senior housing facilities Suncook Pond Senior Housing), and Allenstown Animal Hospital. Food-borne illness, can be transferred at eateries such as Country Diner, Dunkin Donuts, Olympus Pizza, Subway Restaurant, and others. All winter long, people of all in Allenstown in close quarters get sick from different viruses. Outdoor susceptibility to arboviral and tickborne diseases is expected to grow. Allenstown is a highly rural community with many waterbodies, wetlands, and other swampy areas for these arthropods to thrive. The State Park and trails which attract people can also enable transmission. Air quality warnings from Canadian fires and drifting smog do little to prevent particulate inhalation from Allenstown’s more vulnerable populations, outdoor enthusiasts, and Downtown pedestrians. Banks of the Suncook River and Merrimack River, and any of the Ponds used as beaches may expose people to cyanobacteria. Pond canoe launches/ beaches can be shut down in the future due to high cyanobacteria levels, and this situation is one to watch during the warm season in July-August. The Town's local Point of Dispensing (POD) is located at the Bow High School. Allenstown is a member of the Capital Area Public Health Network, which will assist the Town in times of public health crisis. 	<p>◆ No known widely-used scale measuring the magnitude of public health incidents</p>
<p>RIVER HAZARDS Ice Jams, Scouring, Erosion, Channel Movement or Debris *NO Event(s) Within Last 5 Years*</p>	<p>3.0 LOW</p>	<ul style="list-style-type: none"> Future ice jams in the Suncook River can be expected and are likely to cause infrastructure damage, possibly at the US 3 bridge, Main Street bridge, or NH 28 double decker bridge. Roads within the River’s floodplain areas could in the future be subject to ice jam damage. Erosion/washout of certain Town roads along the River is anticipated to continue due to flooding and heavy rains. Because of water high volumes and swift moving water during future flooding events, the Suncook River meanders may be at risk, and bank erosion and channel movement are future hazards of concern (<i>see Map 6 Fluvial Erosion Hazard</i> series). Floating debris down the River can accumulate at bridges and dams during future flooding events (<i>see Map 7 Large Woody Material</i> series). 	<p>◆ EPA Bank Erosion Risk Index</p>
<p>SEVERE WINTER WEATHER Snow, Ice, Blizzard or Nor’Easter *Events(s) Within Last 5 Years*</p>	<p>8.0 HIGH</p>	<ul style="list-style-type: none"> It is extremely likely that Allenstown will be impacted by severe winter weather in the future. Damage and serious conditions can result in all areas of the community. Areas above 500 feet, the western section of Town (the remote, forested and difficult to access Deerfield Road area and Bear Brook State Park), Catamount Hill and Bear Hill are among the most vulnerable areas to ice and snow conditions. 	<p>◆ Sperry-Piltz Ice Accumulation (SPIA) ◆ NCDC Regional Snowfall Index</p>

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		<ul style="list-style-type: none"> As severe winter conditions are expected to continue in the future and to increase in severity, concerns remain regarding safety on NH 28 and US 3, especially in high speed areas and at the intersection. Many local roads have a sharp incline/decline and cars have trouble traveling the roads during winter conditions, especially when icy. The Highway Department keeps up with the snowfall on 74 miles of Town roads, but ice storms require more time and resources to keep the roads safe. The crew is seeing regular severe warming and snowmelt which then freezes to ice. With the changing climate, this situation is anticipated to grow in the future. Particular areas of concern during winter weather include high density or vulnerable populations of Downtown/ Suncook Village area: include Allenstown Elementary School, Armand Dupont School, Community Center, Town Hall, Tender Years Child Care Center, Suncook Pond Senior Housing, Senior Center, Allenstown Wastewater Treatment Facility, Town Highway Garage, Police Department, Fire Department, Town Hall, Transfer Station and Old Meetinghouse. Power outages may occur from downed trees due to heavy snow loads on branches. Particular areas of concern during winter weather include high density or vulnerable populations of the manufactured housing parks, many of which are located in densely situated or forested areas subject to isolation and power failure from treefall or power outage: Bear View Crossing MHP, Catamount Hill Cooperative MHP, Garden Drive MHP, Old Towne HMP, River Pines MHP, Rodgers/Betty Lane HMP, Sunrise Hill Apartments, Swiftwater Condos. During future storms, some historic buildings or Town facilities with large or flat roofs, barns or sheds, and older manufactured homes may be vulnerable to heavy snow loads or other events that could cause the roof to collapse. Flat roofs can be a problem with snow-loading. The US 3/Bailey Avenue telecommunications tower and its antennas, and the nearby Pembroke Water Works tower, Eversource electric lines and switching stations as well as Department building antennas could be highly impacted from future snow, ice, and blizzards. 	(RSI) for Northeast
SOLAR STORMS AND SPACE WEATHER Solar Winds, Geomagnetic Storms (Aurora Borealis), Solar Radiation or Radio Blackout *NO Event(s) Within Last 5 Years*	3.0 LOW	<ul style="list-style-type: none"> The aurora borealis has been photographed on nearby Mount Kearsarge in Warner 30 miles to the northwest due to geomagnetic storms. These types of events are likely to recur. At this time, the Town is aware of potential impacts to its communications and electrical systems to its Town and School facilities but has rated the hazard unlikely to cause damages. The telecommunications array on the US 3/Bailey Avenue tower could be impacted in the future. 	<ul style="list-style-type: none"> ◆ NOAA Geomagnetic Storms Scale ◆ NOAA Solar Radiation Storms Scale ◆ NOAA Radio Blackouts Scale
TROPICAL AND POST-TROPICAL CYCLONES	3.0 LOW	<ul style="list-style-type: none"> The last tropical and post tropical storm to impact Allenstown was Irene in 2012. There will be future tropical cyclones to impact Allenstown. Although the vulnerable areas are spread all over Town 	<ul style="list-style-type: none"> ◆ Saffir-Simpson Hurricane Wind Scale

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
<p>Hurricanes, Tropical Storms or Tree Debris *NO Events(s) Within Last 5 Years*</p>		<p>instead of more site- specific, the facilities and locations at greatest risk are shared with High Wind Events and Inland Flooding.</p>	
<p>WILDFIRE Brushfire, Outdoor Fires or Accidental *Event(s) Within Last 5 Years*</p>	<p>4.0 LOW</p>	<ul style="list-style-type: none"> • Although few substantial wildfires have impacted Allenstown since the last Plan, the potential exists for large fires in remote or difficult to access locations in the future. Drier foliage, slash on the ground, one-egress roadways, along Bear Brook State Park and its trails and in private woodlots could mean both future severe fires and difficulty accessing these fires should the need arise. As a member of the Concord Area Fire Mutual Aid Compact, the Town regularly provides other communities with mutual aid for wildfires and would receive aid in turn. • Bear Brook State Park containing over 50% of the Town’s land is the primary concern for future wildfires. However, nearby are substantial residential developments in the Wildland Urban Interface and limited emergency access. • Allenstown is heavily wooded, with difficult, remote areas and many slopes. The wooded lots in the Downtown area and along the Suncook River, the manufactured housing parks surrounded by forestland and the Deerfield Road residential area within Town could be particularly prone to wildfire since a large population is located in rural and wooded locations. Most new subdivisions which are approved occur in wooded areas, but most are required to have an adequate water supply for fire-fighting. A lot of slash remains on the ground. • Some of the lots on private roads or Class VI unmaintained roads could be particularly vulnerable to fire as they might not be readily accessible for fire apparatus. • See also Lightning. 	<p>◆ NWCG Wildfire Classification</p>
<p>SECONDARY TECHNOLOGICAL AND HUMAN HAZARDS</p>			
<p>AGING INFRASTRUCTURE Bridges, Culverts, Roads, Pipes or Underground Lines *Events(s) Within Last 5 Years*</p>	<p>not scored</p>	<ul style="list-style-type: none"> • Most of the Town’s infrastructure is aging and only able to be replaced on a priority basis. Therefore, any future natural hazard could render the culverts, ditching, and drainage systems vulnerable. Town bridges are aging and could be subject to floods, ice, transportation crashes or debris impacted infrastructure. • Allenstown Wastewater Treatment Plant servicing the Downtown/Suncook Village area has undertaken many upgrades to its facilities, is undertaking pipe inventories, but would still need to upgrade old pipes and equipment as they fail. An Asset Management Plan is available to bring awareness to decision makers and voters. Future hazard events such as earthquakes, floods, severe freezing and continued aging infrastructure will make the problem worse. • See list of Road Washouts for a list of culverts susceptible to future floods, ice jams, debris, and other hazards. 	<p>N/A</p>

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		<ul style="list-style-type: none"> The Town's roads often difficult to maintain and rehabilitate because of lack of funding versus the need. The future will bring further lack of maintenance because the Town Highway Budget will only stretch to the immediate priorities, while flooding events and severe winter weather are anticipated to increase and impact multiple roads during each event. 	
<p>FIRE Vehicle, Structure, Arson or Conflagration *Events(s) Within Last 5 Years*</p>	<p>not scored</p>	<ul style="list-style-type: none"> The Suncook Village area, manufactured housing parks, Deerfield Road area, and other high density areas could be subject to future conflagration which would have devastating effects on the entire community. Future vehicular fires resulting from crashes could occur, especially on NH 28 or US 3, where Allenstown's first responders would arrive on scene before State authorities. The numerous construction, excavation, lumber, automotive and fuel businesses in Town could be subject to potential explosions or fires in the future (see APPENDIX A for the list). Vacant structures in the Downtown/Suncook Village area, vacant housing units, housing run by absentee landlords, or other unmaintained housing runs a greater risk of arson in the future than occupied or well-kept premises. Bear Brook State Park may carry the greatest risks and damages of any future arson. 	<p>N/A</p>
<p>HAZARDOUS MATERIALS Haz Mat Spills, Brownfields or Trucking *NO Event(s) Within Last 5 Years*</p>	<p>not scored</p>	<ul style="list-style-type: none"> Transportation of hazardous materials on NH 28 and/or US 3 is believed to be an everyday occurrence. In the future, trucks could rollover and spill their contents (fuel, liquids, propane, solids, etc) onto these significant roadways. Should a future haz mat spill occur in Suncook Village, not only could the contents of the spill reach the adjacent Suncook River and flow into the Merrimack River, most Town facilities, hundreds of residences, Allenstown Elementary School and Armand Dupont School, and local businesses would need to be immediately evacuated or the decision to either shelter in place would need to be made and conveyed to occupants. Several occupational facilities in Town handle, store, or use hazardous materials. Any of these facilities could have a spill at their site or during transport which could result in a spill. Key sites include the gas stations, auto repair shops, excavation sites, construction businesses, and the Transfer Station. Town facilities such as the Allenstown Wastewater Treatment Facility and Pembroke Water Works utilize and store strong chemicals. See APPENDIX A for the full list. Existing and future brownfields sites such as China Mills, other sites along the Suncook River, and illegal junkyards may exist and pose future danger to new property owners or river users in the area. The Town should be aware of and inventory these locations. 	<p>N/A</p>
<p>LONG TERM UTILITY OUTAGE Power, Water, Sewer, Gas,</p>	<p>not scored</p>	<ul style="list-style-type: none"> Aboveground electric lines in Allenstown make the Town particularly vulnerable to outage during future disaster events. Utilities (Eversource/Unitil, internet, cable) will be restored to the Downtown 	<p>N/A</p>

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
<p>Internet, Communications or Live Wire Danger *NO Event(s) Within Last 5 Years*</p>		<p>area first, the most populated area, before the remote locations in Allenstown (NH 28, Deerfield Road) have utilities restored.</p> <p>Underground water, gas, or sewer lines could break from Earthquake or Severe Winter Weather. A strategic break could isolate all those connections at the far end of the line.</p> <ul style="list-style-type: none"> • Many Allenstown residences outside Suncook Village own generators for their homes and are prepared for several days of no utilities to their homes during future storms. • The telecommunications tower may be disrupted during future storm events. Essential communications may be paused until redundant capabilities are reestablished in the region. 	
<p>TRANSPORTATION CRASH Vehicle, Airplane, Helicopter, Rail, Interstate, Pedestrian or Bicycle *Events(s) Within Last 5 Years*</p>	not scored	<ul style="list-style-type: none"> • With NH 28 and US 3 running through Allenstown and forming an intersection, the Town’s Fire and Rescue and Police Departments are often the first to respond to the vehicle crashes experienced on the State roadways. These routes are used heavily by commuters as they travel through Allenstown to their destinations. Crashes are expected to increase over time, especially when conditions become icy from winter snow melt (climate change) for the fast highways and greater numbers of vehicles use the roads. • The Town maintained roads, Class VI unmaintained roads and private roads can have elevation changes that will continue to make travel difficult in the future in snowy, icy, flooded, or debris blockage conditions. Any time of year, dangerous intersections become more difficult to navigate with heavy winds, rain, treefall or flooding hazards. Travel through State Park roads could become difficult or impossible. • Vehicle, pedestrian, and bicycle crashes are anticipated to continue to occur Downtown in the future as the economic center of the community and access to the Merrimack and Suncook Rivers are improved. • The Town may also have alternative future crash potential, such as airplanes, helicopters, and drones. Nearby airports enable plane traffic. With the increased usage of private drones, the future potential for their crashing in populated areas or causing vehicular crashes is anticipated to rise. 	N/A
<p>MASS CASUALTY INCIDENT As a result of any hazard event *NO Events(s) Within Last 5 Years*</p>	not scored	<ul style="list-style-type: none"> • Large groups of people are located at the Town Hall, Community Center, Allenstown Elementary School, Armand Dupont School, and Bear Brook State Park which could be where a future mass casualty event could occur as a result of any other type of hazard event. • Allenstown is a vibrant community with active groups and social calendars. Events such as political candidate visits, Allenstown School District sporting events, Bear Brook State Park museums and events, Town Meeting, Old Home Day, Veteran’s Parades, Church events, Suncook Village events, Volunteer Park activities, and other community gatherings could set the location for future mass casualty incidents. 	N/A

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		<ul style="list-style-type: none"> Concord Hospital is 15 minutes from Allenstown and is the closest hospital with a trauma center. Support medical facilities in Allenstown include the Elliott Family Health Center and some private practice doctors and dentists in Town should a mass casualty incident occur. During times of mass casualty, it is likely the communications network will be overloaded. Residents may not be able to call and emergency responders could have difficulty reaching assistance. The Town Hall, Fire and Rescue Department, and Police Department phone lines would be jammed with callers. During this time, the Town website should be updated regularly. 	
<p>TERRORISM/ VIOLENCE Active Shooter, Hostage, Public Harm, Civil Disturbance/ Unrest, Politically Motivated Attacks, Incendiary Devices, Sabotage or Vandalism <i>*Events(s) Within Last 5 Years*</i></p>	not scored	<ul style="list-style-type: none"> It is possible the Town could be the target of an act of terrorism based on current trends. Possible targets could be Town Hall, Community Center, Allenstown Elementary School, Armand Dupont School, Pine Haven Boys Center, Library, or Bear Brook State Park, Post Office, banks, Circle K Convenience Store/gas station, Mega X Convenience Store/gas station, and local restaurants. Future hostage situations are isolated events and are nearly impossible to predict. The sites where this potential exists could include those listed above under terrorism, the high density housing neighborhoods (see Severe Winter Weather) and everyday domestic situations. Isolated incidents of violence could occur in the remote forested areas and trails of those Forests, federal lands, and conservation lands listed in the Lightning section. Large scale incidents of civil disturbance and public unrest are possible in Allenstown, but unlikely based upon the local facilities. However, the Town’s participation in the Central NH Special Operations Unit enables Allenstown’s mutual aid assistance where needed. Bomb threats are a possibility for the Schools based on current attitudes and trends. The bridges over the Suncook River could be subject to terrorist threats or bombs that disrupt major travel routes. Any future sabotage of local utilities, Eversource lines, high tension power lines, the telecommunications tower, Pembroke Water Works Tower, telephone and internet substations, Allenstown Wastewater Treatment Facility or its pipes or pumping stations, or the local and adjacent High, Significant or Low Hazard dams would cause an immense amount of damage in Allenstown. 	N/A
<p>CYBER EVENT Municipal Computer Systems Attack, Website Overtake, Cloud Data Breach, Telephone Rerouting, Identity Theft, Phishing, Ransomware,</p>	not scored	<ul style="list-style-type: none"> The entire Town – residents, businesses, municipal, School District, and state facilities- could be subject to future cyber events. Cyberattacks could target their websites, computer systems, cloud data systems, archival records, or use email phishing or related techniques to install ransomware, etc. The Town Hall, Police Department, Fire and Rescue Department, Transfer Station, Highway Department, Library, Historical Society records, Allenstown Elementary School, Armand Dupont School, Community Center, churches, and technology businesses would be high-value targets for their software and their archival systems. 	N/A

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
<p>Virus or Phone Scams *NO Event(s) Within Last 5 Years*</p>		<p>• Email scams, phone scams, door-to-door canvassing, and identity theft are likely to continue in the future, causing regular problems for residents and businesses. These scams are more likely to impact the Town’s senior residents. Significant future damage could be done to municipal and School systems, local pharmacies and banks, and the Post Office, in addition to tech businesses and other facilities located in Town. Private businesses targeted could create a negative economic impact on the community.</p>	

Source: Allenstown Hazard Mitigation Committee

Although there are many potential hazards in Allenstown’s future, the community is knowledgeable about where some of the worst occurrences might result with this descriptive **Potential Future Hazards** inventory. A comprehensive, specific community facility inventory that indicates each site’s **Primary Hazard Vulnerabilities** is found next in **5 COMMUNITY VULNERABILITY ASSESSMENT**.

INLAND FLOODING

Flooding is a more easily locatable hazard as waterbodies can be used to approximate the range of future potential flooding areas. The Special Flood Hazard Areas, waterbodies, and road washout locations are listed in detail below for Allenstown.

Special Flood Hazard Areas (SFHA)

There are active **9** Digital Flood Insurance Rate Maps (DFIRMs) in Allenstown from the **April 2010** updated set, of which **5** panels contain floodplains of the **Suncook River** or **Merrimack River: #0564, #0566, #0567, #0568, and #0677**. These Allenstown DFIRM panels includes **Zone AE** floodways (1% annual risk of flooding) and **Zone AE Base Flood Elevations (BFEs)** (1% annual risk of flooding). The DFIRM panels are described and highlighted gray in **Table 27**.

The remaining **4** DFIRMs, **#0569, #0590, #0685, and #0705**, contain **Zone A** (1% annual risk of flooding) and **Zone X** (0.2% annual risk of flooding) floodplain areas for **Catamount Brook, Boat Meadow Brook, Bear Brook, Little Bear Brook, Pease Brook, Smiths Pond** and **Bear Hill Pond**. The other named ponds and brooks in Town do not appear on these DFIRMs to be located in SFHAs. The **Zone A** and **Zone X** floodplain panels are displayed in the white rows of **Table 27**.

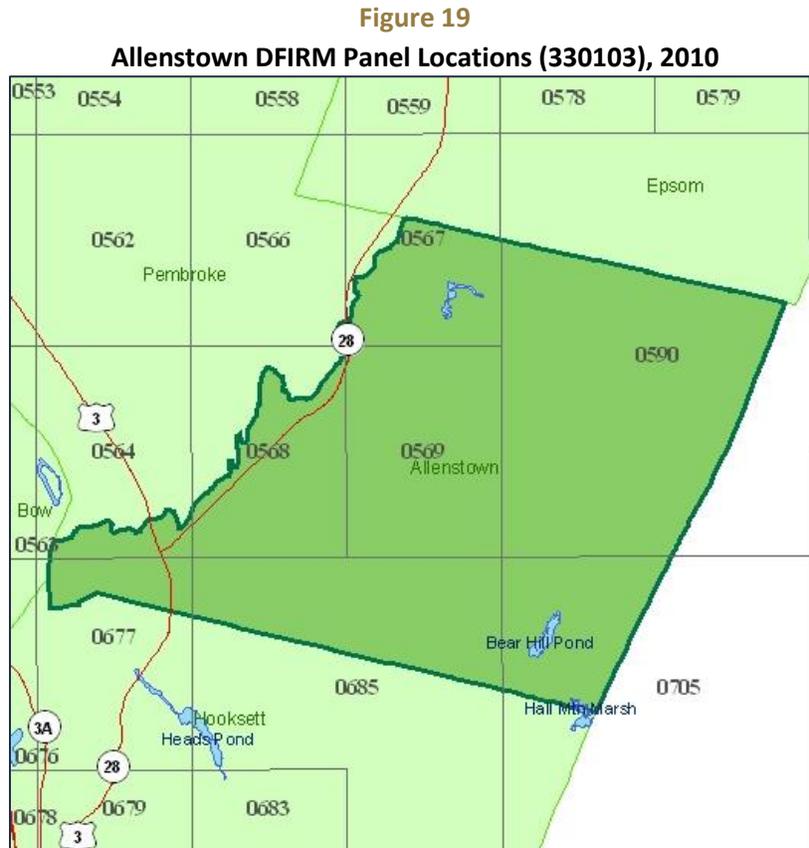
Table 27

Locations of Allenstown Special Flood Hazard Areas (SFHA) on 2010 DFIRMS

Panel NH (D33013C)	Flood Zones in Allenstown (330103)	Base Flood Elevations (BFEs)	Water Body Areas in Floodplains	Community of Allenstown Geographic Location
#0564	AE with floodway, X	198, 199, 200, 201, 205, 213, 237, 239, 262, 269, 284, 286, 288	Suncook River and Merrimack River	Southwestern corner – Suncook River runs the border of Allenstown and Pembroke. Suncook River enters the Merrimack River and acts as Allenstown’s most western town boundary.
#0566	AE with floodway, X	294,295,299	Suncook River	Northwest – Small section of Suncook River where the river intersects with Route 28.
#0567	A, AE with floodway, X	295, 299, 302, 303, 304	Suncook River, Catamount Pond, and Bear Brook	Northwestern corner – Northern section of where the Suncook River enters through Epsom and east towards Catamount Pond.
#0568	A, AE and with floodway, X	289, 291, 294	Suncook River and Boat Meadow Brook	West – section comprising the middle of the town boundary with Pembroke.
#0677	AE with floodway, X	197,198	Merrimack River	Southwestern corner – small portion of Merrimack River where Allenstown intersects with Bow and Hooksett.
#0569	A, X	N/A	Catamount Brook, Boat Meadow Brook, and a swamp area	Central – A section of Bear Meadow Brook near the Cold Spring Pond Dam Site. Contains Catamount Brook and swamp area near Bear Brook State Park.
#0590	A, X	N/A	Bear Brook, Little Bear Brook, Pease Brook, Smiths Pond, and a swamp area.	Northeastern corner – Bear Brook bordering the top of Bear Brook State park. Smith’s Pond and a swamp area in Bear Brook State Park. Pease Brook running from Bear Brook towards the town boundary with Epsom. Little Bear Brook running parallel north of Bear Brook.
#0685	A, X	N/A	Boat Meadow Brook	Southern – Two brooks unlabeled along the border of Hooksett. Boat Meadow Brook in Bear Brook State Park.
#0705	A, X	N/A	Bear Hill Pond	Southeastern corner – Bear Hill Pond located in southeastern corner near the border with Hooksett and Deerfield.

Sources: FEMA and [NH Geographically Referenced Analysis and Transfer System \(NH GRANIT\)](#) websites

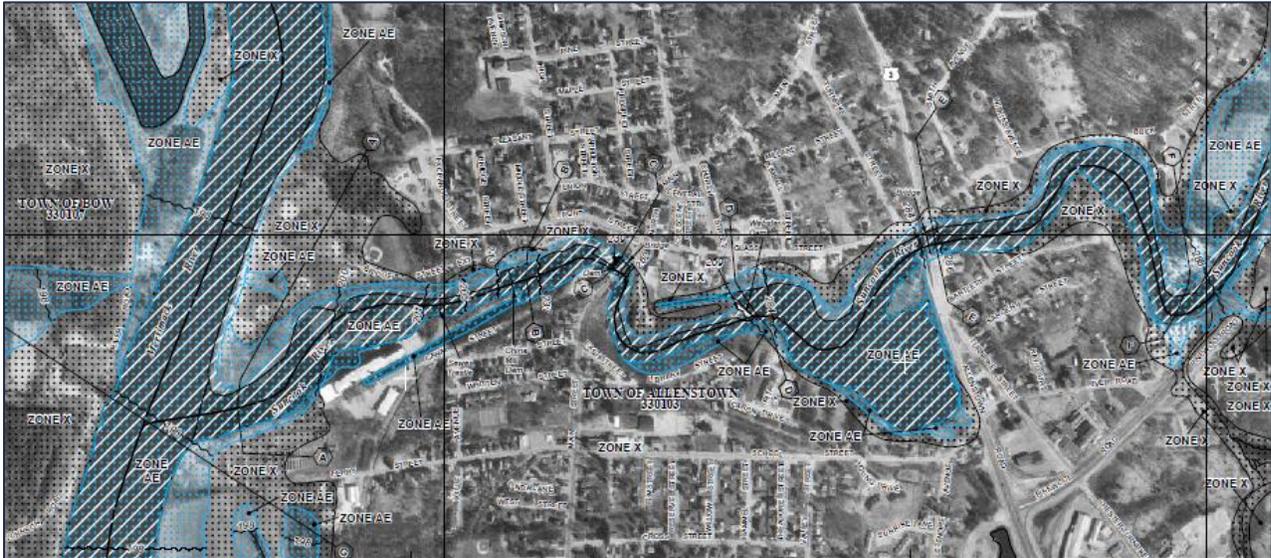
Figure 19 displays the relative location of each of the DFIRM panels in the community used in Table 27. This set of DFIRMs is excerpted from the Merrimack County Flood Insurance Study (FIS) of 2010. The graphic illustrates the numbering system of the DFIRMs, how they are not always consecutive.



Source: Allenstown DFIRMS can be downloaded at <http://www.granit.unh.edu/dfirms/d-DFIRMzips/Allenstown.zip>, last accessed 06-20

Figure 20 displays an example of a DFIRM’s zoomed-in view of the Allenstown Downtown area and Suncook Village where the Suncook River converges with the Merrimack River. The Rivers have multiple classifications based on location, depth, and elevation. Within this densely populated area of Town, the Rivers are designated as Zone AE (1% annual chance, BFEs), Zone X (0.2% annual chance), Zone AE with Floodway (1% annual chance, channelized), Zone A (1% annual chance, no BFEs).

Figure 20
Zoom View of Allenstown Suncook Village/Downtown DFIRM Panel Location #0564



Source: FEMA DFIRM 2010 for Allenstown NH #0564

Waterbodies

These rivers, brooks, ponds and wetlands in Allenstown will contribute to future potential flooding in these and other areas:

- ➦ **Watercourses:** Suncook River and Merrimack River, Catamount Brook, Little Bear Brook, Boat Meadow Brook, Bear Brook, and Pease Brook, and several unnamed brooks and intermittent streams.

- ➦ **Waterbodies:** Iris Pond (commonly and mistakenly referred to as Iris Pond) in the Downtown, Bear Hill Pond, Catamount Pond, Hall Mountain Pond, Smiths Pond, and Hayes Marsh; recreation/farm ponds and unofficial Fire Ponds; and additional drainage ponds, unnamed ponds and wetlands.

Road Washouts

Most of the local, gravel Town Class V maintained roads in Allenstown are constructed using ditching; storm drains are found along the densely developed paved roads. About 22 miles of the Town maintained roads are located throughout the Town, some of which are gravel roads that may facilitate greater washout damage during future flooding events and heavy rains. Regular road washouts currently include:

- Albin Avenue
- Deerfield Road
- Fanny Drive
- Mount Delight Road
- New Rye Road
- Riverside Drive
- Swiftwater Drive
- And others

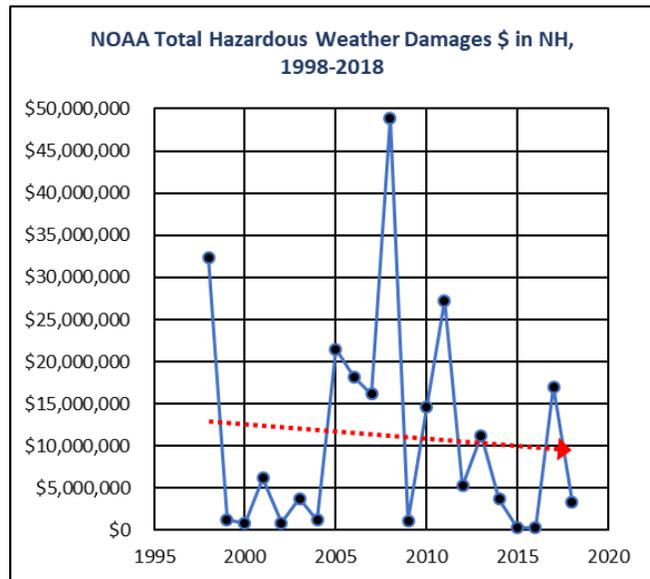
Local Climate Changes and Extreme Weather

In the State and the Central NH Region, like any other areas, exist our own “micro-climate” areas that can be analyzed for future susceptibility to disasters and hazard events. New Hampshire has obtained high costs of damage over time due to hazardous weather and declared disasters. A review of the state and area history can provide a perspective on what Allenstown can expect to see in terms of extreme weather in the future.

Table 28

Summary of Hazardous Weather Fatalities, Injuries, and Damage Costs in NH, 1998-2018

Year	Fatalities	Injuries	Total Damages \$ in Million
2018	2	9	\$3.4
2017	0	0	\$17.0
2016	1	1	\$0.27
2015	2	34	\$0.37
2015	0	2	\$3.7
2013	0	30	\$11.3
2012	1	4	\$5.28
2011	1	2	\$27.3
2010	1	6	\$14.63
2009	1	0	\$1.13
2008	2	5	\$48.9
2007	0	3	\$16.15
2006	1	9	\$18.2
2005	4	9	\$21.5
2004	0	11	\$1.2
2003	2	29	\$3.8
2002	0	7	\$0.9
2001	0	2	\$6.2
2000	2	6	\$8.0
1999	3	17	\$1.3
1998	1	23	\$32.4



Source: National Oceanic and Atmospheric Administration, last accessed 07/19.

Adjusted for inflation [Consumer Price Index CPI] <http://www.nws.noaa.gov/om/hazstats.shtml>

Injuries to people and the costs of damages in New Hampshire have slightly decreased from hazardous weather over the last 20 years according to the trendline displayed in the associated chart for Table 28. Between 1998-2008, this slight decline in injuries and

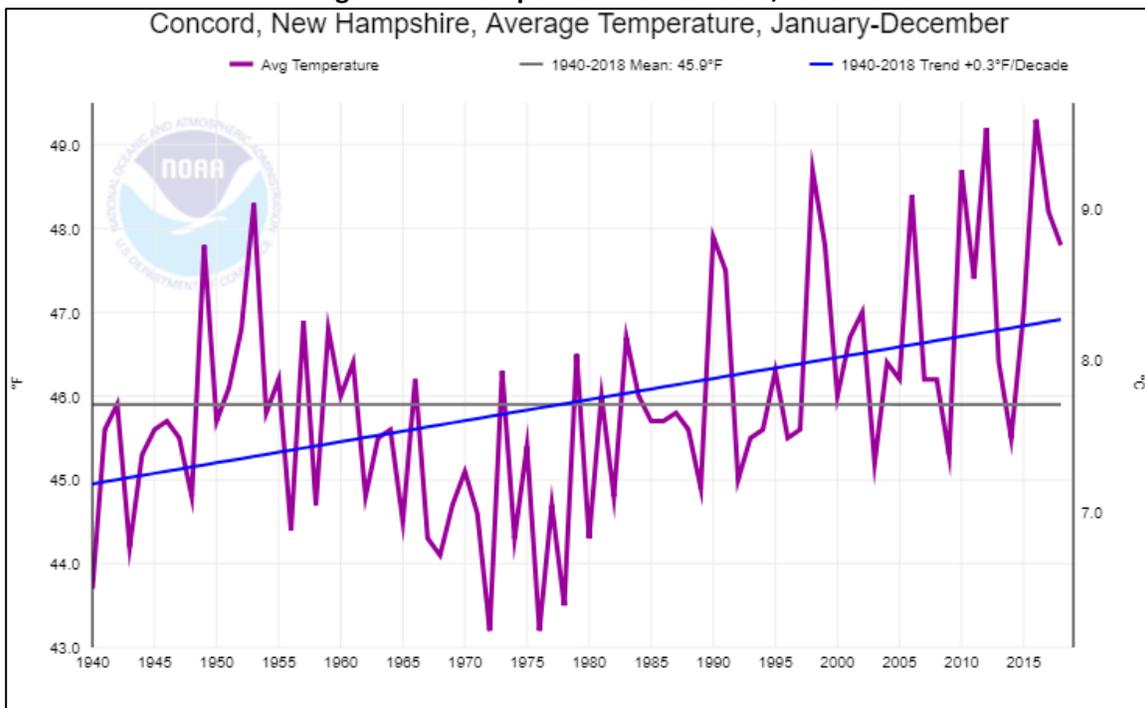
damages can be generally applied to the major disasters declared in the State. The highest damage costs correlate to the 1998 (\$32m) and 2008 (\$49m) ice storms. The number of injuries and fatalities have a less distinct association, with the highest casualties shown in 2015 (36), 2013 (30) and 2003 (31). However, the single greatest number of fatalities during this time period occurred in 2005 (4), likely during the time of the Oct 2005 Columbus Day Floods that struck the southwestern section of the State very hard.

The Central NH Region’s weather history is summarized to provide a view of the trends around the Concord area where some weather measurements have been taken at the Concord Airport since 1868. Although Allenstown is geographically close to the City of Concord (within 10 miles) and these measurements should have some reasonable basis in Allenstown, small unique microsystems are found throughout the region, particularly at higher elevations. As the closest large and longest active weather station, and for CNHRPC region continuity, the Concord measurements will be used for Allenstown.

Figure 21 displays Concord’s average annual temperature (Jan-Dec) between 1940 (43.7°F) and 2018 (47.8°F) with a mean temperature over the 1940-2018 period of 45.9°F. The warmest years were 2016 with a 3.4°F departure from normal, 2012 at 3.4°F departure and 2010 and 1998 tied with a 2.8°F departure from normal. As with typical New Hampshire weather, the seasonal temperatures can vary year after year and without obtaining an average, changes are difficult to see. The coolest years were 1972 and 1976 tied at 43.2°F, 1978 at 43.5°F, and 1940 at 43.7°F. The displayed trend line allows a definitive way of averaging all of the temperatures and illustrates an average +0.3°F temperature increase trend per decade and the increase of about 2.4°F total during this approximately 80-year time period in Concord.

Figure 21

Average Annual Temperature for Concord, 1940-2018

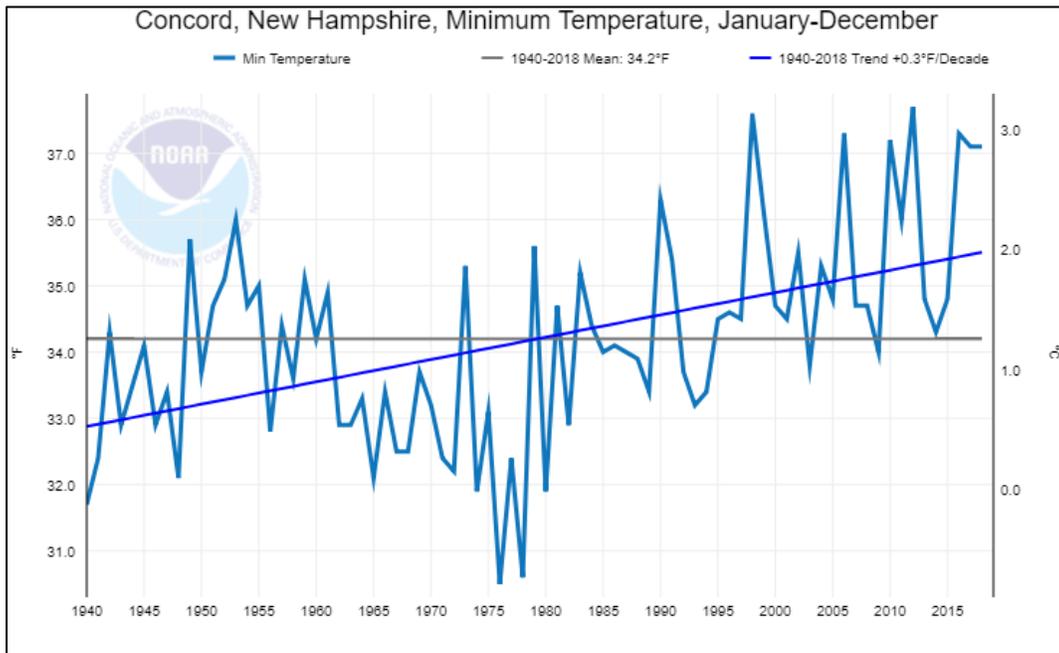


Source: National Oceanic and Atmospheric Administration https://www.ncdc.noaa.gov/caq/city/time-series/USW00014745/tavg/12/12/1940-2018?base_prd=true&firstbaseyear=1939&lastbaseyear=2018&trend=true&trend_base=10&firsttrendyear=1939&lasttrendyear=2018, last accessed online 03-11-19

Another way to evaluate how the temperatures is to measure the minimum annual temperatures and maximum annual temperatures are changing. Both the coldest and the hottest temperatures are growing warmer in the Central NH region, which includes Allenstown.

Figure 22 displays the *minimum* average temperatures for Concord, with a mean (average) of **34.2° F** for **1940-2018**. In **2018**, the *minimum* average temperature was **31.7° F**, equal to the **1940** temperature of **31.7° F**. The lowest minimum was **55.7° F** in **19xx**, followed by **55.7° F (19xx)**, **55.7° F (19xx)**, **55.7° F (19xx)**, and **55.7° F (19xx)**. The highest *minimums* were in **2012 (37.7° F)**, **1998 (37.6° F)**, tied in **2006** and **2016 (37.3° F)**, **2010 (37.2° F)**, and tied in **2017** and **2018 (37.1° F)**. In fact, **9** of the top **10** highest *minimums* occurred since **1990** during the nearly **80-year** data span, indicating the coldest temperatures are growing warmer.

Figure 22
Minimum Average Temperatures for Concord, 1940-2018

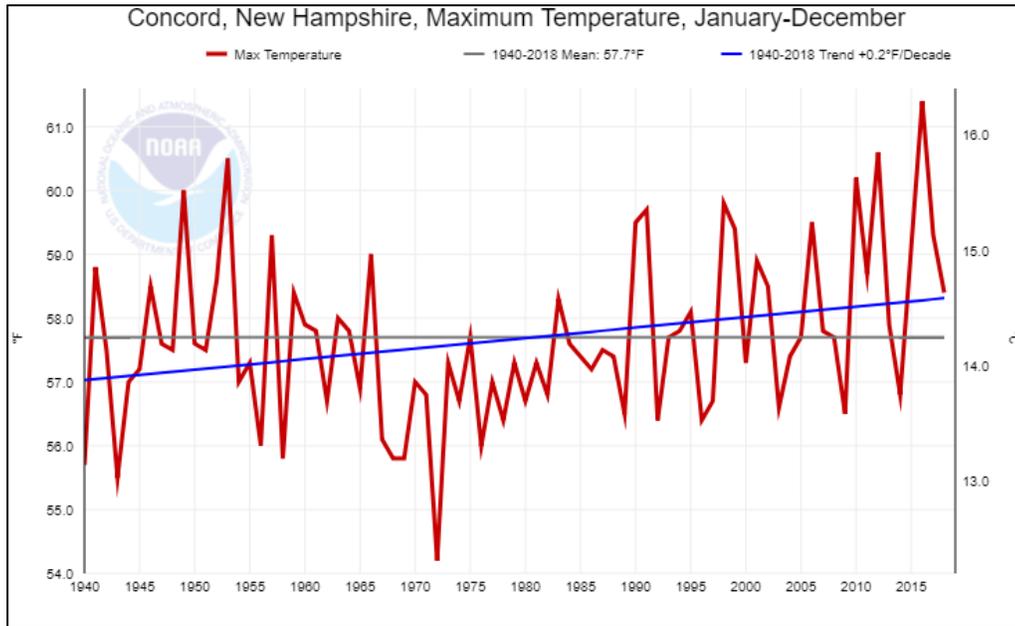


Source: National Oceanic and Atmospheric Administration, last accessed online 03-11-19

Figure 23 displays the *maximum* average temperatures between 1940-2018, with a mean (average) of 57.7° F annually. In 1940, highest *maximum* average temperature was 55.7° F, while in 2018 the highest *maximum* was 58.4° F. The lowest *maximums* were in 1972 (54.2° F), 1943 (55.5° F), 1940 (55.7° F), and tied in 1958, 1968 and 1969 (55.8° F). The highest *maximums* in Concord were in 2016 (61.4° F), 2012 (60.6° F), 1953 (60.5° F), and 2010 (60.2° F). Eight (8) of the top 10 highest *maximums* occurred since 1990 during the nearly 80-year data span. These numbers indicate the hottest temperatures in the Central NH Region are growing warmer.

Figure 23

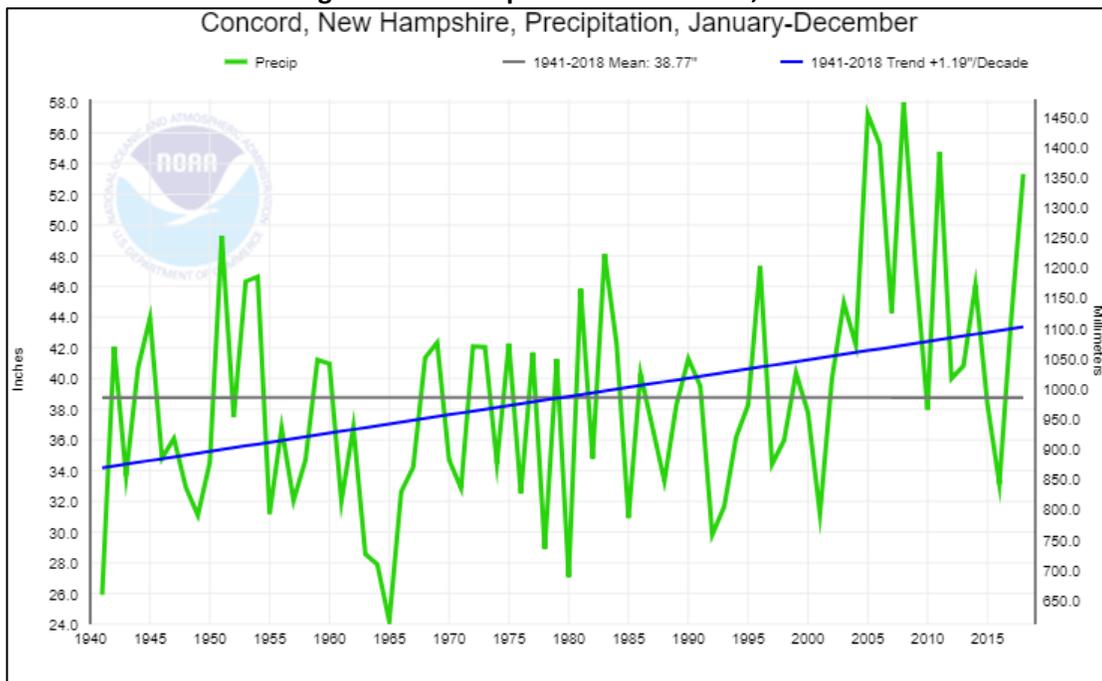
Maximum Average Temperatures for Concord, 1940-2018



Source: National Oceanic and Atmospheric Administration, last accessed 03-11-19

For precipitation (rain) changes, **Figure 24** displays Concord’s average annual Jan-Dec precipitation rates between **1941** and **2018**. Varying seasonal rainfall amounts continue over the decades. The mean annual precipitation during this period is **38.77”** annually. In **1941**, the amount of precipitation was **25.91”** while in **2018** the total was **53.33”**. The wettest year in Concord was **2008** at **58.0”**, followed by **2005** at **57.22”** and **2006** at **55.24”**. The years with the least amount of rainfall were **1965** (**24.19”**), **1941** (**25.91”**), and **1980** (**27.07”**). The trend line serves the same purpose to illustrate an increase of **1.19”** in precipitation per decade, or about **9.5”** overall, during this nearly **80-year** time period from **1941-2018** in Concord. Allenstown will have experienced very similar conditions.

Figure 24
Average Annual Precipitation for Concord, 1941-2018

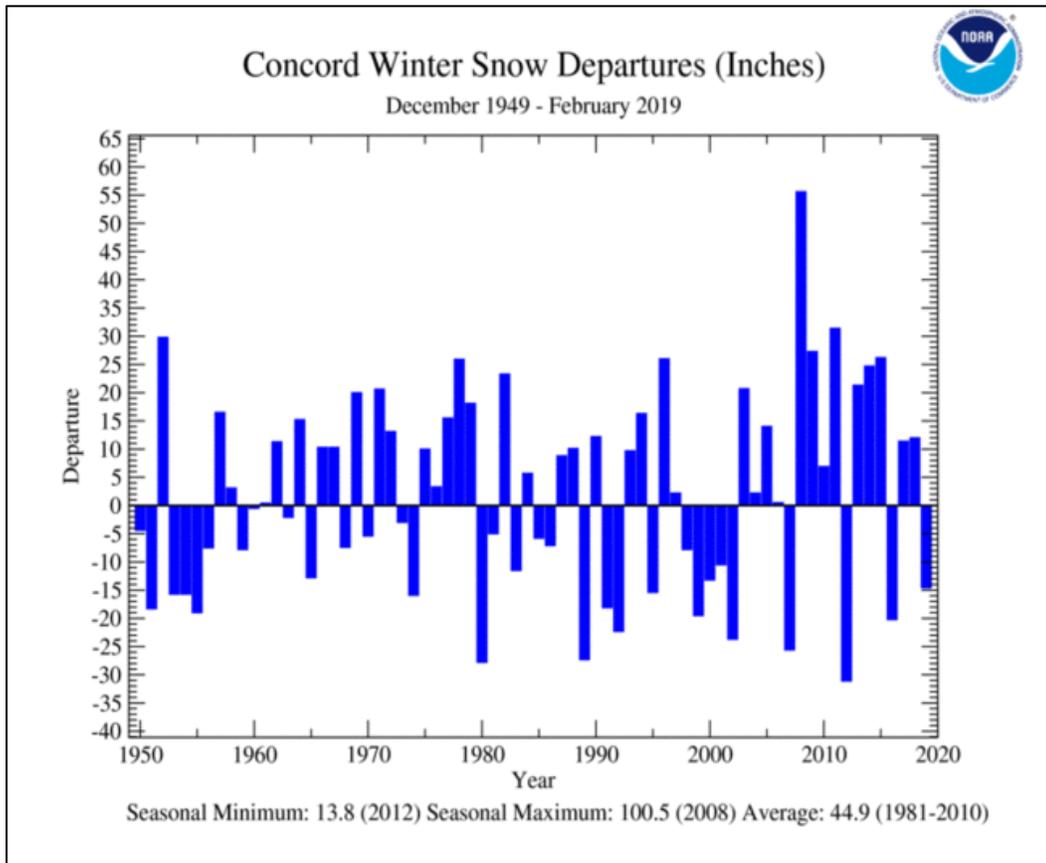


Source: National Oceanic and Atmospheric Administration, last accessed 03-11-19

Displayed in **Figure 25** is the departure from normal snowfall instead of actual inches per year, using a “30-year normal” period as the baseline, which for **1981-2010** is **44.9”** of snowfall annually in Concord.

The amount of recent annual snowfall has significant departures from normal. From **Jan-Dec 2018**, **30.3”** of snowfall occurred, which is **67%** of what normally falls. Since **1949**, the year with the highest amount of snowfall was **2007/08** with **119.5”** (a **266%** departure from normal) and the lowest snowfall was **13.8”** in **2012** (a **29%** departure from normal).

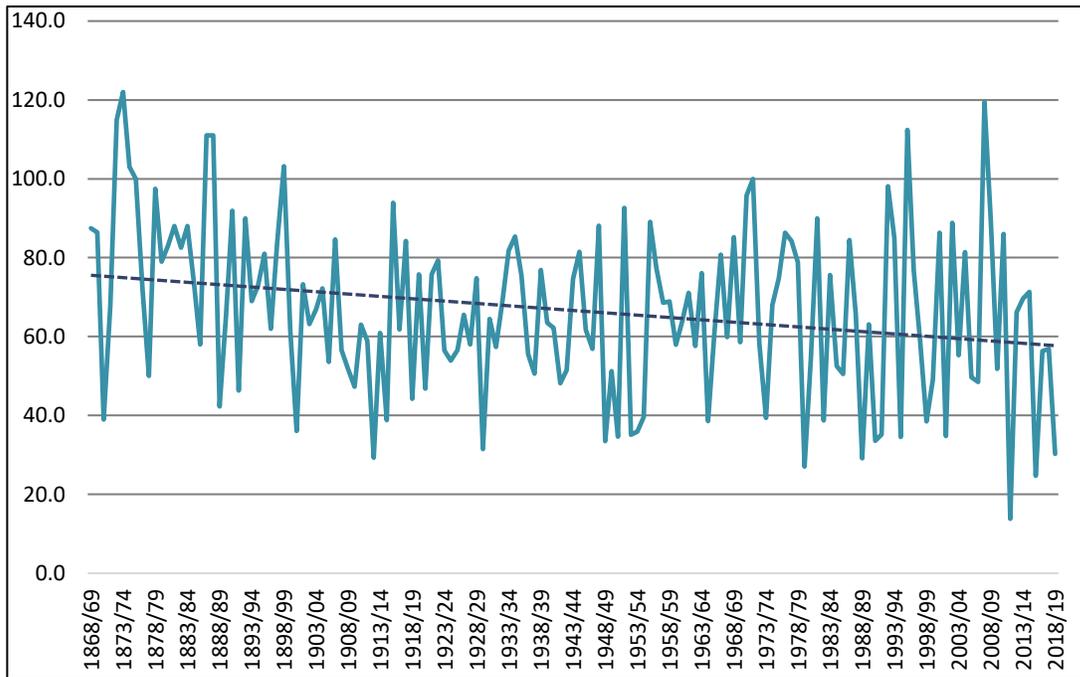
Figure 25
Concord Winter Snowfall Departure from Average, 1949-2019



Source: National Oceanic and Atmospheric Administration, National Climate Report February 2020
<https://www.ncdc.noaa.gov/sotc/national/202002/supplemental/page-2> last accessed 03-11-19

The National Oceanic and Atmospheric Administration (NOAA) seasonal snowfall totals were compiled by CNHRPC for Concord, where snowfall data gathering began in 1868. Figure 26 displays the snowfall every 5 years and includes a trendline that indicate annual seasonal snowfall has decreased by nearly 20" since 1868. The years with the highest snowfall accumulations were 1873/74 (122.0"), 2007/08 (119.5"), 1872/73 (115.0") and 1995/96 (112.4"). The years of lowest accumulations were 2011/12 (13.8"), 2015/16 (24.7"), 1979/80 (27.0"), and 1988/89 (29.1").

Figure 26
Seasonal Snowfall Totals for Concord, 1868-2019



Source: National Oceanic and Atmospheric Administration Data as compiled by CNHRPC, 03-19

Five (5) of the top 10 lowest snow accumulations occurred since 1990. The 2018/19 season ended with 30.3", ranking 6th out of 151 years of records. Allenstown is geographically close to Concord and likely shares similar snowfall accumulation trends over time.

IMPACTS OF CLIMATE CHANGES IN SOUTHERN NEW HAMPSHIRE

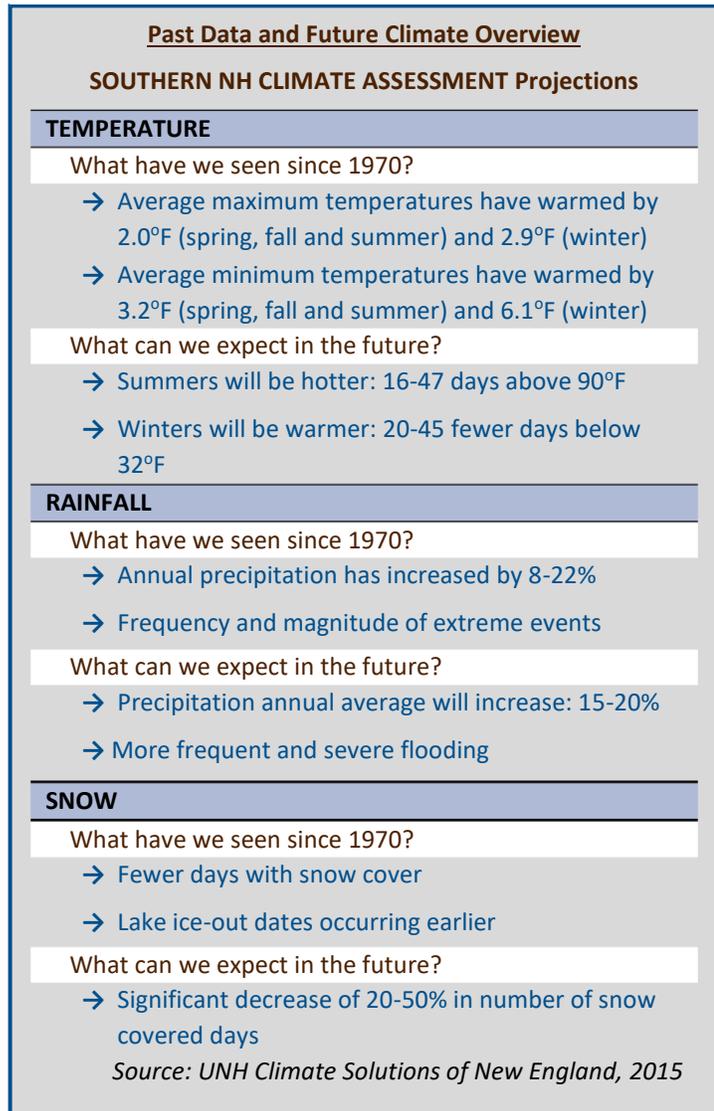
This climate data may certainly be relevant to the entire Central NH Region which includes the Town of Allenstown. The Central NH region climate summation is that the **temperature is getting warmer**, the **precipitation is increasing**, and the **snowfall is decreasing** according to the National Oceanic and Atmospheric Administration’s data collection at the Concord airport. There are no indications to see these trend lines reverse in the future.

The Southern NH Climate Change Assessment, formally entitled *Climate Change in Southern New Hampshire: Past, Present, and Future, 2015* by Climate Change Solutions of New England under the University of New Hampshire, reviewed current climate conditions and projected future conditions of Southern New Hampshire under potential low and high emission scenarios. The Central NH Region and the Town of Allenstown are within southern New Hampshire. The past and future Southern NH climate overview is illustrated in **Figure 27**.

As a result of anticipated extreme weather continuing and climate changes in Central NH and Allenstown, consideration should be given for potential impacts to the community. Several new issues are considered, including public health, natural environment disruption, declining forest health, fewer recreational opportunities, risks to the built environment, transportation system maintenance, aging stormwater infrastructure, decreasing water resources and changing food and agriculture, all of which result from climate change. For more information on these topics, refer to the *Central NH Regional Plan 2015*.

Figure 27

Southern NH Climate Assessment Projections



More Human Health Emergency Events

- ☞ Illnesses such as heatstroke, fainting, and heat exhaustion.
- ☞ Excess heat especially dangerous for the aging population and residents without air conditioning.
- ☞ Increase in greenhouse gas emission, energy demand, and air conditioning use and cost.
- ☞ More favorable conditions for insects carrying viruses and diseases, such as West Nile Virus.
- ☞ Increases risk of waterborne illnesses caused by pollutants entering the town’s water supply, commonly through stormwater runoff and sewage overflow.
- ☞ Infrastructure failure by adding additional stress, leading to potential injury or loss of life.
- ☞ More air pollution, leading to asthma and breathing disorders.
- ☞ Vulnerable populations require more assistance.

Natural Environment Disruption

- ☞ Too much water and/or lack of water can disrupt trees and plants natural growing cycle, potential leading the tree, plant, and surrounding area to die.
- ☞ Additional water and drought conditions affect wetland discharge, stream flow, and water quality, affecting the habitat’s quality of life and species’ health within the area.
- ☞ Debris will be a result of harsh flooding, including trash and downed trees, polluting waters, harming habitats, and damaging property and infrastructure.

Declining Forest Health

- ☞ Large weather events such as heat stress, drought, and periods of winter thaw followed by intense cold can lead to loss of trees.
- ☞ Become susceptible to invasive species and diseases, such as the Hemlock Woolly Adelgid.
- ☞ Loss of trees can have a direct impact on portions of the region’s economic components, including declining tourism.

Fewer Recreation Opportunities

- ☞ Weather Impacts on Recreational Trails such as debris, flooding and erosion.
- ☞ Snowmobiling, ice fishing, snow shoeing, skiing and snowboarding provide numerous sources of winter recreation and winter tourism, enhancing the quality of life and economy, will be affected with shorter seasons.

Risks to the Built Environment

- ☞ Critical infrastructure such as roads, bridges, culverts, stormwater drainage systems, water and wastewater treatment facilities, natural gas lines, electric lines and poles might be at risk of severe damage or failure if the anticipated extreme weather events occur.
- ☞ Damaged infrastructure cannot provide services to homes and businesses, disrupting the economy and may endanger public health.
- ☞ Culverts are at risk to extreme precipitation events, including rain, snow, and ice.
- ☞ Residents who experience damage with flooding to their homes and personal belonging may lack proper flooding insurance, placing the resident in financial hardship.
- ☞ Dams with High Hazard and Significant Hazard classifications are the most likely to cause the largest amount of damage or loss of life.

Increasing Municipal Transportation Systems Maintenance Needs

- ☞ Volume of flooding is expected to increase, potentially closing roads and increasing the travel time for drivers and increasing the cost and energy use.
- ☞ Flooding can also cause damage to pavement and embankments, increasing maintenance, repair, and replacement costs to municipalities.
- ☞ Extreme precipitation will also increase erosion, decreasing certain infrastructure components design life span.

Aging and Inadequate Stormwater Infrastructure

- ☞ Stormwater infrastructure such as catch basins, pipes, discharge points, and culverts that redirect stormwater runoff can be impacted by flooding and cannot perform their function.
- ☞ Blocking of water can lead to flooding of the area and roadways, potential leading to the closure of nearby roads.
- ☞ Components of stormwater infrastructure are outdated, and increased flows are added stress to the system, more money to maintain and higher replacement costs.
- ☞ Increased development with increased amounts of impervious surface adds the volume of stormwater runoff within more urban area.

Decreasing Water Resources

- ☞ Water quality and quantity are both threatened by projected changing weather events, with threats of flooding, drought, erosion and stormwater runoff.
- ☞ By preventing groundwater from replenishing, additional runoff and sediments can lead to intensify flows in rivers and streams with higher contamination levels of unwanted nutrients and pathogens.

- ☞ Additional water treatment may be necessary, potentially overloading treatment systems.
- ☞ Contamination can pollute sewage, threatening the performance of wastewater treatment facilities.
- ☞ Increased occurrences in flooding can also intensify flows, causing overloading of treatment system.
- ☞ When the ground is frozen, rapid snow melt from warm days or intense rain is not able to infiltrate the ground, leading to drought conditions.

Changing Food and Agriculture Production

- ☞ Merrimack County is the top county in the State for agriculture sales of higher temperatures will promote a longer growing season for most crops, benefiting a larger number of local crops.
- ☞ Negative impacts can potentially alter the region to a climate not suitable for growing valuable local crops such as apples and blueberries.
- ☞ Temperature are expected to slow weight gain and lower the volume of milk produced by dairy cows.
- ☞ Higher overnight temperatures are anticipated to prevent the dairy cows and cattle from recovering from heat stress.
- ☞ Warmer temperatures and increase in carbon dioxide in the air creates a more ideal environment for pests and weeds, potentially increasing the use of herbicides and pesticides on crop.

This is a sampling of how changing climate and severe weather impacts can affect communities in New Hampshire, in the Central NH Region and in Allenstown. Consideration should be given to applicable items during the development and update of the **Hazard Mitigation Plan**, as Actions are completed, and as new Actions are developed for the **Mitigation Action Plan**.

Allenstown’s Hazard Vulnerability Changes Since the 2015 Plan

The locations of where people and buildings are concentrated now or where new lands may be developed have been considered as compared to the changing locations of potential natural hazards in order to best mitigate potential property damage, personal injury or loss of life. These factors assist the community with determining whether Allenstown’s vulnerability to natural hazard events has changed in any way since the 2015 Plan. Facilities and their locations with vulnerabilities to specific natural hazards are listed in APPENDIX A Critical and Community Facilities Vulnerability Assessment.

There have been slight population and housing increases over the last 5 years from 2 COMMUNITY PROFILE, but aging citizens and individuals with limited access and functional needs require more services and attention. Traffic continues to increase within Town because of the NH 28 and US 3 commuter routes through Allenstown. The need for volunteers increases annually as younger people are not joining Town Boards and Committees and few new people volunteer to serve. Membership in the Capital Area Mutual Aid Fire Compact (CAMAFC) Dispatch has enabled for faster emergency response for Fire and Rescue needs. The Town has access to the Central NH Hazardous Materials Response Team and the Central NH Special Operation Unit for special incidents, which creates more training opportunities available. Membership in the Capital Area Public Health Network enables organized public health assistance while membership in the NH Public Works Mutual Aid program enables shared Highway Department labor and vehicles from across the State during times of need.

THE TOWN’S STATEMENTS OF VULNERABILITY CHANGE



Natural Disasters The Town’s overall vulnerability to natural disasters is believed to have STAYED THE SAME over the last 5 years with its increasing population and aging population, the changing climate and weather impacts, and continuing disasters and hazard events, and balanced by regular preparation and mitigation.

Changing Climate

The Town is experiencing increasing temperatures, more rain, less snow, and storms are bigger. The frequency of torrential downpours has increased which impacts waterbodies and the Suncook River, brooks, and waterway, often flooding gravel roads, ditches, and drainage systems. Yet floods have not recently reached the 100-year storm event level. The rain that is unable to run off in the cold months or during the torrential downpours washes out some of the 22 miles of Town maintained roads. Increased traffic accidents result from the weather and road conditions. Fewer homes are located along the river (34 were voluntarily acquired) or have been elevated to alleviate flooding damage. The damages have decreased because the infrastructure is better able to accommodate the extra water flow.

When the normal 4- season climate varies, Allenstown’s businesses (restaurants, inns, recreation businesses) which economically rely on the Bear Brook State Park for recreational tourism dollars are negatively impacted. The unpredictable weather **has not** brought more rain and washouts, more significant or damaging weather events to an infrastructure (roads, water, wastewater) which is aging, unable to keep pace with maintenance and population growth service demands, and cannot be replaced or improved without increased funding. Cleaning of storm drains has enabled better flow.

Town Demographics and Housing Changes

The Town is at greater risk from not only the natural hazards, but also from the changing population characteristics in Allenstown. The affordable housing attracts people because of its location to both quiet streets and nearby services. There is a low inventory of homes for sale in Town. The younger generation leaves the local school system for college and greater employment opportunities and does not often return to the Town after completing their college degrees. Jobs are not available for highly educated young people. While population has increased marginally, additional homes have been built to attempt to fulfill this housing need.

The townspeople are aging and the need for services increases. Senior programming and attendance at the Community Center are limited to one room, servicing a steady crowd of individuals; there is a need to provide more space for activities. Allenstown continues a strong volunteer ethic for Town Committees and Boards and organizations. The older volunteers of the Town, when they retire, are not being replaced with younger volunteers. The existing volunteers have been in place for many years and often feel they cannot leave their positions because there is no one available to take their place.

Growth in Suncook Village brings more risks to this high density area – crashes, human disturbance, potential for fire, and more. Walking and bicycling from Downtown housing to school to recreational parks can create more pedestrian/bicyclist/vehicle crashes.

Economic Changes

Years when the economy is good, both housing growth and business development will occur. In the Town, commercial and industrial uses are encouraged for the tax dollars brought to the community. When the economy has fallen, many businesses have shut down or turned over, resulting in local fewer jobs, job instability, and fewer taxes paid. Most established businesses continue to operate. Many businesses in Town bring risk of hazardous materials incidents or fire because of the nature of their businesses or materials onsite.

There are some employment opportunities available in Allenstown, although most commute using NH 28 or US 3 to employment in Concord, Hillsborough, Lebanon, Manchester, Plymouth or points beyond or between. Continued high local tax rates prevent voters from choosing to set money aside for long-term mitigation planning projects.

Infrastructure Changes

With an older fixed income population, the Town of Allenstown is unable to raise taxes for essential services, so mitigation projects are typically completed on an as-needed basis when a failure necessitates infrastructure improvements. **The ability of the infrastructure to meet the Town's needs is declining.** For instance, there has not been enough funding available to adequately upgrade the Town road network of **22** miles. Grant funding has been secured for several projects. Other Departments with infrastructure (Wastewater, Water Works) encounter similar problems. Mitigation Actions were developed for many aspects of Town infrastructure, yet over the last **5** years, there was not enough funding or the staffing capability to see many of the projects through to completion.

The historic, aging Town Office structure remains outdated for its essential functions and needs to be upgraded to modern security measures, with modifications such as door security and bullet-resistant office reconstruction. Other Town facilities face similar issues.

For all Departments, budgets are extremely limited for infrastructure upgrades. Each Department has their own Capital Improvements Program (CIP) and the Town maintains an active CIP, but the funding is not available to make the required improvements.

The burden on the Town's aging infrastructure is increasing with no end in sight. Allenstown has no Town red listed bridges which is a positive, but the high upkeep and rehabilitation costs of Town roads, buildings, and utilities and the services provided by Departments are too high to be sustainable. A new box culvert bridge needs to be constructed on Mount Delight Road. Not enough funding through taxation is available to repair the existing infrastructure, and grant funds are competitive and require staff management and completion time, and thus the Town is unable to be proactive. As a result, most of Allenstown's infrastructure ages **5** years with every **Plan**.

Overall Natural Hazards Vulnerability

Despite these risks, **Allenstown is also better protected from natural hazards now than in the past.** These protections arise from select infrastructure and service improvements to past vulnerable areas, identified and mitigated where feasible by the Highway

Department, Emergency Management, Police Department, Fire and Rescue Department, and Town Administration, as assisted by the School District, the State of New Hampshire, and memberships agreements with organizations and neighboring towns for aid. Yet balancing the changing climate and potential for hazard events, the overall vulnerability is judged to **have STAYED THE SAME over the last 5 years.**



Human and Technological Disasters The Town’s overall vulnerability to human and technological incidents **is believed to have INCREASED over the last 5 years** with the potential for great escalation in the future. Although the Town **is better protected than in the past** through partnerships and best practices, SOPs, regular Information Technology improvements, to combat human hazards and tightened informational technology services and updates protecting data, the Town has an ongoing struggle to contain the many facets of human and technological hazards.

Human Hazards Vulnerability

Human hazards are unpredictable to a large degree, but preparedness can enable faster, more appropriate emergency response. The School District conduct drills and reviews its Emergency Operations Plan and procedures annually. The Town emergency response (Emergency Management, Fire, Rescue & Police) often participates in drills. All emergency response personnel regularly participates in the newest training related to human hazards.

The Fire and Rescue Department calls and Police Department call volume in general has increased since **2015**. More human hazards have been experienced in the Town, but none that are especially alarming. At the Schools, the increased use of social media is believed to increase the volatile situations and bullying handled by emergency response personnel. Regarding the use of firearms, there are issues with copy-cat situations, and protective “red flag laws” restricting gun access are currently not in place in New Hampshire. Firearm permits issued decreased; however, the pistol permit was eliminated and now these firearms are unable to be tracked along with the other types of firearms sold.

Stress on the general Allenstown population has increased as noticed by Departments and the School District. Mental health and substance abuse issues need to be addressed. Higher stress can result in serious human hazard events such as active shooter, kidnapping, hostage situations, civil disturbance, or public harm.

Technological Hazards Vulnerability

The Town computer system operates “in the cloud” with multiple redundant backups available as a safeguard. A contracted IT company is responsible for maintaining the Town’s files, email, internet, website, and safety protocols. The Wastewater

Department and Pembroke Water Works are fairly safe from cyber-attack because their systems are automated under highly secure systems.

While the Town and School cybersecurity has increased, new technological hazards will continue to be developed and utilized and may be directed toward Allenstown, which is not anticipated to be able to keep pace with advanced, changing technological risk. Valid concerns include Town database and website hacking, although Departments to have redundant back-up systems. While use of technology increases efficiency, the increased reliance on cell phones, electronics, electricity and technology also makes Allenstown's population and Schools more vulnerable to cyberattacks.

Overall Human and Technological Hazards Vulnerability

The Town itself is **better protected** from human hazards by partnerships among Town Department, Allenstown School District, mutual aid agreements, and emergency response and membership with the Capital Area Mutual Aid Fire Compact (CAMACF). However, with all factors considered, the Town's **vulnerability to these hazards have increased** and is anticipated to continue increasing to **2025**.

FUTURE DEVELOPMENT IN ALLENSTOWN

Most of the Town's roads and homes are located in remote locations, but few were newly constructed since the **2015 Plan**. Allenstown is accessible via the primary NH 28 or US 3 State highways and has a vibrant, growing Suncook Village on Main Street. Deerfield Road is the other developed area, and the remaining land remains highly rural outside of these four areas. Residents are aging, and most employed adults either work in Town or commute along NH 28 or US 3 to Concord, Hillsborough, Manchester, or Lebanon or points within or beyond. Since much of the easily developable land in Town has already been built or subdivided, future developments will be built on backlands, near **wetlands** or **steep slopes** or at off Deerfield Road. **Floods, landslides, erosion, and fires** could occur in these potential residential areas. **Severe winter weather, storms** and **wind events** on these hilly locations will bring trees down on roadways, interrupt **power and communication** services and will **flood** ditches and **wash out** roads.

Many large businesses are located in Allenstown, but few subdivisions are anticipated. Infill development between existing built areas is likely to guide residential and commercial development in the community.

Large-scale housing developments are expected to occur in Allenstown, some as multi-unit housing in-fill development in the Downtown/ Suncook Village area in the old mills. The risk of **Suncook River flooding** is present, as occurred in 1936. Eventually, the remaining forested located in northern Allenstown off Deerfield Road will be developed as residential housing. The remote locations are often protected with dry hydrants against severe impacts of **wildfire** and **lightning**, the housing could be vulnerable to **severe winter weather, storms, and flooding of local roads**. There remains the potential for subdivisions in the future when the lots change hands to younger generations ("legacy parcels") if the largest parcels are not

placed under conservation. Conservation land is not a land use favored by the Town because of the need for taxable land.

When developments come before the Planning Board, potential hazards including **flooding, fire, traffic accidents**, and **evacuation** are regularly considered. Developers and the Board try to solve the problem before a project is approved. The existing roads and bridges experiencing **erosion** and **flooding** will need to be upgraded for additional usage. The Town will continue to grow and develop, and attention should be focused on the hazards any new development could face during the consideration process. Techniques to mitigate identified hazards could be undertaken before the facilities are sited and constructed.

The main natural hazards for this urban Downtown/ and rural, forested community remain **earthquakes, wildfire, flood, severe wind events, severe winter weather, debris impacted infrastructure** (trees down on powerlines and trees/powerlines down on roads), **aging infrastructure** and **utility failures**. The Town will need to ensure Town services are not eclipsed by the needs of new development. Any future development in Town could be vulnerable to the various natural hazards identified previously. The Town is heavily forested, rural, with a few agricultural operations and yet highly developed in several areas. New (or replacement) buildings and infrastructure and potential future development appear in **APPENDIX A Critical and Community Facility Vulnerability Assessment** and the existing homes can be reviewed in **APPENDIX F Allenstown Roads Data**.

5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

The Hazard Mitigation Committee developed and/or updated as needed each of the assets tables within this Chapter. Sites were added or removed, and contact information was revised. Modifications were made to the **Primary Hazard Vulnerability** column to reflect changes over the last five years. Revisions were made to the future development section, which now includes a clear table. The Plan’s maps were also updated from the **Allenstown Hazard Mitigation Plan 2015**.

The identification of Critical and Community Facilities within Allenstown is integral to determining what facilities may be at risk from a natural disaster. Every Critical and Community Facility can be damaged by multiple hazards listed in **4 HAZARD RISK ASSESSMENT**. A tabular inventory of facilities in Allenstown is provided in **APPENDIX A Critical and Community Facilities Vulnerability Assessment**. The **911 Street Address** and **Phone** number of each facility is supplied, the assessed **Structure Replacement Value \$**, and the **Primary Hazard Vulnerabilities** to which the facility is most susceptible are listed. The hazards identified are primarily natural disasters but regularly include the technological (and secondary disasters) such as power failure and communications systems failure as well as human hazards such as vandalism/sabotage.

Most sites appear on **Map 3: Critical and Community Facilities** and **Map 4: Potential Hazards and Losses**.

Potential dollar losses for each of the facilities’ **Structure Replacement Value \$** (not land) have been obtained through the Feb 2020 assessing software and the 2019 MS-1 Summary of Inventory Valuation to provide a starting point of the financial loss possible should these structures become damaged or require replacement. These community facility losses are estimated for the value of structure and does not include land (unless indicated), contents, or infrastructure.

Problem Statements were then generated for each type of facility when issues were identified by the Hazard Mitigation Committee during discussion of the facility characteristics and **Primary Hazard Vulnerabilities**. These **Problem Statements** are listed here.

Potential dollar losses to buildings in the Allenstown from flooding and other natural hazards are provided using the methods described in the chapter. The Town’s participation in the National Flood Insurance Program (NFIP) offers a way for individuals to obtain insurance coverage for flooding. The Town’s history with NFIP claims and repetitive losses are examined.

The Chapter provides an inventory of the **Community Facilities** and **Critical Facilities** and the most prevalent hazards to which they are vulnerable. Potential structure damage loss is also provided. The detailed information is available in **APPENDIX A Critical and Community Facilities Vulnerability Assessment**:

Assessment:	Facility Name	Street Address (911)	Phone	Structure Replacement Value* \$	Primary Hazard Vulnerabilities
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Critical Facilities

Critical Facilities are categorized as those Town or State buildings or services that are first-responders in a disaster or that are required to keep the community running during a disaster. The personnel in the Allenstown Town Department facilities, the Town Offices, Fire and Rescue Department, Police Department, Highway Department, Wastewater Treatment Plant, and Transfer Station, provide the services necessary for coordinating every day activities and for emergency response. Other critical partners such as the Schools District provide essential services. Many staffed and unstaffed support facilities are located in Allenstown, such as Community Center, Historical Society, Library, Old Meetinghouse, and more. Maintained roads, dams, and bridges are required for safe operation during both normal times and hazard events. Utilities or utility features such as cisterns, culverts, dry hydrants, telecommunications towers, phone and internet switching stations, and electric transmission lines are included because of the essential communication and utility services provided, and their significant impact on Allenstown residents when they fail. Other **Critical Facilities** would include educational facilities, medical facilities, and emergency shelters.

Many critical facilities are located in Allenstown. The assessed structure/building only value is provided for each facility where available, otherwise estimates are provided to help ascertain the financial impact a disaster can have on the community. However, the assessed structure valuation does not reflect actual structure replacement (rebuilding) which would likely far exceed the valuations in many cases. To view the detailed **Critical Facilities** sites and tables, see **APPENDIX A**. Most of these facilities appear on [Map 3: Community and Critical Facilities](#).

Essential Facilities include: Town Hall (office), Police Department, Fire and Rescue Department (EOC), Highway Department, Transfer Station, Casella Waste Systems Transfer Station, NH DOT District 5 Equipment. **Assessed structure (only) valuation for these essential facilities total \$2.7m.**

Utilities include: MUNICIPAL: Allenstown Wastewater Water Treatment Facility, Bear Brook SP Water Pump Station (2), Pembroke Water Works Well Pump (Map 406, Lot 17), Pembroke Water Works Tank (Hooksett) with Town Repeater tower nearby, River Road Sewage Pump Station 1, Glass Street Sewage Pump Station 2, Wastewater Treatment Underground Lines, Pembroke Water Works Underground Lines. TELECOMMUNICATIONS TOWER: US 3/Allenstown Road/Bailey Avenue US Cellular Communications Tower. DRY HYDRANTS: Deerfield Road Dry Hydrant, Dry Hydrants throughout community. POWER: Eversource Electric Lines, Switching Station, Canal Street Eversource Substation, NH Electric Cooperative Electric Lines, Unutil Electric Lines, Liberty Utilities Gas Lines (consumer gas), Tennessee Gas Transmission Company (Tenneco) Gas Lines, Hodgson Mill Canal (Essex Power). CISTERNS: Clearview Wet Cistern 1, Birchwood Wet Cistern 2, Dowst Wet Cistern 3, Mount Delight Wet Cistern 4, New Rye Wet Cistern 5, Chestnut Wet Cistern 6, Chestnut Wet Cistern 7, Podunk Wet Cistern 8. Only some structure valuations were available. **Assessed values for these utility structures (without electric, gas, water lines or towers) in Town total \$13.4m+.**

Dams include: **2 High Hazard (H) Dams**- 027.12 Garvins Falls Dam (Bow) on Merrimack River, 190.02 Pembroke Dam (Pembroke) on Suncook River. **1 Significant Hazard (S) Dams**- 190.03 Webster Mill Dam (Pembroke) on Suncook River. **5 Low Hazard (L) Dams**- 004.01 Bear Hill Pond Dam on Boat Meadow Brook, 004.10 Catamount Pond Dam on Bear Brook, 004.12 Hall Mountain Marsh Dam on Bear Brook, 004.15 Hayes Marsh Dam on Catamount Brook, 190.01 China Mill Dam (Pembroke) on Suncook River. **2 Non-Menace (NM) Dams**- 004.02 Pembroke Water Works Dam on Boat Meadow Brook, 004.13 Archery Pond Dam on Bear Brook Tributary. **Estimated structure (only) repair values for these dams total \$8.5m.**

Bridges include: **2 TOWN BRIDGES**: 092/066 River Road Bridge (box culvert) over Boat Meadow Brook, Main Street Bridge over Suncook River. **1 RED LISTED (STATE) BRIDGE**: 107/098 NH 28 Bridge over Suncook River. **6 STATE BRIDGES**: 068/055 US Route 3 Bridge over Suncook River/Buck Street, 088/067 NH 28 Bridge over Boat Meadow Brook, 129/103 Deerfield Road Bridge over Deerfield Road, 150/063 Podunk Road Bridge over Catamount Brook, 161/079 Podunk Road Bridge over Bear Brook, 181/078 Deerfield Road Bridge over Pease Brook. **Estimated structure (only) rehabilitation values for these bridges total \$7.8m.**

Shelters, Schools, and Medical Facilities include: Allenstown Animal Hospital [~9 staff], Allenstown Elementary School [~202 children + ~52 staff] SECONDARY TOWN SHELTER with ARC [~58 beds shelter capacity], Armand R. Dupont School [~166 children + ~41 staff], Community Center [~350 standing capacity] PRIMARY TOWN SHELTER with CAPHN [~30 beds shelter capacity] - Boys & Girls Club upstairs [~60-90 capacity up] Senior Center down, Elliot Family Health Center at Suncook [~9 staff + ~3 rooms], Pine Haven Boys Center [~22 children + ~45 staff], Tri-Town Family Dental [~10 staff (1 dr)].

Assessed structure (only) valuation for these schools, medical facilities and shelters total \$7.4m.

PROBLEM STATEMENTS AND EVALUATION

During discussion of these **Critical Facilities**, the Hazard Mitigation Committee identified specific issues or problems that could be further evaluated. **Problem Statements** were developed after ascertaining the **Primary Hazard Vulnerabilities** to the sites and known existing issues. These potential hazards were typically those from the **Hazard Risk Assessment**. The Committee also evaluated these statements to determine whether mitigation actions could be developed.

Essential Facilities Table

- ⊙ A cyberattack would significantly impair Town business in any Department. Town has an intranet. Town records are stored in the cloud. Have 3 daily redundant, cycling systems used for backup. Regular virus checks.
- ⊙ Without internet, the PD and other Departments would not be able to connect to records management. The Town does not regularly lose internet but is always vulnerable to cyberattack. Town, state and county are very aware of this problem when internet goes down.
- ⊙ There has not been an annual Household Hazardous Waste Collection Day (check with Highway Dept) since several years 6-7 years since last HHW day. Town went to Raymond one year. This is a high-cost project.
- ⊙ Any home, facility or business in Allenstown connected to the internet is vulnerable to cyberattack.

Utilities Table

- ⊙ The Pembroke Water Works tank in Hooksett is accessible only via Bailey Avenue (enters onto US 3). If the tank had an immediate release, there would be a significant amount of water coming down onto Bailey Avenue where a large volume of traffic travels and would impede the only access to the tank itself. There is nothing the Town could do if the tank breaks. The water will find its way to Iris Pond. Although catastrophic failure is unlikely, if the tank needs to be painted inside, the water must be released. Water tower maintenance program, tank lid should have a lock, flooding could be an issue based on urgency of draining the tank
- ⊙ The communications tower off US 3 (accessed by Bailey Ave) generator which powers the radio and cell phone tower repeater for the Merrimack County Dispatch and the Allenstown Police Department must be maintained twice per year. The Town provides the key to a Power Generation contractor (a County agent) who must physically access the gate to perform generator maintenance twice per year. It is possible to access the tower via hiking if needed.
- ⊙ The Tennessee Company high pressure gas pipeline, if disrupted, could cause devastating problems to the compact downtown area. The gas may flow down Ferry Street, past Riverside Park, toward the River. If possible, place GIS layer on the Haz Mit Maps.

Dams Table

- ⊙ Should the Pembroke Dam breach or fail, the canal should take most of the water, but the Emerson Mill buildings might be flooded. This section is in Pembroke.
- ⊙ The Suncook River can hold a significant amount of water which could flood part of the downtown. It is not thought to be able to overflow. Perfect storm: Pembroke Dam breach and ice hung up on it, and an ice jam during the winter could hit the Main Street bridge. If this occurred, at the same time could be catastrophic to the Town. Refer to the 2015 Haz Mit Fluvial Erosion Hazard (FEH) Map series.
- ⊙ Webster Mill Dam holds in Iris Pond, so if it were breached, it could have the potential for damaging the Main Street area. Refer to the 2015 Haz Mit Fluvial Erosion Hazard (FEH) Map series.

Bridges Table

- ⊙ If a State bridge collapses and NH 28 or US 3 must be closed, there are no other ways to easily leave the Town. Once bridges are being reconstructed and are closed, there are no detours that are accessible to people that are under 15-20 minutes in travel time. Does NHDOT or Town determine the local detours?
- ⊙ *INFO:* All permanent bridges in Town may survive being underwater in a flood but the road and soil could be eroded. Should inverted metal culverts on NH 28 or on any road could be bent from water force, soil erosion and infrastructure damage might occur.

Shelters, Schools and Medical Facilities Table

- ⊙ Throughout Town, public health social distancing is being practiced to slow the coronavirus. Other outbreaks which are more common (flu, measles) should be vaccinated against and would have minimal susceptibility to reinfect others. Community Center.
- ⊙ Allenstown Elementary (grades K-4) and Armand Dupont (grades 5-8) Schools have a concentrated population of young children which would be devastating in an active shooter situation. Physical barriers in both buildings, security protocol. Regular active shooter drills. Updated EOPs for each school. ALICE is being used and taught.

Many of these problem statements were developed into Actions discussed later in **7 PRIOR ACTION STATUS** and **8 MITIGATION ACTION PLAN**.

CULVERT UPGRADES

A table of culverts in need of upgrade could appear in multiple sections, such as the **Critical and Community Facility Vulnerability Assessment (APPENDIX A)** or with the **Aging Infrastructure** technological hazard. Instead, as critical facilities, they are included here once within this section and also appear within the **Mitigation Action Plan 2020**. Culverts (including box culverts, often considered “almost bridges”) are responsible for carrying large volumes of water safely under roadways, and with the prior severe flooding events it is necessary to keep Town infrastructure in good condition.

Like most communities, the Town of Allenstown has hundreds of culverts and is not known to have a mapped inventory. The Highway Department maintains multiple Town culverts daily (debris removal, clearing, repairs) and attempts to keep pace with culvert upgrades. Yet upgrading all culverts that require this action in the next 5 years would be unrealistic. A prioritization of the culverts in greatest need of upgrade is necessary.

Table 29 displays Allenstown’s initial listing of culverts in need of most urgent upgrade and approximately when the upgrades should occur. The intent is to upgrade all of these failing culverts with either open box culverts or appropriately-sized PVC culverts, respectively. The estimated cost for these projects reaches about **\$303k** for materials, permitting, study and design. Labor for the smaller projects is performed by Town staff and is usually considered an in-kind cost. For larger projects, contracted engineering, design and permitting may need to occur and would be included in the respective cost estimates. The optimal timeframe for these upgrades to protect the Town from **Inland Flooding, River Hazards and Aging Infrastructure** is between **2020-2025** which is within the span of this **2020 Plan**.

**Table 29
Town-Owned Culverts in Need of Upgrade**

Action #	Location of Culvert(s) to Upgrade	# of Culverts	Intersecting Watercourse	Issue(s) with the Culvert(s)	Upgrade Diameter Inches	Estimated Upgrade Year	Total Approx \$ Cost for All
#14-2015	265 River Rd	1	small brook	Pipe is Rotted	20"	2020	\$12,500
#14-2015	168 River Rd	1	Spring runoff	Culvert is Blocked		2022	\$4,500
#14-2015	28 Dodge Rd	1	small brook	Pipe is Rotted	12"	2020	\$5,000
#14-2015	64 Chester Tpke	1	Spring runoff	Pipe is Rotted	12"	2020	\$5,000
#14-2015	15 Chester Tpke	1	Spring runoff		10"	2025	\$5,000
#14-2015	Albin Ave		Suncook River	C/B and Pipes are rotted	8"	2020	\$12,000
#14-2015	105 Wing Rd	2	small brook	Pipe is beginning to show rot	12" and 12"	2023	\$8,500
#16-2015	Mt Delight Bridge	2	Pease Brook	Under Size pipe	30" and 30"	2025	\$250,000
Totals							\$302,500+

Source: Allenstown 2020 Mitigation Action Plan, Highway Department Road Agent June 2020

This table can help the Town develop a formalized culvert upgrade and maintenance planning document. Mapped drainage facilities permit data to be collected and is easily revised and updated. Instant access to culvert and drainage information can be of valuable assistance during **flooding** events, such as **run-off**, **overtop flooding conditions** and **road washouts**. On an annual basis, a culvert maintenance plan can help guide the Town’s decisions of priority replacement, maintenance, and monitoring of culverts and drainage facilities. Budgeting is clearer and may be more successful at Town Meeting with such a plan.

All of the culverts listed in **Table 29** have been developed into **Mitigation Action Plan** items in **8 MITIGATION ACTION PLAN**.

TOWN CULVERTS

Like all communities, the Town owns and maintains dozens of culverts. Most of the culverts are repaired on a regular basis and are upgraded when a specific need arises, such as a flood event. A comprehensive inventory of culverts and their conditions is underway. A partial inventory of culverts is displayed in **Table 30** and includes many of those identified for upgrade in other sections.

**Table 30
Inventoried Town Culverts**

ID #	Road Name Location	Diameter Inches	Length Feet	Material	Condition	Notes
1	Park & Howe	12"		Galvanized		Into C/B
2	4 Howe Ave	12"		Galvanized		Into C/B
3	Bailey Ave					Not in Road C/B out Pipe
4	Ridge Road East	10"		SDR35		C/B Not in Road out on Lincoln
5	8 Oak Street	10"		SDR35		
6	Sunset Ave	12"		SDR35		C/B Not in Road out to Ravine
7	36 Library Street	8"		Steel		C/B Not in Road out to Iris Pond
8	Canal & Reynolds	6"		SDR35		C/B in Road out to River
9	Canal	12"		SDR35		C/B Not in Road out to River
10	9 Houle					Not in Road C/B out Pipe
11	Bartlett at the end	10"		SDR35		Not in Road C/B out Pipe
12	Dodge Rd	8"		Steel		
13	Dodge & River Rd	12"		Galvanized		At Intersection
14	168 River Rd			Granite	Bad	Blocked and Does not work
15	160 River Rd	8"		SDR35		C/B in Road into the Brook
16	133 River Rd	10"		Hand core		C/B in Road into the Woods
17	11 River Rd			Granite		Roadway
18	River Rd & Turnpike Intersection	8"		Cement		Pipe in Road into C/B
19	Chester Turnpike	8"		SDR35		C/B in Road into Swamp
20	Chester Turnpike & Granite St	12"		Galvanized		Roadway
21	Granite St (Keith side of the road)	24"		Hand core		Side of the Road Ditch line to the Brook
22	134 Granite St	8"		Hand core		C/B in Road into the Swamp
23	138 Granite St	6"		Hand core		Drywell under drain in Stone to Swamp
24	144/146 Granite St	6"		Hand core		Drywell under drain in Stone to Swamp
25	198 Granite St	12"		SDR35		Roadway Brook to C/B to Brook
26	30 Townhouse	2 30"		Cement		Roadway
27	258 River Rd	10"		SDR35		Roadway to Brook
28	264 River Rd	20"		Hand core		Roadway to Brook
29	265 River Rd	20"		Galvanized	Bad	Roadway to Brook
30	5 Gilbert Rd	14"		Hand core		Roadway New in 2012
31	33 Gilbert Rd	6"		SDR35		Roadway Drywell to Woods

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ID #	Road Name Location	Diameter Inches	Length Feet	Material	Condition	Notes
32	New Rye	5'		Galvanized		Roadway to Brook
33	45 New Rye	10"		Galvanized		Roadway
34	70 New Rye	12"		Galvanized		Roadway
35	105 Wing Rd	16"		Galvanized		Roadway to Woods
36	105 Wing Rd	10"		SDR35/Cement		Roadway to Woods
37	324 Deerfield Rd	2'		Cement		Roadway
38	Podunk Bridge					Box Culvert Roadway
39	341 Deerfield Rd	12"		Cement		Roadway
40	367 Deerfield Rd	10"		Cement		Roadway
41	420 Deerfield Rd	18"		Cement		Roadway
42	Deerfield Rd Wason's Bridge	8'		Galvanized		Roadway
43	16 Mt Delight	30"		Galvanized		Roadway
44	26 Mt Delight	12"		SDR35		C/B in Road to Swamp
45	37 Mt Delight Bridge	40"		Cement	Bad	Roadway
46	37 Mt Delight Bridge	20"		Galvanized	Bad	Roadway
47	Mt Delight Top of the Hill Town line	12"		SDR35		Roadway
48	32 Dowst Rd	10"		SDR35		C/B in Road to Swamp
	Chestnut Drive				New	8 new culverts

Source: Allenstown Highway Department Road Agent, June 2020

MOST VULNERABLE ROADS AND NEIGHBORHOODS

The Town of Allenstown has about **60 total** miles of roadway including Town maintained Class V (both paved and unpaved roads), unmaintained Class VI roads, private roads and State highways. Many of these roads are remote, have significant elevation changes, or are dead-end roads or cul-de-sacs with only one way in and one way out. Allenstown residents reside in clusters, such as Suncook Village area, NH 28 corridor, US 3 corridor, or the Deerfield Road area. When trees and powerlines fall onto roads or floods or wildfire hazards are occurring, evacuation of many of these neighborhoods would be difficult. The Town’s road mileage, classification, and surface type are displayed in **Table 31**.

**Table 31
Town Road Length and Classification**

Allenstown Roads Classification	Total Length in Miles	Total Length in Feet	Miles Paved	Miles Unpaved
Class I (State Primary)	4.14	21,832.80	4.14	---
Class II (State Secondary)	4.24	22,371.36	4.20	---
Class III (State Recreational)	4.06	21,447.36	4.05	---
Class V (Town Maintained)	21.96	115,969.92	N/A	N/A
Class VI (Town Unmaintained)	7.71	40,719.36	---	7.71
Private	17.38	91,761.12	~11	~6.5
Road Length Totals	59.5	314,101.9		

Source: CNHRPC compilation of data from Allenstown CIP, April 2020

The Town of Allenstown is responsible for **22** miles of Town owned roads, some of which are paved and **some** unpaved. Compared to other medium-sized Central NH region communities, the Town of Allenstown hosts fewer than average roadway miles, especially for a municipality of its population.

Based on the Road Surface Management System data in the **2020 Allenstown CIP**, the Town roads in greatest need of upgrade (by surface condition, importance traffic volume) are:

- >> Canal Street
- >> River Road
- >> Chester Turnpike
- >> School Street
- >> Deerfield Road
- >> Turnpike Street
- >> Granite Street
- >> Valley Street
- >> New Rye Road

Emergency response may focus their majority of efforts on situations, facilities, homes and infrastructure along these roads because of the number of people on these roads. Awareness of potential vulnerabilities may help with evacuation and other emergency planning as well as long term mitigation projects in these areas.

ONE-EGRESS ROADS

The Town of Allenstown has about **7** miles of roadway, including Town maintained Class V, unmaintained Class VI and private roads, that are dead-end roads or cul-de-sacs with only one way in and one way out. Hundreds of people live in approximately **434** homes along roads which have no secondary means of egress. Evacuation of many of these neighborhoods, most of which are forested, would be difficult. All identified one-egress roads are displayed in **Table 32**.

Table 32
One-Egress Roads and Cul-de-Sacs

One-Egress Road Name	Road Class (Class V, Class VI or Private)	Specific Hazard Concerns	Condition (Good, Fair or Poor)	Approx. Length in Feet	Approx. # of Homes on Rd
Hillside Dr	Private	Tree Fall, Winter	Poor	672	98
Notre Dame Ave	Class VI	Winter, Tree Fall, Erosion	Good	1,320	78
Bartlett St	Class VI	Tree Fall, Winter	Poor	310	16
Albin Ave	Class VI	Flood, Erosion, Tree Fall, Winter	Poor	1,169	15
Brookside Terr	Private	Flood, Erosion, Tree Fall, Winter	Fair	1,108	15
Summers Ave	Class VI	Tree Fall, Winter	Good	935	13
Dowst Rd	Class V,VI	Tree Fall, Winter	Good	2,260	12
Sargent St	Class VI	Tree Fall, Winter	Good	389	12
Ridge Rd	Class VI	Tree Fall, Winter	Fair	657	11
Martinson Ln	Class VI	Tree Fall, Winter	Good	1,229	10
Sunrise Ln	Private	Tree Fall, Winter	Fair	387	10
Swiftwater Dr	Private	Flood, Erosion, Tree Fall, Winter	Fair	1,320	10
Campbell St	Class VI	Erosion, Tree Fall, Winter	Good	584	8
Cottage Way	Private	Flood, Erosion, Tree Fall, Winter	Good	338	8
Sunnyside St	Class VI	Tree Fall, Winter	Good	635	8
Wing Rd	Class V,VI	Tree Fall, Winter	Poor	5,286	8
Garden Dr	Private	Tree Fall, Winter	Fair	548	7
Houle Ave	Class VI	Tree Fall, Winter	Poor	340	7
Kimberly Ln	Class VI	Tree Fall, Winter	Fair	485	7
Lincoln St	Class VI	Erosion, Tree Fall, Winter	Good	712	7
Sunset Ave	Class VI	Tree Fall, Winter	Good	565	7
Als Ave Ext	Class VI	Tree Fall, Winter	Good	391	6
Court St	Class VI	Tree Fall, Winter	Good	377	6
Dodge Rd	Class V, VI	Tree Fall, Winter	Good	3,928	5
Ray Ct	Class VI	Tree Fall, Winter	Fair	356	5
West St	Class VI	Tree Fall, Winter	Fair	488	5
Bunny Ln	Private	Tree Fall, Winter	Fair	542	4
Fanny Dr	Private	Flood, Erosion, Tree Fall, Winter	Fair	905	4
Kenwood Dr	Class VI	Tree Fall, Winter	Good	559	4
Birchwood Dr	Class VI	Tree Fall, Winter	Good	477	3
Dawn Dr	Private	Tree Fall, Winter	Fair	410	3
Elm St	Class VI	Tree Fall, Winter	Fair	355	3
Wall St	Class VI	Tree Fall, Winter	Good	569	3

One-Egress Road Name	Road Class (Class V, Class VI or Private)	Specific Hazard Concerns	Condition (Good, Fair or Poor)	Approx. Length in Feet	Approx. # of Homes on Rd
Cedar Circle	Class VI	Tree Fall, Winter	Good	333	2
Chester Tpke	Class VI	Tree Fall, Winter	Poor	344	2
Clement Rd	Private	Flood, Erosion, Tree Fall, Winter	Poor	3,044	2
Diane Ave	Class VI	Erosion, Tree Fall, Winter	Fair	147	2
Roy Ln	Private	Tree Fall, Winter	Fair	191	2
Spring St	Class VI	Tree Fall, Winter	Good	211	2
Verville Rd	Class VI	Tree Fall, Winter	Good	333	2
Bourque Rd	Private	Flood, Erosion, Tree Fall, Winter	Poor	878	1
Podunk Rd	Class VI	Flood, Erosion, Tree Fall, Winter	Fair	397	1
Ferry St	Class VI	Flood, Erosion, Tree Fall, Winter	Good	1,302	0
Lavioe Dr	Class VI	Tree Fall, Winter	Good	345	0
Pine Haven Dr	Private	Tree Fall, Winter	Good	1,421	N/A
Total Homes on One Egress Roads in Allenstown					434
Total Feet One-Egress Roads				39,552 feet	
Total Miles One-Egress Roads				7.0 miles	

Source: Allenstown Highway Department Road Agent, June 2020

Community Facilities

The **Community Facilities** inventoried in **APPENDIX A** are generally vulnerable to disasters and in need of careful consideration. Some facilities contain vulnerable populations, other community facilities are neighborhoods, roads with many homes or roads with only one access, places where people gather, the economic assets of the community, buildings or sites that contain the history of the town, or facilities which could release hazardous materials during hazard or disaster events. While **Critical Facilities** are strong with emergency preparedness and mitigation measures, **Community Facilities** are typically not as well attuned to these issues and would require more emergency services, and perhaps the first check, during a hazard event disaster.

Vulnerable Populations include: Cottage Way Townhouses [~6 units], Bear View Crossing Cooperative (formerly Holiday Acres Mobile Home Community) –[39 homes on Parkwood Dr, 31 homes on Lane Dr, 12 homes on Mark Dr, 25 homes on Cheryl Dr, 23 homes on Marilyn Dr, 5 homes on Glenn Dr, 38 on Roland Dr, 42 on Fullman Cir, 5 on Dinan Dr, 25 on Emile Dr, 8 on New Yorker Dr, 11 on Neil Dr, 8 on Merissa Dr], Catamount Hill Cooperative [32 homes], Garden Drive (formerly Bear Brook Gardens Two) [7 homes], Old Towne Homeowners Cooperative (formerly Bear Brook Gardens One) [24 on Edgewood Dr, 25 on Hillside Dr, 27 on Woodlawn Dr, 4 on Pinecrest Ci, 7 on Laurel Ave, 9 on Boulder Cir], River Pines Cooperative (formerly Bear Brook Terrace) [~15 homes], Rogers/Betty Lane Manufactured Housing Park (Lot 223) [~5 homes], Suncook Pond Senior Housing [9 buildings (60 units)], Suncook Senior Center [~350 capacity, upstairs ~60-90, downstairs ~172], Sunrise Hill Apartments [5 buildings (36 units)], Swiftwater Condominiums [41 units], Tender Years Child Care Center [~60 children + ~8 staff]. See also Shelters, Schools and Medical Facilities. **Assessed structure (only) valuation for these vulnerable population facilities total \$28.8m.**

Economic Assets include those **businesses and services** that employ a large number of people or contribute to the local economy: Allenstown Aggregate [~5-6 staff, ~40-60 trucks/day], Allenstown Professional Park [~15 staff], Aubuchon Hardware [~10 staff], Country Diner, Dunkin Donuts [~5 staff], Family Dollar [~5 staff], Hudson Quarry [~3 staff], Johnson's Flower and Garden Center [~3 staff], NH Optical Laboratory [~6 staff], Olympus Pizza, Rite Aid [~16 staff], Subway Restaurant, Sully's (Grocery Store) [~50 staff], Suncook Business Park [~25 staff]. **AGRICULTURAL:** Bear Brook Stables (Horses), Edelweiss Farm (horse stable), Fiddler's Farm & Construction (Poultry, Eggs, Produce) [~2 staff, 6-8 seasonal workers], Fort Mountain Land & Timber, River Road Horse Stable, McNamara Hay Fields. See also **Hazardous Materials** facilities. Only some structure valuations were available. **Assessed structure (only) valuation for these economic asset facilities total \$7.3m+.**

Hazardous Materials Facilities include: 3B Auto & Truck LLC, Allerdice Automotive Repair, 2D Diesel (Auto repair shop), GMS Hydraulics Inc (Lifts), Vehicle Storage Solutions (RVs), Beudet Automotive Center, Best Betts Pools LLC, Circle K Convenience Store Gas Station, Five and Dime Auto Sales, Granite State Courier,

HK Auto & Equipment Repairs, JPI Pyrotechnics, LLC, JR Cycle Repair Shop, Keith's Truck Service, Mega X Convenience Store Gas Station, Perfect Fit (Kennebunk Weavers) / Old Mill Hydroelectric (Eversource), Recycling Mechanical of New England (Packers, Bailers), Repair Solution (Auto Body Shop), Suncook River Convenience Store/ Engen. See also **Economic Asset** facilities. Only some structure valuations were available. **Assessed structure (only) valuation for these hazardous material facilities total \$3.5m+.**

Cemeteries and Churches include: CHURCHES: St. Jean The Baptist Parish [~400 capacity], Sunrise Baptist Church [~75 capacity]. CEMETERIES: Batchelder-Blaisdell Cemetery, Batchelder-Hayes Cemetery, Burgin Family Cemetery, Cate-Batchelder Cemetery, Clark Burial Ground Cemetery, Dowst-Allen Cemetery, Evans-Batchelder Cemetery, Kenison Corner – east Cemetery, Kenison Corner – west Cemetery, Lane-Lear Cemetery, Leavitt Cemetery, Philbrick Cemetery, St. Jean Baptiste (new) Cemetery, St. Jean Baptiste (old) Cemetery. **Assessed structure (only) valuation for church facilities and headstone replacement estimates for cemeteries (\$50k each) total \$2.1m.**

Historic Sites and Buildings include: Bear Brook State Park Civilian Conservation Corps, China Mills, Historic Home (Foote), NH Snowmobile Museum, Old Allenstown Meeting House, Old Allenstown Suncook Valley Railroad Station (private home). Only some structure valuations were available. See also **Recreational and Gathering Sites. Assessed structure (only) valuation for these historic facilities total \$5.2m+.**

Recreational and Gathering Sites of both land and buildings include: Allenstown Elem Sports Field [~300 capacity], Allenstown Public Library [~20 capacity], Bear Brook State Park [~hundreds capacity], Boys & Girls Club [~60-90 children], Upper Elem Sports Field [~300 capacity], Volunteers Park [~300 capacity], Whitten St Park (Playground and Basketball) [~100 capacity], Town Hall Park - Blueberry Express Lawn Park [~75 capacity], Ronnie Pelissier Boat Launch [~1-2 vehicles], Bridge Park at Double Decker Bridge. Some of these sites can be **Economic Assets** to the Town even if the land is untaxable. Only some structure valuations were available. **Assessed structure (only) valuations for the recreational facilities total \$4.2m+.**

Future Development includes mostly residential development potential as most of the land in Allenstown is rural. FUTURE DEVELOPMENTS As of **03-20**, there are several approved but unbuilt developments or potential developments according to the Planning Board: Assisted Living, China Mill Redevelopment [Perfect Fit (Kennebunk Weavers) / Old Mill Hydroelectric (Eversource)], Lots behind Circle K, Map 106, Lot 18 (Allenstown Aggregate), Map 108 Lot 3 (Plourde), Map 109 Lot 95 (CMBE, LLC), Paintball Park. LEGACY PARCELS, family legacy large acre lots with future development potential, include a selection of the largest, non-conservation parcels over **50** acres: McKay/Ordzie Lot (Map 411, Lot 1), Ferry Street LLC House Lot (Map 115, Lot 3), Mulaire Backland Wood Lot (Map 406, Lot 12), Bailey Farm Land (Map 114, Lot 3), Gallager Wood Lot (Map 407, Lot 23), Philie Backland Lot (Map 407, Lot 36), Fleury Backland Wood Lot (Map 406, Lot 10), Cofram Backland Wood Lot (Map 407 Lot 34-1), Beaucher Wood Lot (Map 401, Lot

6), Eames Wood Lot (Map 401, Lot 14), Beaucher Wood Lot (Map 401, Lot 4-2), Batchelder Wood Lot (Map 402, Lot 154), McGourty House Lot (Map 408, Lot 3), Verville Wood Lot (Map 406, Lot 11), Sawyer House Lot (Map 408, Lot 8), Eames Wood Lot (Map 402, Lot 118), Dussault Wood Lot (Map 101, Lot 34), Mulaire Backland Wood Lot (Map 406, Lot 13), Hoelzel Wood Lot (Map 402, Lot 119), Beaucher Wood Lot (Map 401, Lot 4-1), Eames Wood Lot (Map 402, Lot 121). There are many more large family legacy parcels which could be identified with an inventory. LARGE-SIZED LOTS IN ALLENSTOWN FOR SALE 03-20: lots for sale during this snapshot include – Pinewood Road Lot (Map 105, Lot 3, Stauffacher), Dodge Road Backland Lot (Map 406, Lot 5, Carter), Dowst Road Lot (Map 402, Lot 110, Musto), Allenstown Road/Hooksett Town Line Lot (Map 108 Lot 7, Bailey), Bear Brook Stables. **Assessed valuation for the Potential/Approved PB Developments (LAND) Legacy Parcels (LAND) and Lots for Sale properties (LAND) only totals \$7.0m.**

PROBLEM STATEMENTS AND EVALUATION

During discussion of these Community Facilities, the Hazard Mitigation Committee identified specific issues or problems that could be further evaluated. **Problem Statements** were developed after ascertaining the **Primary Hazard Vulnerabilities** to the sites and known existing issues. These potential hazards were typically those from the **Hazard Risk Assessment**. The Committee also evaluated these statements to determine whether mitigation actions could be developed.

Vulnerable Populations Table

- ⊙ Swiftwater Condominiums, home to about 100 people, are especially vulnerable to Suncook River inundation flooding and channel movement because of their location along the intervale.
- ⊙ Manufactured housing parks are vulnerable from high wind events, trees, winter events. Bear View Crossing updated some of their homes and many are now new doublewides, but the other parks' homes, including Old Towne, are old and not updated. This means they are do not comply with current building and life safety codes but are grandfathered. Homes that are replaced must meet the new codes. Many people in the older homes are elderly and cannot afford updates. Town has an ordinance to ensure updates are done when people make improvements.

Economic Assets Table

- ⊙ Flooding is experienced at Olympus Pizza during heavy rain. Puddle near the back door. The slope of Granite Street channels the water into the business. Would encourage planting greenery, but all pavement. The catch basins are too high, might have to berm or curb the water to redirect to the nearest storm drain, although those are higher up the hill. Mitigation is cost prohibitive and not the responsibility of the Town.
- ⊙ During the heavy, concussive blasting at Allenstown Aggregate felt by downtown residents, the ledge can slide down resulting in a landslide. Much care is taken. After each blast, the hill will be loosening overall and affecting the integrity of the existing land around. Blasting is performed under controlled

situations, about once every other month. Can only blast during certain hours and must call abutters day before and ½ hour before. Notifies Town, which notifies all Depts. Excavation Regulations and PB procedures like a site walk in place before annual renewal. Abutters would complain, have not to date.

- ⊙ Potential food contamination from stores, restaurants and food producers in Town would result in a widespread public health issue. No local health inspection program, but state licensing and inspection is posted online. Practiced a POD scenario at Bow High School.
- ⊙ The young children and seniors using the Community Center's (Boys & Girls Club, Senior Center) public facilities form a vulnerable population in close proximity, as related to public health. The two Schools also fit into this category. Facilities are closed during public health events. People can pick up meals but cannot stay. Takeout meals are served to go. [Note that the Community Building is leased and the Town may not have the power to close building, the tenant does].

Hazardous Materials Table

- ⊙ A severe earthquake can cause any of the haz mat businesses to release their contaminants into the stormwater system or groundwater table.
- ⊙ *INFO*: Secondary egress is being required for the incoming site plan assisted living facility on NH 28 / Chester Turnpike for evacuation. (Business across the street, pharmaceutical, records storage, or vehicle crash.) Secondary access is being required for this facility. Not required from PB, usually from Fire or Police Dept.

Cemeteries & Churches Table

- ⊙ Old Kenison East and West Cemeteries have about 1 dozen graves sunken 2-3 feet that should be filled in. Burial materials and remains can be exposed during severe weather and as land subsides over time. Cemetery maintenance is limited to mowing usually. Some other old cemeteries may be experiencing similar issues. Town has a Cemetery Society
- ⊙ Trees can fall down onto gravestones and break them during bad ice storms or wind & rain storms. Those stones set near the edge of the tree line are particularly vulnerable.

Historic Sites & Buildings Table

- ⊙ Wildfire, lightning, and windstorm, ice storm or severe earthquake could be detrimental to the historical sites of Allenstown, particularly in Bear Brook State Park. Fire tower staffing – Kearsarge is operational but not staffed until high fire danger. Oak Hill sometimes staffed as well during high fire days. State has been using air patrols. Drones only used during an incident, not for fire danger.
- ⊙ Excessive traffic on Deerfield Road could cause accidents that impact the Old Meetinghouse. Trees have been trimmed back.
- ⊙ Power outages could impact the entire town during holidays and special events, such as Old Home Day. Emergency personnel may be impacted.

Recreation & Gathering Sites Table

- ⊙ If the Whitten Street Park playground and basketball recreational facilities are disrupted from any natural hazard event, the youth could cause mischief (such as rocks thrown on the Community Center roof). Neighbors watch for mischief. Security cameras already in place.
- ⊙ INFO: Although the Allenstown Public Library is closed down due to coronavirus, people can access materials digitally if they have internet. Some homes may not have internet. Town has a cable internet franchise agreement with Comcast Xfinity.
- ⊙ Not everyone can access the internet (Comcast), so the School system must find a way to enable students to access the internet to continue schooling. Comcast has a program available now for free access and is providing hotspots, while the schools are giving out Chromebooks to students. Businesses and public spaces are opening up hot spots at existing connections for good signals in some areas.

Future Development Table

- ⊙ Future development on a large backland lot would require a new or upgraded road to Town standards to access the lots, requiring both Planning Board and Board of Selectmen approval. Building and other permits required too. Wetlands and easements may impede sale and building of backlots. The owner or developer may not know or disclose the situation.
- ⊙ Should multiple large lots or legacy lots become developed within a short period of time, they could overwhelm the Town services in the Main Street area (water & sewer) or for the rural section of Town, schools, fire, police, rescue, highway, services would be impacted. Impact fees for all Town services are being considered through the CIP. Sewer has a \$4,500 connection fee for a new user (3 bedroom home), and developer would have to pay for connection to the new subdivision.

Many of these problem statements were developed into Actions discussed later in **7 PRIOR ACTION STATUS** and **8 MITIGATION ACTION PLAN**.

Potential Losses from Natural Disasters

Natural disasters, including floods, wind events, severe winter storms and ice storms, secondary disasters as a result of the natural disasters (such as power loss) and to a lesser degree, human and technological hazards as documented in **4 HAZARD RISK ASSESSMENT** have occurred in Allenstown. This section estimates Town-wide structure/building damage in Town from natural hazard events. It is difficult to ascertain the amount of damage caused by a hazard because the damage will depend on the hazard's location and magnitude, making each hazard event somewhat unique. Human and technological hazards are typically even more incalculable. Human loss of life was not included in the potential loss estimates for natural hazards, but could be expected to occur, depending on the severity of the hazard.

While this Plan focuses on being pro-active in those geographic areas of Allenstown most prone to recurring hazards (like flooding), some initial estimates of measurable property damage and building damage have been discussed by utilizing simple techniques such as the numbers of structures and assessed valuation. This two-dimensional approach of calculating dollar losses from tangible structures offers a basic yet insightful tool to begin further loss estimation analyses.

TOOLS FOR COMMUNITIES WITH GIS

For gauging more three-dimensional estimation of damages, FEMA has developed a software program entitled HAZUS-MH (for multi-hazard), which is a powerful risk assessment software program for analyzing potential losses from floods, hurricane winds and earthquakes. In HAZUS-MH, current scientific and engineering knowledge is coupled with the latest Geographic Information Systems (GIS) technology to produce estimates of hazard related damage before, or after, a disaster occurs. Developed for ARCGIS which produced the *Maps* for this Plan, HAZUS-MH takes into account various effects of a hazard event such as:

- Physical damage: damage to residential and commercial buildings, schools, critical facilities, and infrastructure;
- Economic loss: lost jobs, business interruptions, repair and reconstruction costs; and
- Social impacts: impacts to people, including requirements for shelters and medical aid.

Federal, State and local government agencies and the private sector can order HAZUS-MH free-of-charge from the FEMA Distribution Center. Allenstown should first ascertain whether a municipal geographic information system (GIS) of hardware and software is appropriate, and if so, consider training staff to perform models. With many Town existing and under-development infrastructure GIS data layers available, HAZUS-MH could prove very helpful for estimating losses for the community on a disaster-specific basis. However, much staff time is necessary to train staff and maintain a GIS system. Official map generation is typically subcontracted out to other agencies now, including the mapping and appraisal companies used by the Town and the Central NH Regional Planning Commission who developed the *Maps* for this **Hazard Mitigation Plan**.

METHODS OF POTENTIAL DOLLAR LOSSES BY NATURAL HAZARDS

A more manageable technique was used for loss estimation for the purposes of this **Hazard Mitigation Plan Update**. Natural hazard losses are calculated based on dollar damage ranges over the entire community, or in the case of flooding, buildings in the Special Flood Hazard Areas (SFHAs) are counted and their value is collected. The number of total parcels in the community as of **February 2020** is **1,990**. Using Allenstown’s MS-1 **2019** valuation data, **the total assessed value of all residential and non-residential structures ONLY in Allenstown (\$211,018,500) is the basis for loss estimation calculations. Land and utilities are not included here.**

Potential Building Dollar Losses by SFHA Flooding

Using geographic information system (GIS) technology, parcels with buildings within the floodplain were identified using Allenstown’s online digital tax maps developed by Cartographic Associates Inc (CAI) in **June 2020** that contained assessing data, and geospatially overlaid this data with the **2010** FEMA Digital Flood Insurance Rate Maps (DFIRMs) digital map. An intersection operation identified all the parcels with buildings in the SFHAs, although this evaluation does not determine whether the building itself is situated within floodplain boundaries. **Building Type** was characterized into one of four categories, single-family homes, multi-family homes, manufactured homes, and non-residential buildings. Building number and value were excerpted from the assessing database. **Table 33** summarizes this data, identifying **150** primary buildings by address in the SFHA. **Land value, building contents value and infrastructure were not considered in these calculations.** Allenstown parcels and assessing data can be found at www.axisgis.com/Allenstownnh.

Table 33
Building Value in the Special Flood Hazard Areas (SFHAs)

Building Type	Number of Buildings	Total Value of Buildings in SFHA	Average Replacement Value
Single Family Homes	114	\$11,380,300	\$99,827
Multi-family Homes	9	\$2,534,100	\$281,567
Manufactured Homes	10	\$306,400	\$30,640
Non-Residential Buildings	17	\$6,200,700	\$364,747
Totals	150	\$20,421,500	-----

Sources: Town Assessing June 2020, Building Admin Assistant

In **Table 33**, digital analysis and human interpretation identified **114** single family residential homes, **9** multi-family homes, **10** manufactured homes, and **17** non-residential buildings are situated within the Special Flood Hazard Areas (SFHAs). As the Town’s total number of **2018** housing units is estimated at **1,093**, about **13%** of Allenstown’s residences seem to be located in a floodplain area. The average replacement value is **\$100k** for a single-family home or **\$282k** for a multi-family home, **\$31k** for a manufactured home, or **\$365k** for a non-residential building in the SFHA. The total value of all buildings in the Special Flood Hazard Areas from this analysis is about **\$20.4m**.

There are alternative ways to calculate potential SFHA losses. In the following tables, the average building replacement value was calculated by adding the assessed values of all structures in the special flood hazard areas and dividing by the number of structures. The Federal Emergency Management Agency (FEMA) has developed a process to calculate potential loss for structures during flooding. The potential loss was calculated by multiplying the average replacement value by the percent of damage expected from the hazard event, and then by multiplying that figure by the number of structures. The costs for repairing or replacing infrastructure such as bridges, railroads, power lines, roads, drainage systems, telephone lines, or natural gas pipelines, and land value and the contents of structures have not been included in these estimates.

Table 34 represents the **worst case scenario of all** single-family homes, multi-family homes, manufactured homes, and non-residential buildings within the Special Flood Hazard Area that are damaged by a flood hazard event.

Table 34

Dollar Damage Ranges for Total Buildings in Special Flood Hazard Areas (SFHA)

Building Type	Total Value of Buildings in SFHA	Total Value of Potential Damages in SFHAs by Respective Building Type		
		Eight-Foot Flood 49% Damage	Four-Foot Flood 28% Damage	Two-Foot Flood 20% Damage
Single Family Homes	\$11,380,300	\$5,576,347	\$3,186,484	\$2,276,060
Multi-Family Homes	\$2,534,100	\$1,241,709	\$709,548	\$506,820
Manufactured Homes	\$306,400	\$150,136	\$85,792	\$61,280
Non-Residential Buildings	\$6,200,700	\$3,038,343	\$1,736,196	\$1,240,140

Sources: See **Table 33**; FEMA

If **all 114** single family homes were damaged by a **Two-Foot Flood (20% Damage)**, the dollar damage to the buildings *only* could be **\$2.3m** while an **Eight-Foot Flood (49% Damage)** could cause **\$5.6m** in structure damage. If **all 9** multi-family buildings in the SFHA were damaged by a **Two-Foot Flood**, the dollar damage to the buildings *only* could be **\$507k**, while an **Eight-Foot Flood** could cause **\$1.2m** in structure damage. The **10** manufactured homes identified in the SFHA would have a smaller **Two-Foot Flood (20% Damage)** (**\$61k**) while the **17** non-residential buildings could have damage valued at **\$1.2m** (but **\$3.0m** in an **Eight-Foot Flood**). Dollar damage estimations vary according to the standard percentages of damage levels associated with flooding levels set by FEMA.

Table 35 also represents the **worst case scenario, but of individual** single-family homes, multi-family homes, manufactured houses, and non-residential buildings within the Special Flood Hazard Area that are damaged by a flood hazard event.

Table 35

Dollar Damage Ranges for Individual Buildings in Special Flood Hazard Areas (SFHA)

Building Type	Average Value of Individual Buildings in SFHA	Individual Value of Potential Damages in SFHAs by Respective Building Type		
		Eight-Foot Flood 49% Damage	Four-Foot Flood 28% Damage	Two-Foot Flood 20% Damage
Single Family Homes	\$99,827	\$48,915	\$27,952	\$19,965
Multi-Family Homes	\$281,567	\$137,968	\$78,839	\$56,313
Manufactured Homes	\$30,640	\$15,014	\$8,579	\$6,128
Non-Residential Buildings	\$364,747	\$178,726	\$102,129	\$72,949

Sources: See Table 33; FEMA

One (1) single family home averages \$20k when damaged by a **Two-Foot Flood** while an **Eight-Foot Flood** could cause \$49k in damages. One (1) multi-family home compares at \$56k for a **Two-Foot Flood** structure damages and at \$134k for an **Eight-Foot Flood**. One (1) manufactured home compares at \$6k for a **Two-Foot Flood** structure damages and at \$15k for an **Eight-Foot Flood**. One (1) single non-residential building in the SFHA is also could yield \$73k for a **Two-Foot Flood** damages and at \$179k for an **Eight-Foot Flood**.

Although not an accurate assessment, these dollar damage ranges for **Inland Flooding** in the designated floodplains (SFHAs) provide a general sense of the scale of potential disaster and financial need in the community during flooding events.

Potential Building Dollar Losses by Other Natural Hazards

Flooding is often associated with heavy rains and flash floods, hurricanes, ice jams, rapid snow melting in the spring, and culvert washouts. These are all types of flooding hazards discussed or evaluated previously but can also occur outside of the SFHAs.

Building damage by natural disasters in New Hampshire is not limited to SFHA flooding alone, which is easier to quantify and predict. Simple calculations can be made based upon generalizations of a disaster impacting a certain percentage of the number of buildings in the Town. **The MS-1 2019 assessed value of all residential, commercial, and industrial structures in Allenstown is \$211,018,500 (no land) on 1,990 parcels.** Disaster damages are often illustrated in the following section utilizing a percentage range of town-wide building damage. At 1,093 housing units in Allenstown estimated from the 2018 NH Office of Strategic Initiatives (NH OSI) housing estimates, any type of disaster impact to 10% of Allenstown housing units would yield 100 damaged homes.

The inventory of Town sites or buildings in **APPENDIX A Critical and Community Facilities Vulnerability Assessment** indicates which hazards each site is most susceptible to and provides its assessed valuation. This dollar value can be used as a damage estimate from the natural hazard events listed below. Yet the potential losses discussed in this section involve all buildings across the community to provide a more distinct portrait of potential losses using the assessed valuation of all town buildings.

Damages from natural hazards to anything other than buildings, such as infrastructure, land, humans or building contents, are not examined here. Specific individual studies would be needed to assess more detailed scenarios. Following are potential building-only dollar damages from select natural hazards.

Drought

Drought is often declared on state-wide or region-wide basis, and sometimes by individual town. Dollar damage caused by drought would be difficult to quantify but would most likely impact the agricultural and economic base of a community. Although everyone could be charged to conserve water, agriculture and forestry operations would be most affected and the risk of wildfire increases.

As physical damage is usually isolated to specific locations, the effects of potential disasters at certain facilities could be researched utilizing the Town's assessor's database for valuation on targeted land. Agricultural land may be among the most affected by drought. Many farm operations have been inventoried in Allenstown. People who rely on private well water have found their dug wells running dry in **2015-2016** and again in **2018** and **2020** while those obtaining their water from Pembroke Water Works were informed to conserve water. Agricultural operations run the risk of high damage from **drought** which also brings economic consequences. In Allenstown, these areas include maple tree crops, livestock, produce, orchards. Forests in Town are also susceptible to loss during **drought** conditions.

These lands could be vulnerable to **droughts** and physically and may become economically damaged by these long-term droughts. A dollar estimate is incalculable at this time.

Earthquake or Landslide

Earthquakes can cause buildings and bridges to collapse, disrupt water supplies, electricity and phone lines and are often associated with **landslides** and **flash floods**. Buildings that are not built to a high seismic design level or are large in size could be susceptible to structural damage. Large facilities or historic buildings including the Downtown/ Suncook Village, the manufactured housing parks, and other densely populated locations are particularly at risk because of building sizes and/or their large numbers of people contained within. NH 28 & US 3 travel through the Town over several bridges and the Suncook River and serve as local highways for a great number of people.

Loss of infrastructure or other community buildings or highways could result in fewer services available to residents or reduce the ability to evacuate. Buildings which are located on or near the sides of river and stream banks or that are located on a hill over **15%** could be subject to **landslide** triggered by rains or **erosion**. The Central NH Region area of Boscawen, Webster, Hopkinton (Contoocook), Henniker, Hillsborough, Salisbury, and Warner (Davisville) hosts frequent epicenters of deep earthquakes.

With a scenario range of **0.5%** to **1%** of buildings damaged throughout the Town, an **earthquake** or **landslide** could potentially cause up to **\$1.1m** to **\$2.1m** in building-only damage costs alone, not including contents, infrastructure, or land.

Extreme Temperatures

Excessive heat and **extreme cold** can harm property, such as landscaping and agriculture, or infrastructure. People will draw more water from their wells to help alleviate these conditions. Extreme heat can sicken people, causing sunstroke, heat exhaustion and dehydration if the environment is not cool enough or water intake is too low. Conversely, extreme cold can cause hypothermic conditions. In this manner, neither extreme heat nor cold is measurable for dollar damage. Allenstown has many vulnerable populations, including Community Center, Allenstown Elementary School, Armand Dupont School, Suncook Pond Senior Housing, manufactured housing parks, remote neighborhoods, and more. A detailed inventory of **Vulnerable Populations** can be undertaken by the Town and regularly updated which can be used by emergency responders to ensure susceptible people remain healthy. Dollar damage estimates are not feasible for **extreme temperature** hazards.

High Wind Events or Tropical and Post-Tropical Events

The high wind event storms include the **wind events**, **flooding** and **lightning**, but can also just be simply severe winds, downbursts, tornadoes, or hurricanes. When summer **rainstorms** or **thunderstorms** occur, they are often regional in nature, but could just as commonly be localized in some areas, easily identifiable when one section of a roadway is dry and another section of the same road is wet. Sometimes **hail** accompanies these storms. **Thunderstorms** and **rainstorms** are more likely to damage trees, powerlines or crops than buildings, which are more readily damaged by downbursts, tornadoes and hurricanes. These storms typically cover most of, if not the entire, Town, as **winds** and **storms** are large enough and blow through to impact multiple New Hampshire counties.

With a scenario range of **1%** to **5%** of buildings damaged by wind events throughout the Town, a wind event could potentially cause up to **\$2.1m** (**for more localized downburst, high winds and hail, or tornadoes**) to **\$10.6m** (**for more damaging and widespread tropical storms and hurricanes**) in building-only damage costs, not including contents, infrastructure, or land.

Lightning

Damage caused by **lightning** would not be Town-wide because it typically strikes in smaller areas. Few places in Allenstown are at specific risk but lightning strikes can cause fires. Damages will vary according to the value of the structure and home and the contents inside, and dollar amounts would depend on if the hazard hit an area with a high density of buildings. Specific sites which would cause the greatest impact if struck by **lightning** include conflagrations in the Downtown/ Suncook Village; high elevations; densely populated buildings including the Schools; historic buildings like the Churches, Historical Society, Library,

private homes and more. Town Facilities like the Allenstown Wastewater Treatment Facility, Pembroke Water Works water tower, Highway Department Garage, Town Hall, Police Department, Transfer Station and Fire and Rescue Departments are necessary for governmental function and provision of basic services.

The Town's utilities, including powerlines, high tension powerlines, telecommunications tower, switching stations, telephone lines and broadband cable internet service, and the water and wastewater facilities, as well as the municipal and School computer systems, are vulnerable to **lightning strike**. Tall buildings like those found in the Suncook Village or at the high elevations could be vulnerable without lightning rods.

With a scenario of **0.5%** of buildings damaged throughout the Town, a **lightning strike** could potentially cause up to **\$1.1m** in building-only damage costs alone, not including contents, infrastructure, land, or additional damage through fire spreading.

Public Health

Dollar damage estimates are not feasible for public health hazards.

River Hazards

Ice jams on the **Suncook River**, **Merrimack River** or one of the brooks would be a major cause of **flooding** which could recur in the future. Woody material causing **debris impacted infrastructure** may be more likely to impact bridges than ice jams, especially any the structurally deficient State or Town bridges. Several bridges or roads span across the Suncook River and its canals, Little Bear Brook, Pease Brook, other named brooks and many unnamed brooks. Small brooks culverts and drainage systems offer additional opportunity for ice jams, debris blockage, and more. The **2020-2028 NH Department of Transportation Ten Year Plan (TYP)** provides many examples of basic cost estimates bridge replacement and rehabilitation.

This average figure of **\$750,000** can be used for one (**1**) local bridge *replacement* in Allenstown due to the physical damage caused by **river ice jams** or **debris impacted infrastructure**. The same bridge damaged by **ice** or **debris** which only requires *rehabilitation* could cost **\$500,000**.

Another way to view potential **river hazard** damages is if half (**77**) of the **114** single family homes in the floodplain were damaged by **Two-Foot Flooding (20% Damage)** resulting from **river ice jams** or **debris impacted infrastructure**, there could be up to **\$1.1m** in building damage costs.

Winter Weather

Heavy **snow loads**, **icy conditions**, **extreme cold**, **wind chill**, and the secondary hazards (including **power failure**, **transportation accidents** and **debris impacted infrastructure**) are result of **winter storms**. Storms with these conditions have been felt in Allenstown in the past. These hazards and secondary impacts are a risk to the community, including isolation, more falls and personal injury (especially by the older

residents), and the potential for roof collapse. The most remote locations in Allenstown, wooded and forested sections vulnerable to tree fall, include the entire Town. Damage caused by this type of hazard varies according to wind velocity, snow accumulation, tree/limb fall and duration.

With a scenario range of **1% to 5%** of buildings damaged throughout the Town, **severe winter storms** could potentially cause up to **\$2.1m to \$10.6m** in building-only damage costs.

Solar Storms and Space Weather

Dollar damages to structures are not measurable from solar winds, radio blackout, or geomagnetic storms. These hazards impact utilities such as communication systems and technology. The Town, School and State technology is vulnerable to **solar storms**, such as computer systems, emergency response dispatch systems, electricity, internet, and software programming interruption that upkeeps essential functions, such as wastewater treatment and water treatment. Although a potential natural hazard, dollar damage is not feasible for solar storms and space weather.

Wildfire

The risk of **wildfire** is difficult to predict based on location. Forest fires are more likely to occur during years of **drought**. In addition, areas and structures that are surrounded by dry vegetation that has not been suitably cleared are at high risk. Humans can contribute by accidents in the woods or dry fields, or by the deliberate setting of **fire** in a structure. The heavily forested woodlands of Town are often remote locations and difficult to access by emergency vehicles. Subdivisions are located in remote hilltop locations and are often on private or non-Town maintained roads.

Bear Brook State Park and its trails offer wonderful recreational opportunities for residents and students. Forests and woodlands are particularly vulnerable to **wildfire** because accidental human-caused fires could occur. Remote fires might not be reported until they become large enough to be spotted. Dollar damage would depend on the extent of the fire, the number and type of buildings burned, and the amount of contents destroyed within the buildings.

With a scenario of **1.0%** of buildings damaged in the Town, a **wildfire** could potentially cause up to **\$2.1m** in building-only damage costs alone, not including contents, infrastructure, or land.

National Flood Insurance Program (NFIP)

In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities such as Allenstown agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. For more information on the National Flood Insurance Program, visit <https://www.floodsmart.gov/why/why-buy-flood-insurance>.

The initial identification of Allenstown’s Flood Hazard Boundary Maps was produced on **April 5, 1974**, and later the first Flood Insurance Rate Maps (FIRM) were developed on **April 2, 1979** and included the Special Flood Hazard Areas (SFHAs). The Town entered the regular phase of NFIP membership on **April 2, 1979**. Allenstown’s first Flood Insurance Study (FIS) was produced in **October 1978**. The Town was briefly suspended from the program on **May 3, 1990** and was reinstated on **October 18, 1990**. No amended FIS or FIRMs were developed for the Town until over four decades later, consistent with other Central NH Region communities.

In the present day, Allenstown’s effective FIRMs are digital (DFIRMs) dated **April 19, 2010** as is the Merrimack County Flood Insurance Study (FIS) which includes Allenstown (community **#330103**); individual community FIS are no longer being developed. These **2010** newest documents were adopted by the Board of Selectmen, supercede all previous NFIP documentation, and are placed into the Town Zoning Ordinance. **Table 36** summarizes the historical background of the Town’s NFIP effective dates.

Table 36

NFIP History of Allenstown – Effective Dates

Version	Flood Insurance Study (FIS)	Flood Insurance Rate Maps
Original	October 1978	April 2, 1979
Current	April 19, 2010	April 19, 2010

Source: FEMA Merrimack County Flood Insurance Study (FIS) Table 7 & Bibliography, 2010

ALLENSTOWN’S NFIP STATISTICS

In **Table 37** is a cumulative history of the trends and overall totals of flood insurance policies and losses of those property owners utilizing the NFIP insurance in Town. Four snapshots in time, one from each of Allenstown’s **Hazard Mitigation Plan** versions, display the number of NFIP policies in force and paid loss statistics between **December 2002 - September 2018**.

Table 37
History of NFIP Policy and Paid Loss Statistics

Report Date	Policies in Force	Insurance in Force	Number of Paid Losses Since 1979	Total Losses Paid Since 1979
Dec 2002	22	\$3,197,200	31	\$79,688
Sep 2008	70	\$9,947,600	71	\$1,703,688
Jul 2013	32	\$6,888,500	95	\$2,107,718
May 2015	28	\$6,888,500	95	\$2,107,718
Sep 2018	21	\$6,086,400	96	\$2,110,003

Source: Allenstown Hazard Mitigation Plans, FEMA last accessed 08-19

From **Table 37**, in **Dec 2002** prior the severe flooding event period of **2005-2008**, **22** properties in Allenstown were covered by NFIP flood insurance and **31** claims had been paid since **1979**. By **Sep 2008** after the flooding period, the number of policies tripled to **70** with **71** losses paid. By **Jul 2013**, policies had decreased to **32** while the paid losses had jumped to **95**. By **Sep 2018**, the latest available data, Allenstown property owners had only **21** policies in place and a total of **96** paid losses.

Since **1979**, a total of **96** loss claims had been paid to owners in Town due to flooding damage totaling **\$2.1m**. By **September 2018**, with no severe flooding events since **2012** in the Central NH Region, the number of properties covered by flood insurance fell to **21** parcels (policies) covered by NFIP flood insurance, with a total of **\$6.1m** in coverage.

Since the **May 2015**, the number of properties (policies) covered by flood insurance fell by **25%** to total only **21** policies in the community. Normally, the number of policies would fluctuate over this **5-year** period, influenced by the lack of current severe flooding events, recent changes in flood insurance regulation, the higher cost of insurance, uncertainty about exact floodplain location, unchanging real estate market, and assumptions that flood insurance is unnecessary if one’s property is outside of the floodplain. Since there has been no recent severe flooding, significant fluctuation did occur in Allenstown.

Table 37 also illustrates that while the property owners anywhere in the entire Town of Allenstown are eligible to purchase flood insurance for their property, only **21** properties out of the **1,990** total parcels in the entire community are insured against flooding. As described previously, a total of **150** parcels with homes and non-residential buildings seem to be at least partially situated in the Special Flood Hazard Areas (SFHA). Assuming the **21** policy properties are within the SFHA, **14%** of buildings in the floodplain are insured against flooding.

Virtually all of Allenstown’s buildings and properties are uninsured for when the next flooding event occurs. **Inland Flooding** conditions can occur anywhere in the community due to runoff, debris impacted infrastructure (culverts), drainage overflow, rapid snowpack melt, road washouts, beaver dam breaks, heavy rains, etc which are not limited to the floodplain (SFHAs) areas and are not covered by homeowner’s insurance or any other insurance than National Flood Insurance Program (NFIP) flood insurance.

REPETITIVE LOSS PROPERTIES

A specific target group of properties is identified and serviced separately from other NFIP policies when repetitive losses occur on the same properties. The group includes every NFIP-insured property that, since **1979** and regardless of any change(s) of ownership during that period, has experienced four or more paid flood losses of more than \$5,000 each or two or more separate claim payments (building payments only) where the total of the exceeds the current value of the property. Two of the claim payments must have occurred within 10 years of each other. The loss history includes all flood claims paid on an insured property, regardless of any changes of ownership, since the building’s construction or back to **1979**.

As of **April 2018**, Allenstown had a total of **24** repetitive loss properties according to records kept by the Federal Emergency Management Agency and supplied by the NH Office of Strategic Initiative (NH OSI). All of these repetitive loss properties (RPL) are residential, some of which claimed more than 3 losses as a result of the significant flooding and infrastructure damage disaster period of **2005-2012** (See **4 HAZARD RISK ASSESSMENT**). **Table 38** displays the general repetitive loss data:

Table 38

Number of Repetitive Loss Properties

Building Type	Number of Repetitive Loss Properties
Single Family	23
Multi-Family	1
Non-Residential	0
Total Properties	24

Source: NH Office of Strategic Initiatives (NH OSI) on behalf of FEMA, April 2018

These RPL data records are confidential for the property-specific information they contain. Repetitive losses are determined by any repetitive damage claims on those properties that hold flood insurance through the NFIP. Should additional repetitive losses occur, the Town should consider participating in voluntary property acquisition (“buyouts”) which would eliminate the threat to several homes by incorporating newly vacant land into the Town’s flood storage capacity.

A total of **34** homes had been voluntarily acquired by the Town Allenstown between **2008-2012** from property owners through grant funding which contributed to the reduction of population and housing units between **2000-2010**. These lands were razed and turned into vegetated open space.

FLOODPLAIN ORDINANCE

A major objective for floodplain management is to continue participation in the National Flood Insurance Program. Communities that agree to manage Special Flood Hazard Areas shown on NFIP maps participate in the NFIP by adopting minimum standards. The minimum requirements are the adoption of the Floodplain Ordinance and Subdivision Regulation / Site Plan Review requirements for land designated as Special Flood Hazard Areas (SFHAs). Flood insurance is available to any property owner located in a community participating in the NFIP.

Community Assistance Visits in Allenstown

A Community Assistance Visit (CAV) is a process required by the National Flood Insurance Program (NFIP) as a way of reviewing a town's compliance with established floodplain regulations to be sure that they meet NFIP requirements. If the Town is not in compliance with regulations in any way, the officials that conduct the CAV provide assistance and guidance to assist with correcting any violations.

Since the NH Office of Strategic Initiatives (NH OSI) identifies Allenstown as a repetitive loss community, which is based upon **Table 38** data, Allenstown is classified as a Tier 1 community. For a Tier 1 community that has experienced repetitive losses, a new CAV will be undertaken every five years or if there is a severe flooding event. For towns without any repetitive losses, they are classified as Tier 2 where a telephone call may be made to the Town every 5-10 years or otherwise as needed when so classified.

On **September 15, 1998** Allenstown was the recipient of a Community Assistance Visit (CAV) held for review and education on NFIP policies. At this time, it was reported that there were minor problems with the floodplain management regulations. Upon review in spring of **2002**, the Floodplain Ordinance was in compliance with NFIP policies. However, during the **1998** CAV, it was also reported that the required regulations within the Site Plan Review and Subdivision Regulations did not meet the standards of NFIP requirements, and they were subsequently updated.

On **February 28, 2007**, another CAV was held in Allenstown to review compliance with NFIP policies. The Zoning Ordinance, Subdivision Regulations and the Site Plan Review Regulation were reviewed for necessary NFIP language. Repetitive loss properties and record keeping were discussed. The only need action was to verify if the required NFIP language was contained within the Subdivision Regulations and the Site Plan Review Regulations.

The **Feb 2007** CAV was the last conducted. Shortly prior to the CAV, Tier 2 Allenstown experienced severe damages during the **Hurricane Sandy 2012 Floods** (**\$3k** Public Assistance federal funding received) and was impacted during **Tropical Storm Irene 2011** (**\$4k** PA received). As needed, a CAV should be made by NH OSI to request a review of Zoning Compliance procedures and the contents of the Floodplain Development Ordinance, Subdivision Regulations and Site Plan Review Regulations prior to **2025**, when this **2020 Plan** lapses.

Floodplain Development Ordinance Amendments

The Town of Allenstown has a Floodplain Development Ordinance that currently contains the required FEMA regulations to remain eligible for the NFIP. The Town of Allenstown approved their first Floodplain Ordinance at Town Meeting in **March 1979** prior to becoming a NFIP member on **April 2, 1979**. Since then, sections of the Floodplain Development Ordinance has been modified in various years through **March 2010**, its last amendment.

In **March 2008**, Allenstown updated the Floodplain Ordinance to comply with recent changes to the NFIP program and to allow the Selectmen to approve the new Digital Flood Insurance Rate (DFIRM), when available to accept the forthcoming new Flood maps without the Town Meeting approval process.

In **March 2010**, the Board of Selectmen adopted the new FEMA Floodplain Maps, the current effective Digital Flood Insurance Rate (DFIRM) maps dated **April 19, 2010** and incorporated the necessary FEMA language revisions into the Floodplain Development Ordinances. The ordinance has not been modified since **2010**.

The **2020** Allenstown Floodplain Development Zoning Ordinance contains all the elements to date requested by FEMA and the NH Office of Strategic Initiative’s Floodplain Management Program. A Flood Hazard Area Overlay District guides development in this area of Allenstown using the Ordinance. An excerpt of the Floodplain Ordinance is displayed in **Figure 28**.

Figure 28

Latest Floodplain Development Zoning Ordinance

ARTICLE XII - FLOODPLAIN DEVELOPMENT REGULATIONS

1 TITLE AND AUTHORITY

A. Title
The title of this District shall be the Town of Allenstown Flood Hazard Overlay District.

B. Authority
This ordinance is adopted under the authority granted pursuant to RSA 674:16, Grant of Power, RSA 674:21, Innovative Land Use Controls, and 674:56, Floodplain Ordinances.

2. PURPOSE
The purpose of the Flood Hazard Area Overlay District is to protect the health and safety of residents by promoting the most appropriate use of land in Flood Hazard Areas, as follows:

- A. Uses which will result in no increase in base flood levels, flows, peaks or velocity.
- B. Uses which will not increase the potential for flood damage to the owner's property or that of others.
- C. Uses which will protect the benefits provided to the community by the floodplain.
- D. Uses which will result in no increase in erosion and/or sedimentation or other degradation of water quality.
- E. Uses which will not increase the risk to public safety, or to emergency personnel during flood events, or result in an increase in the cost of public services above costs incurred when not in a floodplain.

I. FINDINGS
Certain areas of the Town of Allenstown are subject to periodic flooding, causing a serious threat to the health, safety and welfare of residents of these areas as shown by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study for the County of Merrimack, N.H dated April 19, 2010, or as amended, together with the associated Flood Insurance Rate Maps dated April 19, 2010, or as amended.

II. APPLICABILITY
All proposed development in the Flood Hazard Area Overlay District shall require a building permit.

The building inspector shall review all building permit applications for new construction, additions to existing structures, and substantial improvements to determine whether the proposed site is within the Flood Hazard Area Overlay District. If the site is determined to be within the Flood Hazard Overlay District, the building inspector shall review the application to ensure that the proposal is in compliance with all provisions of the District including all applicable standards contained in Section XI Development Standards.

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Source: Section of Allenstown Zoning Ordinance March 2020

NFIP Familiarity in Allenstown

According to NFIP policies, when an applicant files a request for a building permit in the floodplain, the applicant must include an elevation certificate in order to be in compliance. In addition, if an applicant intends to fill onsite, a letter of map of revision must be submitted along with the application. According to NFIP requirements in the Floodplain Ordinance, building permits should be reviewed to assure sites are reasonably safe from flooding and require anchoring to prevent flotation, collapse, or lateral movement and construction out of flood resistant materials.

Ongoing attention and familiarity with the NFIP will keep Town staff and volunteers in top form. In order to reduce flood risks, the Building Inspector, Town Assessor, Town Administrator, Town Planner, volunteer Planning Board members, and other Town staff whose duties include review/inspection of development or construction, should be familiar with the Floodplain Ordinance and the NFIP.

Because of their unique position to ensure development conforms with ordinances prior to approval, the Planning Board should be familiar with NFIP policies, especially those regulations that are required to be incorporated into the Subdivision and Site Plan Review regulations. A workshop sponsored by the NH Homeland Security and Emergency Management (NHHSEM) or the NH Office of Strategic Initiatives (NHOSI) would be appropriate to educate current staff and volunteers. New online courses by FEMA for floodplain management, mapping, elevation certificates and more are available at no charge. For online training taken at the convenience of the individual, see the *FEMA Emergency Management Institute's* current training course index for flooding:

<https://www.training.fema.gov/is/searchis.aspx?search=Flood&all=true> .

An essential step in mitigating flood damage is Town and property owner participation in the NFIP. Allenstown should work to consistently enforce NFIP compliant policies to continue its participation in this program. Town staff field property owners asking for assistance because their mortgage lenders are requiring proof that the properties in question are not located in a Special Flood Hazard Area to determine whether NFIP flood insurance is required. The only way to rectify this issue is to have a survey completed of the property to complete a Certificate of Elevation to keep on file at the Town Office. If the property is shown to be located out of the floodplain, a Letter of Map Amendment should be completed by the owner or by the Town to ensure future flood maps are corrected.

When possible, Town staff should try promote flood insurance to property owners in Town; only **21** properties out of the **1,990** parcels in Allenstown are protected by flood insurance and currently take advantage of the NFIP insurance opportunity. Informational links for the public on flood topics could be located on the Town's website at www.allenstownnh.gov.

6 CAPABILITY ASSESSMENT

Local mitigation capabilities are existing authorities, plans, ordinances, policies, mutual aid, programs, staffing, technical skills and assets, funding, outreach, public education, and resources that reduce hazard impacts or that could be used to help implement hazard mitigation activities. These capabilities were inventoried for the **Allenstown Hazard Mitigation Plan Update 2020**.

The **Capability Assessment** contains an inventory of locally-important existing mitigation support activities, or capabilities, which have a positive impact on the way hazard events are handled within the community. Most capabilities are not hazard mitigation Actions but support the Action Plan and help decrease the community's hazard risk. These community-strengthening capabilities are not STAPLEE-rated (Social Technical Administrative Political Legal Environmental and Economics questions) like the Actions, but instead the capabilities serve to sustain and assist the community to maintain and accomplish its hazard mitigation Actions and priorities. Selected **Future Improvements** (mitigation-oriented) to some of these capabilities have the potential to be considered as Actions in **7 POTENTIAL ACTION EVALUATION** and **8 MITIGATION ACTION PLAN**.

Capability Assessment Types

Planning & Regulatory

Administrative and Technical

Financial Resources

Education and Outreach

There are four overall Capabilities considered for which an inventory of mitigation support items was identified by the Hazard Mitigation Committee, **Planning & Regulatory**, **Administrative and Technical**, **Financial Resources**, and **Education and Outreach**.

Each Capability had inventoried the latest version or adoption Date; a Description of the item; the location of the capability in Town; the Level of Effectiveness of the Capability; which Department, Board or other has Responsibility for the capability; what Changes were made to the capability since the **2015 Hazard Mitigation Plan**; and Future Improvements to the Capability.

Town Capabilities

A summary of the items within the four Capability tables is provided here to offer a portrait of resources Allenstown has at hand to assist with mitigation. Careful consideration of each Capability’s *Level of Effectiveness* helped the Departments to determine any clear *Future Improvements* to undertake. Many of the Town’s Capabilities involved existing plans, procedures, reports, policies, regulations, and resource documents from individual Departments. These plans and documents were reviewed and incorporated into the **Capability Assessment**. *Future Improvements* to these documents were identified and many later became Action items in **8 MITIGATION ACTION PLAN**. Capabilities of all Town Departments and the School District as related to hazard mitigation are detailed within the following tables.

Level of Effectiveness	Description
High	Capability is working well and is regularly followed
Moderate	Capability could use some revisions but is followed
Low	Capability is not working and needs revisions

DEPARTMENT ABBREVIATION KEY:

BOS	Board of Selectmen
CC	Conservation Commission
CBH	Code Enforcement/Building Inspector/Health Officer
EM	Emergency Mgt
FD	Fire & Rescue Department
HD	Highway Department
LU	Land Use Department
PB	Planning Board
PD	Police Department
SD	School District – Allenstown Elementary School (AES) and Armand Dupont School (ARD)
TA	Town Administration
WD	Water District (Pembroke Water Works)
WW	Wastewater Department
NON	Non-Municipal (State, non-profit, private, etc)

Primary Mitigation Department

PLANNING AND REGULATORY CAPABILITIES

The planning and regulatory capabilities displayed in **Table 39** are the plans, policies, codes, and ordinances that reduce the risks or impacts of hazards. There are **3** categories: **Plans and Planning Documents; Building Codes, Permitting, and Inspections;** and **Land Use Ordinances, Regulations, and Town Ordinances.** Most of the documents listed below are the Town’s documents, but others are School, local, regional, state and federal which support the Town’s the hazard mitigation goals, objectives, and/or Actions.

**Table 39
Planning and Regulatory Capabilities**

<u>Latest Adoption or Version Date</u>	<u>Capability Assessment: Planning and Regulatory Resources</u>	<u>Description</u> Related to hazard mitigation planning and coordination	<u>Location of Capability</u> Entire Town or Selected Areas	<u>Level of Effectiveness</u>	<u>Responsibility</u>	<u>Changes Since Last Haz Mit Plan (2015)</u>	<u>Future Improvements to Capability</u>
ALLENSTOWN PLANS AND PLANNING DOCUMENTS							
Feb 2020	CBH NH Health Officers Manual	This manual provides the health officer a collection of relevant guidance documents related to issues that health officers are likely to encounter including emergency response.	Entire Town	High	Health Officer	Updated using Legislature instructions, State Health Officers. Added Rental Housing, Nuisances, Health and Sanitation, etc. revisions	Add infectious disease guidance to manual. Allenstown EMD & Deputy EMD are Board members on NH Health Officers Association and will work on training with Public Health Networks, share information
Mar 2020	EM CAPHN Emergency Preparedness and Response Plan for the Capital Area	The response plan provides the Capital area with a structure to guide planning for a public health emergency. The plan encompasses 3 phases including preparedness, response and recovery. Local Point of Dispensing (POD) is located at Bow High School. Completed Shelter in a Box Template. Capital Area Medical Reserve Corps and Community Emergency Response Team	Entire Town	High	EMD and Health Officer with CAPHN	Allenstown are members of PHN, meet monthly for discussion and training. Partial Activation Status, MACE opened in April 2020. Last attended EMPC in 2019. POD was drilled April 2019. Allenstown and Bow EOC	Attend the annual Emergency Management Preparedness Conference in June 2020 (2021). Support the network with regional exercises.

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6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Planning and Regulatory Resources	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2015)	Future Improvements to Capability
						exercises completed	
Jun 2016	EM Emergency Operations Plan 2016	Describes who's responsible for what actions during an emergency, includes evacuation plan. Includes general warning systems, including word-of-mouth, church bells, chain of command of Emergency Mgt people, and local radio stations. Previous Plan developed in 1992, Feb 2012.	Entire Town	High	Emergency Mgt	Updated EOP in 2016 Annual updates made by the Town	Update Emergency Operations Plan, add additional annexes and resources. Practice regular drills.
2015	EM Allenstown Hazard Mitigation Plan 2015	Original Plan in 2004, updated in 2009, 2015. Included a series of Maps and mitigation actions.	Entire Town	High	Emergency Mgt	Completed several mitigation actions as described in 2020 Plan	Complete the 2020 Allenstown Update
Sep 2011	EM Pre-Planned Incident Action Plans for Flooding and Severe Storms	Developed pre-planned Incident Action Plans for flooding and other more common disasters (Ice Storms, Blizzards, etc.). (2010) during the Suncook River Community Planning Team information sharing opportunity.	Entire Town	High	Emergency Mgt	Attended US Geological Survey meetings at Fire Academy regarding river gage in Aug 2019	Review and exercise IAPs for Flooding and Severe Storms
July 7, 2013	EM Disaster Recovery Plan	Written disaster recovery plan for the town with annexes. Plan was exercised and tested during tabletop exercise. Binder provided to Town Departments.	Entire Town	High	Emergency Mgt	Reviewed the Plan and held a full-scale tabletop exercise around 2016 at Fire Standards and Training	Revise Town's DRP to include meeting FEMA's NDRF format.
April 2020	FD Capital Area Mutual Aid Fire Compact (CAMAFC) Mass Casualty Plan	Prescribed Resource Response matrix based on level of response needed by Incident Commander.	CAMAFC towns	High	Fire Dept	Evaluated and modified Resource Response Matrices to reflect current status	CAMAFC Board of Directors add new capabilities to the mutual aid system Resources
Apr 2020 in progress	HD	In 2019 Central NH Regional Planning	Town Roads	High	Highway Dept	Project started with	Implement the RSMS Plan to

Town of Allenstown, NH Hazard Mitigation Plan Update 2020

6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Planning and Regulatory Resources	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2015)	Future Improvements to Capability
	Road Surface Management Systems (RSMS)	Commission conducted a Road Inventory and Condition Assessment on the paved road network in the Town of Allenstown in partnership with the NH Department of Transportation and UNH Technology Transfer Center as part of the Statewide Asset Data Exchange System (SADES). The road inventory and assessments were entered into the SADES Road Surface Management System (SRSMS) software for analysis, prioritization, and generation of road repair strategies.				CNHRPC to determine the condition and plan for maintaining the Town's roads. A draft has been provided to the Town.	maintain the good roads and bring the lesser maintained roads up to safe standards.
Fall 2019 Grant	HD Asset Management Plan and Culvert Maintenance Plan	The Town received a NHDES grant in 2019 to inventory the culverts, catch basins, detention ponds, etc assets of the Highway Department. Progress in 2019, continued. Grant is 480 days, hiring intern for the summer.	Town Roads	High	Highway Dept	Obtained a grant in 2020 for asset management data collection. Hoyle & Tanner contractor is working on collecting the data weekly. A maintenance plan is being developed presently.	Complete the project. Review the infrastructure for maintenance needs according to the asset management plan
Jul 2013	HD Debris Management Section of Recovery Plan	Debris Management section states how to pick up curbside materials, which goes out to residents. Different piles of debris are necessary for removal. The section follows the FEMA model. There may be additional sites allocated.	Entire Town	High	Highway Dept	Attended meetings to review and discuss the HD component of the recovery plan	Rewrite Debris Management Section of Recovery Plan to allocate pre-designated locations for landfills and include mapping of these locations.

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6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Planning and Regulatory Resources	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2015)	Future Improvements to Capability
Jun 1, 2013	NON PSNH Garvins Falls Dam Plan	Describes what to do in case of dam failure at Garvins Falls. Owned by Eversource after purchased from PSNH.	Merrimack River floodplain	Moderate	Eversource with EM	Annual updates made by PSNH/Eversource	Obtain latest update from Eversource
To updated in 2020	NON Bear Brook State Park Management Plan	State management Plan for use of the Park. Park owned by NH Department of Resources and Economic Development, who wrote the Plan. Held 2012 wildland exercise with NH parks and forest ranger on large scale incidents. Last updated in 1994	Bear Brook State Park	High	NH DRED, NH Parks	Started in 2019 to update the Plan.	Distribute Bear Brook State Park Management Plan to all necessary local officials. Coordinate with NHDRED and NH F&G about nearby developments to Bear Brook State Park.
Mar 2003	PB Master Plan	Developed by the Planning Board, includes Community Facilities, Transportation, Natural Resources, Utilities, Land Use, etc. Latest Master Plan was adopted by the Planning Board in March 2003.	Entire Town	High	Planning Board		Update the 2003 Master Plan with current data to provide relevant recommendations for the Town to fulfill. Bds and Depts to review their list of recommendations. PB to review and update sections annually
Apr 2020	PB Capital Improvements Program	Strategic 6-year long term plan for improvement of high-cost Town equipment. Place funding away into several Capital Reserve Funds. Last CIP developed in 2012 spanning 2013-2018.	Entire Town	High	Planning Board		Update the CIP on an annual basis to include a Hazard Mitigation CRF
2020	PB Telecommunication Towers and Antennas Ordinance	Adopted in 2001. States requirements for height, setbacks, security, and removal.	Entire Town	High	Planning Board		
April 13, 2020	PD Capital Area Tactical	Allenstown helped develop this plan, which documents	Entire Town	High	Police Dept	Worked to develop a	Develop a written plan, with a yearly

Town of Allenstown, NH Hazard Mitigation Plan Update 2020

6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Planning and Regulatory Resources	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2015)	Future Improvements to Capability
	Interoperable Communications Plan	communications resources available and who controls the resources, and what rules are in existence during activation of each resource. Large drill w/HSEM, DOT, Sheriff, other departments, Haz Mat, etc. upcoming.				Town wide frequency. A single channel is used town wide and has been tested.	drill. to test area PD's portables.
Aug 2019	SD Emergency Action Plan (EAP) for Elementary School and ARD)	The EM Plan is reported to the NH DoE yearly. The Crisis Management Plan (below) is also reviewed. A comprehensive plan is in place & reviewed periodically.	AES & ARD	High	School District	Police Dept updated the EAP for the School in conjunction with school officials	Review and update the EAP annually to keep the content current and relevant
Aug 2014	SD Crisis Management Plan 2014	The Crisis Management Plan was last updated in 2009. It includes sections on communications, evacuation procedures, chemical spills, death, fire/explosion, gun/weapon on school property, hostage/kidnapping, shooting, major disruption, power outage, and natural disasters. Original Plan 2009	AES & ARD	High	School District	EMD and Town Officials have contacted the School Superintendent to touch base and provide assistance as needed.	Update the Crisis Management Plan as new information is made available and distribute to all local emergency officials.
2019	WW Emergency Response Plan	WWTP's ERP contains outlines for multiple emergency scenarios and related maps, press releases. Document was reviewed by NHDES who considers the Plan as a thorough example for other towns	WW Treatment Area	High Untested	Wastewater Dept	Completed the first version of the ERP document	Hold a tabletop exercise related to handling long-term power loss

Town of Allenstown, NH Hazard Mitigation Plan Update 2020

6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Planning and Regulatory Resources	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2015)	Future Improvements to Capability
ALLENSTOWN BUILDING CODES, PERMITTING, INSPECTIONS							
Sep 2019	BI State Life Safety Code 2019, Construction Inspected by the Town Building Inspector and Fire Dept	New construction is continually evaluated during the process with the final inspection conducted by both the Fire and Building Officials prior to the issuance of a certificate of occupancy.	Entire Town	High	Building Inspector/ Code Enforcement Officer with Fire Dept assistance	Town enforced when State adopted the new code in 2019. Had previously been using the 2015 code.	Would like to see the State adopt the current version
Sep 2019	BI State Building Code (International Building Code 2019)	Contains a suite of residential, commercial, plumbing, electrical, mechanical, energy, and existing buildings	Entire Town	High	Building Inspector	Town enforced when State adopted the new code in 2019. Had previously been using the 2015 code.	Would like to see the State adopt the current version
2018	BI Release of Liability for Building in the Floodplain	Building permit process has a flood release of liability form. Residents must sign a document stating they are building on the floodplain, which gets recorded in the Registry. Can build to slightly new codes. Necessary for homeowner insurance, permit enables construction to floodplain ordinances. Criteria have to be followed	Floodplain	High	Building Clerk / Building Inspector	Process is approval for building in floodplain area once reviewed by planning consultant. State guidelines followed for occupancy permit on Riverside Drive	Review and strengthen floodplain ordinance regulations.
2015	BI Building Codes	The State has adopted statewide requirements for compliance of residential (2015 IRC) and commercial (2015 IBC) building codes	Entire Town	High	Building Inspector	State adopted the most recent & current editions of the building codes, as did the Town.	Town will review the zoning ordinance periodically to ensure they are concurrent with the State version of building codes, compliance &

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							enforcement practices
2013	EM Community Rating System	Community Rating System process initiated but stopped and not completed to obtain certification.	Suncook River floodplain	Moderate	Emergency Mgt / Building Inspector	Process had not been completed, and current personnel are unfamiliar with previous efforts	Investigate the pros and cons, and if appropriate re-initiate the process and obtain certification
Apr 2020	HD Inspection and Permitting Process for Excavation, Driveway, Dig Safe, etc	HD issues Excavation (Town), Driveway (Town), Dig Safe (utility) permits according to Town regulations	New and Improved Development	High	Highway Dept	HD staff regularly work on the inspections needed to issue permits	Improve the driveway permits, making them more the applicants, such as providing detailed instructions online for marking driveway entries and submitting a brief site plan with setback measurements, ask for photo submission. Also look at submitting the application components online.
Apr 2020	HD Inspection of Drainage Infrastructure as Part of the EPA MS4 Stormwater Management Plan (FGA)	HD conducts inspection of drainage infrastructure. The Planning Board has a component but mostly it is with the Highway Dept. The FGA mapping depicts input features that might not be recorded in the MS4. Assistance from NHDOT. Camera/video record the stormdrains, HD borrows the Allenstown Wastewater equipment when necessary at present. Usually a reactive system,	Existing and New Drainage	TBD High	Highway Dept	Nearly completed with MS-4 stormwater project	After MS4 is completed, will undertake a Vulnerability Assessment of drainage infrastructure to existing EPA MS4 Stormwater Management plan in progress.

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		no massive failure issues identified. Major drainage infrastructure is placed into the CIP for replacement during road resurfacing.					
Sep 2019	FD Life Safety Code NFPA 101, Occupancy Inspections	Contains 15 types of occupancies that may be inspected by Fire Departments - Places of Assembly - Mercantile - Business - Health Care - Ambulatory Health Care - Residential Board and Care - Day Care - Educational - Apartment Buildings - Lodging or Rooming Housing - Hotel or Dormitory - 1 and 2 Family Dwellings - Industrial - Storage - Detention and correctional	Places of Assembly, Day Cares, and Educational sites	High	Fire Dept	Inspected for these 3 types of buildings	Would like to see the State adopt the current version
Sep 2019	FD 201 NFPA 1 Fire Code, Permitting	Section 1:12, and Table 1.12.7a specifically outline instances when permits are required	Select Structures	High	Fire Dept	Issued permits	Would like to see the State adopt the current version
Apr 2020	PB NFIP Participant	Enrolled in program since 1979. OEP provided training.	Floodplain	High	Planning Board, Building Inspector	Participated in the NFIP	Encourage Administrative staff and Planning Board members to attend online NFIP trainings
ALLENSTOWN LAND USE ORDINANCES, REGULATIONS, and TOWN ORDINANCES							
2012	BOS Recycling Ordinance	Recycling Ordinance procedures adopted and implemented in 2012.	Entire Town	High	Board of Selectmen	Procedures are used by all residents and private contractors	Review the effectiveness of the ordinance and consider a study of the long

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						on a weekly basis	term costs of Town trash and recycling
2003	BOS Hazard Material Control and Clean Up Ordinance	Hazard Material Control and Clean Up Ordinance was adopted in 2003. A Capital Reserve Fund (CRF) is in place and has been utilized for several spills; fund has been replenished.	Entire Town	High	Board of Selectmen	The ordinance is in place should a spill occur.	Hold a tabletop exercise of a hazardous material spill and clean up
Feb 23, 2013	BOS 911 Street System Numbering Ordinance	Numbering and street naming ordinance adopted. Several re-numbering, re-naming projects have been completed. Section by the Community Center was one of the last completed.	Entire Town	High	Board of Selectmen	Renumbered most of the streets and addresses in Town. (Paul) When new construction occurs, makes sure new neighborhoods are numbered properly.	Complete the remaining re-numbering projects to ensure the entire town is in compliance with the standards and the ordinance.
March 10, 2020	PB MS-4 Stormwater Management Plan Ordinance	PB develops and updates the stormwater regulations to current EPA standards and the HD works on the repairs, catch basins, etc.	Downtown	High	Planning Board with Highway Dept assistance	Regular work done on the MS-4. Very advanced in NH on the program.	Obtain more federal funding to update the MS-4 and construct the mandated projects.
Mar 2014	PB Floodplain Development Regulations Zoning Ordinance	Includes separate standards for new or improved manufactured homes, residential homes, or non-residential development in floodplain zoning district. Last updated in 2010, adopted with new DFIRM maps. Enhanced flood plain management regulations and procedures beyond FEMA requirements.	Floodplain	High	Planning Board, Building Inspector	Adhered to the floodplain ordinance specifications during Planning Board approvals and building permit process	Update the Floodplain Development Regulations ordinance as FEMA requirements change, and update
2020	PB Manufacture d Housing	Contains a ratio of 1 new manufactured permit issued for every 15 new traditional residential	Entire Town	High	Building Inspector	Adhered to the manufacture d housing	Review the ordinance and determine whether

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	Regulations in Zoning	permits issued. Works well by encouraging replacement of older manufactured homes.				ordinance specifications during Planning Board approvals and building permit process	updates are needed or whether incentives could be added for replacement homes
2020	PB Fire Protection in Subdivision Regulations	Must satisfy improvement criteria (cisterns, road access) if deemed "scattered and premature."	Outskirts	High	Planning Board	Required the placement of cisterns and adequate road access during Planning Board approvals	Review the ordinance and determine whether updates are needed, such when to require fire suppression
Sept 4, 2013	PB Subdivision Regulations	Contain minimum specifications for roads, lot sizes, infrastructure, drainage, buffers, easements, noise, erosion control, underground utilities, dams, etc for new residential development	New and Improved Developments	High	Planning Board	Used by PB when reviewing applications	Revise the Subdivision application process to streamline review and incorporate new standards for fire safety
Sept 12, 2012	PB Site Plan Review Regulations	Contain minimum specifications for roads, lot sizes, infrastructure, impervious surfaces, buffers, landscaping, parks, erosion, egress, etc for non-residential or multi-family dwelling development	New and Improved Developments	High	Planning Board	Used by PB when reviewing applications	Revise the Site Plan application process to streamline review and incorporate new standards for fire safety
2020	PB Excavation and Reclamation Ordinance	The Town has a materials excavation and reclamation ordinance which provides operational and reclamation standards.	Excavation Areas	High	Planning Board	Used by PB when reviewing applications	Update to accommodate newest standards, including reclamation, operation and permitting.
2020	PB Telecommunications Zoning Ordinance	A cell/communications tower on Jolly Farm Road, Johnson Hill, or Fox Chase will improve reception in Town. A repeater could	Entire Town	High	Planning Board	Used by PB when reviewing applications	Update to accommodate newest standards,

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		additionally be placed upon the tower. The PB revised the Zoning Ordinance to relax some of the regulations.					
Mar 2014	PB Zoning Ordinance	Annual updates.	Entire Town	High	Planning Board	Annual updates to ordinance have occurred	Update ordinance annually to ensure Town's environment is better protected from disasters
Mar 17, 1990	PB Hazardous Materials Clean Up Ordinance	Contained in the Zoning Ordinance	Entire Town	Moderate	Planning Board	No action on ordinance but remains a reference if needed	Review the ordinance and determine whether updates are needed, especially for spill containment in the Suncook Village area
Mar 8, 2011	PB Groundwater Protection Overlay District	Protects groundwater from contamination by regulated substances to preserve and maintain existing and potential drinking water supplies.	Overlay District (Wells)	Moderate	Planning Board	Used the GPO when reviewing PB applications	Review the ordinance and determine whether updates are needed, especially for hazardous materials and containment

Source: Allenstown Hazard Mitigation Committee

ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The administrative and technical capabilities in **Table 40** include policies, mutual aid agreements, partnerships, standard operating procedures, training, skills and tools that can be used for mitigation planning and to implement specific mitigation actions. Smaller jurisdictions without local staff resources often rely on public or shared resources. There are **3** categories: **Administrative Programs, Policies, and Partnerships; Technical Skills, Training and Drills;** and **Assets, Security and Resources.**

Table 40

Administrative and Technical Capabilities

Latest Adoption or Version Date	Capability Assessment: Administrative and Technical	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2015)	Future Improvements to Capability
ALLENSTOWN ADMINISTRATIVE PROGRAMS, POLICIES, MUTUAL AID AGREEMENTS, PARTNERSHIPS, OPERATIONS, PROCEDURES							
2013	BOS Class VI Road Policy	Property owners must upgrade roads to bring up to Class V standards before building. Adoption of ordinance and policies in early 2013.	Class VI roads	High	Board of Selectmen	Property owners who construct on Class VI roads and backlands followed this policy	Consider requiring selected Class VI roads to be upgraded to private Class V town road standards.
Mar 2020	BOS NIMS Policy	Board of Selectman policy for BOS Chair, Fire Chief, Police Chief, Emergency Management, other police & fire, financial, purchasing officer, PIO, administrative personnel. NIMS 100, 200 basic courses. Better efficiency during emergencies	Entire Town	High	BOS	Every time the town applies for an EMPG or federal grant, must prove the Town is compliant in NIMS. Used during COVID-19 pandemic.	Ensure NIMS basic courses are taken by all major Town Depts and staff.
April 13, 2020	EM Town Wide Drills	HSEEP exercises conducted every year since 2007. Tabletops, Drills, Workshops, Functional and Full Scale exercises. Exercised and tested EOP through various exercises.	Entire Town	High	Emergency Mgt	Drills were held in 2017, 2016, and 2015	Undertake communication exercise and EOC/IMT exercise
Apr 2020	EM Warning Systems Alternatives	The Emergency Operations Plan utilizes social media as well as traditional media to get messages out. Facebook is effective, NH places messages on highway	Entire Town	Moderate	Emergency Mgt	Used Facebook, Town website, WMUR, and traditional message boards (at PD, FD, Library & Town Hall) to	Purchase digital variable message board for permanent sign (mobile signs are provided via

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		overpasses. WMUR is also contacted. Previously 2009-2014, several had exercises conducted to test system. Statewide reverse 911 system in place. Refences to 211.				inform the public.	grant) outside the Police Dept on US 3.
April 13, 2020	EM Flood Zone Property Acquisition Project	Purchase flood-prone properties along the Suncook River floodplain. 32 Homes purchased to date (July 2013), one (1) more home purchase pending.	Suncook River floodplain	High	Emergency Mgt	No more homes were purchased	Program completed. There is no need to purchase more homes at this time, but if circumstances change, the project can be reinitiated.
Dec 2019	EM Shelter Plan Agreement with American Red Cross	Developed agreement with American Red Cross for a shelter plan. Provisional, MOU incident by incident. Previously dated Dec 2012.	Allenstown Elementary School (AES)	High	Emergency Mgt	Held discussions for an as-necessary agreement. Considered a backup to the CAPHN.	Utilize any revised shelter guidelines recommended by the ARC.
2020	EM Capital Area Public Health Network Participation MOU	The network created a plan to address mass casualty, health epidemics, etc. The Town is a member of the network and has participated in the group to develop the plan. Drills and training have been conducted.	Entire Town	High	Emergency Mgt	Hosted CAPHN staff for discussion with Town staff and emergency managers	Hold a tabletop exercise with the CAPHN for the "Shelter in a Box" component in the Community Center
Jun 2016	EM List of Contractors and Equipment Operators	Newly updated June 2016. Updated contractor and equipment operator list (2010) as part of the EOP update.	Entire Town	Moderate	Emergency Mgt	Updated as part of the Jun 2016 EOP	Update the contractor and equipment list annually to ensure continued accuracy when needed.
Oct 2019	EM Enabled Reverse 911 Capabilities for Town	Investigated feasibility of reverse 911. (2010) The State of NH accomplished this task for all NH	Entire Town, Statewide	High	Emergency Mgt	Last used in Oct 2019 in Town for barricaded subject (stay in homes).	Exercise the reverse 911 capabilities in Allenstown to

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		communities, making the technology available.				Capability is statewide but has technology issues to resolve.	discover the limitations. Landlines are used for reverse 911, but cell phones that are billed locally but used out of town are notified.
2016	EM Capital Area Medical Reserve Corps and Community Emergency Response Team MOU	During an emergency, these groups will be available to respond to sheltering and disaster response in Allenstown. Can have on-call, vetted assistance when needed. Citizen Corps (24 towns) incorporates/ governs both groups, MRC & CERT.	Entire Town	High	Emergency Mgt	2 Allenstown EMDs meet monthly with the PHN and ARC that include these groups, are involved with exercises and trainings.	Get more Allenstown citizens involved in the emergency management team, advertise through Old Home day and Other Town venues
Summer 2019	EM Granite State Health Care Coalition Membership	Works with the CAPHN. Hold annual conferences. Alliance of emergency management organizations, local emergency management, and health care organizations.	Entire Town	High	Emergency Mgt	2 Allenstown EMDs met attended the annual conference	Attend the annual conference
Apr 2020	EM NH Health Officers Association Membership	Membership of NH's health officers. Goals are education, working with legislature to ensure local health issues are met. NH state liaison assists with trainings.	Entire Town	High	Emergency Mgt	Allenstown EMDs are directors of the NHHOA and attend monthly meetings. As directors, plan and implement two annual workshops for NH health officers.	Hold meetings around the state between NHHOA Board of Directors and PHNs and local health officers.
Jan 2020	FD CAMAFC Mutual Aid Agreement	Capital Area Mutual Aid Fire Compact (CAMAFC), 23 member communities. Resources can be sent to the Town in the event of large fires.	Entire Town	High	Fire Dept	Provided and received mutual for area fires	Participate in regional training for all Fire Dept in MUA including pre-alert

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							toning and texting.
2017	FD Standard Operating Guidelines	Ch.1 Administration SOGs. Ch.2 Emergency Medical SOGs. Ch.3 Facility Maintenance SOGs. Ch.4 Supplies and Equipment SOGs. Ch.5 Operations SOGs. Ch.6 Prevention SOGs. Ch.7 Training SOGs. Re-formatted SOGs and removed or changed existing SOGs	Entire Town	High	Fire Dept	Updated SOGs in 2017 under interim administrator	Review Fire Department SOGs and update as standards changes.
2020	FD-EMS Tri Town Ambulance Standard Operating Guidelines (SOGs)	Written guidelines include procedural/ personnel procedures including who should respond to which type of call and how the response should take place, how to safely dress per call, etc. Reviewed annually	Entire Town	Moderate	Fire Dept	Policies changed as needed, reviewed annually	Review and update Rescue SOGs and add new SOGs when relevant.
2020	FD Capital Area Fire Dispatch Service	Use Capital Area Fire Dispatch, 24/7 service with 8 fulltime dispatchers and 1 supervisor. Updated CAD and Alert Notification system.	Entire Town	High	Fire Dept	Hired a new Supervisor and 1 new dispatcher. Successful dispatch service	Utilize Capital Area Fire Dispatch service and reports, dispatchers in the field.
April 2020	FD Incident "Response Cards"	Incident "Response Cards" indicate what resources respond to which emergencies or disasters within the Capital Area Mutual Aid Fire Compact.	Entire Town	High	Fire Dept	Incident response cards were updated in 2019 and last used in April 2020	As the town improves with new construction and business development, reevaluate the needed extra resources and target hazard areas.
Jan 2020	HD Highway Mutual Aid Agreements with Surrounding Towns and Pembroke	Member of NH Highway Mutual Aid network – have used it for building inspectors during the floods, not for road work. Also have informal MUAs with Town of Pembroke to share generator,	Entire Town	High	Highway Department	Have agreements with Advanced Excavation and Allenstown Aggregate informal agreements	Participate in emergency exercises with the NH Highway Mutual Aid network and with

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		equipment, and detour signs for Route 28 flooding. Regularly share equipment daily with Pembroke for regular DHD operations. (also MUA with State for signs) and have not used it yet				(private) and well agreements with the public sector. Work very closely with Pembroke sharing equipment and operators.	Pembroke DPW. Participate in any emergency disaster exercises with other Departments and the Schools.
Mar 21, 2020	HD Innovative Debris Clearance Procedure (not an SOP)	During Hurricane Sandy when the Department's loader was unavailable, a procedure was developed to use a plow truck to clear debris. The roads were closed by state officials and no other vehicles could get by. Purpose was to safely clear roads of debris during the storms using steel plows – more is completed, with less effort. Work with local contractors for other emergency vehicles for debris removal. Started doing it 30 years ago.	Entire Town	High	Highway Department	HD crew used the procedure to clear debris off the River Road and Chester Turnpike Roads in March 2020, but the procedure is used regularly for each storm. Even in July, a plow is placed on a truck for a windstorm debris clean up.	Included as a written procedure in the SOPs since the process has work so well for so long.
Jun 2016	HD Standard Operating Procedures	HD follows the MUTCD for Storms, the EOP's Checklist for Flooding, the ESF Highway for cleaning of storm drains, and the ESF for blizzards.	Entire Town	High	Highway Department	Updated with the Town's EOP in 2016.	Obtain copies of the SOPs from the EOP to familiarize Dept with the content. Update SOPs to comply with current HD procedure. Train the staff on the proper procedures to follow.
Mar 2020	HD Winter Snow Road Maintenance Guidelines (unwritten)	Highway Dept has an unwritten winter maintenance policy which outlines priorities for plow routes, main	Entire Town	High	Highway Dept	New section of road has been added to existing route as a second run. Sidewalks	Develop a written procedure that follows the steps and process

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		lines and bus routes for hazardous conditions. Priority roads to be plowed are bus routes (first run), main corridors (first run), PD requests/ dispatches HD plows. Sidewalks are plowed immediately. Crew works 7-3 in winter, outside of this time, PD contact Road Agent when it is time to address road issues.				have been incorporated as a priority at the behest of the schools.	already taken by the Highway Dept and partnering Depts such as Police Dept.
April 2020	HD Procedures to Cutback Overgrown Limbs and Brush Mowing (Unwritten)	Program has been reinstated and funding can be allocated annually. The funding and priorities had to be directed to other projects previously, now the Town is caught up. Had a service bartering partnership with Pembroke for maintaining. Removing overhanging (hazardous) limbs near power-lines will reduce that potential hazard in the Town. HD communicates with Eversource, who has a system to evaluate annually to make sure that branches are cut back from power lines to reduce the potential hazards from wind. HD follows RSAs for cutting trees along roadside.	Town Roadways	High	Highway Dept	In 2019 the cutting and mowing program was put out to bid for a contractor to perform this service to be completed in Apr 2020. Program had been funded yearly but resources had been reallocated (Construction Services) until this year. Prior, the Dept staff had removed overgrown brush individually when needed	Fund the Construction Services budget for the purpose of overgrown and hazardous limb trimming/removal.
April 13, 2020	PD Mutual Aid Agreements with Surrounding Towns	Auburn, Bow, Candia, Chichester, Concord, Deerfield, Epsom, Hooksett, Northwood, Pembroke, Pittsfield, Raymond	Regional	High	Police Dept	Mutual Aid agreements were updated when Paul Paquette was appointed and then again when Michael Stark was.	Ensure all Police Department Mutual Aid agreements are up to date with the proper chief executives

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							executing the agreements.
April 13, 2020	PD Standard Operating Procedures(SOPs)	Numerous SOPs to address ICS, terrorism, explosives, information sharing. Initiated CALEA accreditation process.	Entire Town	High	Police Dept	About half of the policies have been updated and reviewed. About 5 new ones have been adopted. In 2020, all the policies will be consolidated into one book.	. Undertake regular update and review of the Police Department's SOPs to keep them up to date and current with applicable laws and guidelines.
April 13, 2020	PD Dispatch Service	Merrimack County Sheriffs Regional Dispatch Center. PolicePad information sharing program being fielded with new tablets to upgrade laptops	Entire Town	High	Police Dept	New tablets were put in the cruisers with IMC Mobile added. They were also put on the FirstNet network.	Purchase field tablets with AVL and information integration software
April 13, 2020	PD CNHSOU Regional Special Operations Unit	Member of the Central NH Special Operations Unit which provides regional (25 towns and cities) specialized Law Enforcement assistance and logistical support services to Allenstown otherwise beyond the PD's capabilities. Includes high risk situations, like tactical, Incident Command, Crisis Negotiation Team, Disaster Response, drug raids, hostage rescue, barricaded suspects, search and rescue. Have utilized Unit for call outs, conducted joint several exercises.	Regional	High	Police Dept	Additional personnel have been put on the team. One was made a team leader and another was selected to be an assistant team leader. Additional officers have received MFF training.	Train more APD personnel to be on the team. Develop mobile field force capability to respond to riots and other civil disturbances
April 13, 2020	PD Mutual Aid Agreement with NH IAC	APD participates in the state Information Analysis Center to share intelligence information and to provide staff for intelligence work as	Statewide	High	Police Dept	Mutual Aid agreement was updated when needed.	Conduct a joint exercise with NH Information Analysis Center member

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		needed. New agreements were signed in 2012					
April 13, 2020	PD Suspicious Package Protocol	Chief worked with collaborative team at the NH DHHS lab to develop statewide protocol. Protocol was placed on all laptops for field use. FBI quick reference sheet provided to all officers for suspicious packages and suspected IED.	Statewide	High	Police Dept	Suspicious package guidelines were adopted and issued to officers.	Conduct exercise to test suspicious package protocol with schools and Town Hall
April 13, 2020	PD Explorer Post	For age 14-21 young adults interested in law enforcement, APD Explorer Post provides training. Purpose is for young adults to provide support in times of need to PD: Parking and traffic control, public relations and notification, and general support during disasters.	Entire Town	High	Lt.	Meet twice per month, also trail with FD on different activities, including water rescues, extraction, CPR & First Aid, ICS 100. Five (5) Explorer members attended CERT training. This continues to grow with the help of all the officers.	Explorer Post should become more integral with the Town's emergency operations. Training in law enforcement related issues as well as emergency first aid, search and rescue, communications, and incident management.
April 13, 2020	SD DARE Program	The DARE Program has not been done in the schools for a number of years. An SRO officer has been approved for next year and will reinstate the DARE Program.	AES & ARD	High	School District	DARE program has been put on hold as there is no SRO	As the SRO works with the schools, a more comprehensive program may be put in place
Oct 2019	SD Identified Evacuation Sites	Evacuation procedures are outlined in both the Crises Management Plan and in the Emergency Procedures Quick Flip Chart. These procedures have been in place and will be monitored.	AES & ARD	High	School District	Practiced drills with the town yearly.	Evacuation should be practiced at least every year.
Apr 2020	TA Cloud IT infrastructure	Implementation of Cloud IT server to serve all departments with robust	Entire Town	High	Town Admin	Each Dept is now on the cloud where all	Contractor reviews the software

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	e for All Departments	virus/hacker protection plan. Phishing and malware protection. Email filters are good, encryption software works on specific words or information in emails and files. Recipient needs to authorize to protect communication				documents are stored and accessed for work.	annually and provides the town updates based on necessary findings
Quarter 2020	TA Safety Committee	Town Admin chairs the committee four times per year. Topics include employee and facility safety, first aid equipment, workers comp accidents and employee safety techniques (gloves, reaching, seat belts, equipment usage, etc.) The Fire Chief attends quarterly meetings. Employees and Management on the Committee.	Town Buildings	High	Town Admin	Hold the meetings quarterly, meet in different locations. Each building has a checklist for risks. Each Dept has at least one member on the Committee.	Schedule a virtual meeting will be scheduled for May, meet in different buildings. Agenda includes safety inventory of buildings. Encourage interested staff to provide input at any time. Review the safety policy to determine of changes should be made, for safe and healthy workplace for public, staff and volunteers
Apr 2020	TA Communication Liaison / Officer	The Town Administrator disseminates information as needed, providing information to all the Town Departments. Information is disseminated to all departments through the town website and email list group.	Entire Town	High	Town Admin	Email subscriptions from Town website regarding Town news, Committee agendas, information	Fix the database, as current subscribers are not being notified. Produce a pandemic notification to update the citizens and subscribers.

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Q1 2020	WW Standard Operating Procedures (SOPs)	SOPs are followed to ensure proper testing, handling of chemicals, and to ensure safety of staff and community. Each SOP is attached to a work order.	Downtown	High	Wastewater Treatment Dept	Updated regularly as attached to work order, such as valve modifications.	Improve WWTF standard operating procedures to follow the most recent regulations set by Federal and State rules.
ALLENSTOWN TECHNICAL SKILLS, TRAINING, AND DRILLS							
2005 - 2017	EM ICS NIMS Training	ICS and NIMS training. Higher level of training completed in many departments. A lot of independent training necessary by volunteers and staff. Certificates can be obtained.	Entire Town	High	Emergency Mgt	New EMDs have the newest certifications and take courses as needed	Take additional training courses when they become available or relevant to the situation. Train Fire Department, Highway and Administrative staff on basic ICS and NIMS. Undertake position-specific ICS training.
April 2020	FD Fire Fighter In-Service Training	Weekly training provided by the members of Dept and outside instructors. Added ALS personnel to the service. Training includes but is not limited to EMS-related activities, hazardous materials, rescue, etc and maintaining standard fire suppression skills per state and federal requirements	Entire Town	High	Fire Dept	Cross-trained FD staff and volunteers weekly to keep skills current	Recruit and retain Fire & Rescue personnel. Train weekly and supplement with Fire Training courses
April 2020	FD Monthly Fire Training	Department trains monthly. Of the 21 members, 4 are certified Fire Fighter Level 1, 14 are FF level 2. The Town	Entire Town	High	Fire Dept	Most of the crew are now FF Level II. Most members	More members to become NIMS compliant and certified Level

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		pays for certification. Developed a schedule of training for Fire Department activities. The schedule will enable members to plan accordingly to attend training sessions.				have had NIMS training.	1. All members should be CPR and defibrillator trained.
April 2020	FD Monthly EMS (Tri-Town Ambulance) Training	Monthly training with Tri-Town EMS has included NCCP recertification, incident command. Monthly area training exists for EMS to practice working with other communities.	Entire Town	High	Fire Dept	4 members were trained to EMR (Emergency Medical Responder) level	Train more of the Call force membership to EMS certified.
April 2020	FD NIMS & ICS Training	Personnel are NIMS and ICS 100, 200, 700 and 800 certified and Senior Staff are ICS 300-400 certified. Personnel have attended TEEX Enhanced ICS training.	Entire Town	High	Fire Dept	Members have either attended classroom or online training for NIMS.	Offer Fire Department personnel continuing education through the NHFA.
April 2020	FD EMS Mass Casualty Training	Training occurs on a regular basis for Fire department. The Mutual Aid system occasionally holds larger drills to maintain skills.	Entire Town	High	Fire Dept	Held annual refresher training of department	Incorporate state and national training requirements.
April 2020	FD Explorer Post	The Explorer Post gives experience of community and volunteering to 15-21 year olds. The Fire Department gets assistance and the teens may one day join the Fire Department, or establish a career, as a result of their positive experience	Entire Town	Low	Fire Dept	Explorers have aged out, some have become FD employees. New Explorers have enrolled with the program.	Work with the Concord Regional Technical Center Emergency Services Program. This is a High School level program that trains students for entry into the Emergency Services career fields.
Apr 2020	HD Highway Department Training	All HD employees have ICS trainings, participate fully in school exercises. Training can also include	Entire Town	High	Highway Dept	Classes on back injury prevention training, sexual	Undertake Highway Department training and

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		CPR, chainsaw, flagging, traffic management, defensive driving, transfer station certification, first aid, blood borne pathogens, debris management training, traffic control course, winter operations, downed power lines, fall protection, hoisting, culvert installation, etc. Many are completed through Primex (insurance). All staff attend annually for continuing certifications (CPR, defensive driving, NH DES transfer station certification, and others have to be done in person).				harassment, collision avoidance while driving, social media ethics have recently been taken. Since most of the crew is at home in April, these trainings have been taken to continue education.	participate in Town exercises. Obtain certification for at least 2 HD staff as NHDES Certified Culvert Maintainers. Engage in cross-training to transfer information from older employees to the younger employees. Train at least one staff member to become a UNH T2 Roads Scholar.
April 13, 2020	PD Annual Training	Firearms, First Aid, CPR/AED, Disaster response, tactical, IED training in 2012 and 2013. Also: training has been provided for fire arms, taser, CPR/defibrillator, OC pepper spray, active shooter, and other situations. Officers take part in annual exercises that will keep them trained on how to deal with large scale emergencies of natural and human made causes.	Entire Town	High	Police Dept	All this training has been completed each year.	Train for ICS position. Train for enhanced IC/UC at TEEX for additional staff members. Hold active school shooter training
April 13, 2020	PD Police Department In-Service Training	Training is provided every month with two hours of training available to officers.	Entire Town	High	Police Dept	Officers have had in-service training continually.	Develop a standard training for new officers and one for continuing education.
April 13, 2020	PD	Participated in regional/statewide	Regional/Statewide	High	Police Dept	No regional drill was held,	Participate in regional/state

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	Regional Terrorist Exercise	terrorism response exercise dealing with WMD. Full scale exercise conducted in 2012 with NG, SP, FBI, DHHS, Fire Marshal, CNHSOU involving Chemical and Nuclear weapons.				but members have taken part in smaller drills since 2015	wide terrorism exercises when they are available. Conduct an active shooter drill in Town that includes the schools.
April 13, 2020	PD Cybercrime Training	Train personnel on procedures to investigate cybercrime and purchase necessary equipment to investigate these crimes	Statewide	High	Police Dept	Select officers have received this training and we use mutual aid for more technical investigations.	Conduct cybercrime training and purchase necessary equipment.
April 2020	PD Bomb Threat Training	Police Dept meets with school officials and Fire Dept to plan for and provide solutions for bomb threats and scares.	Allenstown Elementary and Armand R. Dupont School	High	Police Dept	Annually met with all staff of the three schools and the FD conducts routine site visits to maintain familiarity with essential facilities. Also conducted individual trainings held at the various schools.	Review procedures for enhancing response to related incidents. Consider adding other critical/important facilities.
Feb 2020	SD Annual Drills at Schools	Drills include fire, haz mat, off-site, lock down, shelter in place, etc. Drills are done at least monthly, so there are a minimum of 10 drills per year.	AES & ARD	High	School District	Drills continued during the interim, some involved the Police Dept	Vary the types of drills done each month and modify as needed in concurrence with the School Emergency Response Plan
Apr 2020	TA Attendance at Seminars by Town Officials	ICS/NIMS training to include 100,200,300, 400, 700 and 800. ICS specific training especially Finance/Admin Section Chief training. ICS 100, 200, 300 completed for most staff, 3 personnel	Entire Town	High	Town Admin	Many of the administrative staff and the volunteers are in need of new NIMS and ICS classes	Train staff on the basic ICS/IMS courses and focus on Finance/Selectmen Admin Section

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		attended the TEEX course IC/UC enhanced.					position specific training. Make more training time and money available to more officials/staff.
Dec 2019	WW Bi-annual Operator Certifications, Licensing and Training	Operators are required by NH DES to complete training each year for operator license renewals. Two CEUS are necessary to maintain certifications. For 6 operators (Grade 1-4) and 2 laborers (non-certified) Spring trainings are cancelled. Two Grade 4s, 2 grade 2s. Several maintain a laboratory certification (2), collection systems licenses (4).	Downtown	High	Wastewater Treatment Dept	Certifications are obtained bi- annually by each operator.	Increase the certification levels of 2 operators from Grade 2 to Grade 4.
ALLENSTOWN ASSETS, SECURITY, AND RESOURCES (SPECIALIZED EQUIPMENT)							
2020	EM/PD/FD Interoperability Communication Among Fire, Police, Highway Departments	Radio network meets interoperability standards. Police and fire share portables with similar frequencies, so communication is easily accomplished, but Highway has more limited ability and may require cell phones. Radio equipment upgraded to meet narrow banding requirements. PD handles the Town communication while FD programs radios for all 3 Departments. Fire Dept receives regular grants for new radios.	Entire Town, County, State	High	Emergency Mgt with Police and Fire	Fire and Police radios have been updated to most recent frequency lists. Police and Fire are switching cell services over to FirstNet. FD and PD have expanded mobile command communication abilities.	Upgrade existing radio networks. Investigate the use of the town radio frequency and train departments with its use and update town radio policy.

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Oct 2017	EM Town Shelter at Community Center (PRIMARY) Allenstown Elementary School Gym (SECONDARY)	The gymnasium will provide shelter in a disaster. Has worked effectively but lacks shower facilities. The school has an emergency generator. Depends on the size of the disaster event which shelter is activated	Regional	High	Emergency Mgt	Shelter Annex developed. Regional shelter plan/Mutual Aid agreement signed. Few people used the shelter in 2017 although it was opened.	Undertake regional shelter exercise. Provide training to shelter staff.
2020	EM Emergency Electrical Generators Departments	Generators are installed or available at every essential Town facility.	Downtown	High	Emergency Mgt, Individual Depts	Annual maintenance occurs twice per year. Portable generator purchased for AES. Regular testing schedules of generators. Transfer Switch installed. PD generator just installed in 2018	Increase security measures around generators to discourage vandalism or sabotage
2020	EM Base Radio for EOC	EOC's base radio Installed with grant funds in 2008. System fully functional. 1 base radio in EOC	Entire Town	High	Emergency Mgt	Updated radio frequencies, 2020	Improve Internet speed and capacity for EOC
2020	EM Emergency Operations Center in Fire Station	EOC is located at Fire Station, 1 Ferry Street. EMPG funds provided electronic displays. Computers, forms and signing updated. EOC currently contains: town's VOIP phone system, a generator, internet connection, cell phones, a fax line, and 1 base radio. EOC accommodates 10-15 people in the EOC room, more can be housed in the other areas of the Fire Station.	Entire Town	High	Emergency Mgt, Fire Dept	Purchased some new furniture, upgrades to TV and monitors, and upgraded wifi ability.	Develop redundant notification procedures to address contingencies.
2019	EM	EM trailer parked at the Transfer Station.	Entire Town	High	Emergency Mgt	Conducted complete	Consider additional

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	Emergency Management Trailer	Contains cots, emergency management equipment, pillows, first aid, basics for shelter opening. The trailer is full to capacity.				inspection and count of trailer cots and equipment. No damages, leakages reported.	security measures to dissuade vandalism. Determine whether new support items should be purchased to replace older items. Develop a supply replacement schedule. Consider purchasing new supplies for the trailer to increase its response capabilities.
Aug 2019	EM Suncook River USGS Water Gage	River gage on the Suncook River at Rt. 28 bridge/ Pembroke town line. Provide real time water levels. Gage Installed with EMPG grant.	Suncook River Floodplain	High	Emergency Mgt	Attended US Geological Survey meetings at Fire Academy regarding river gage in Aug 2019	Work with NOAA and USGS to upgrade gage to provide water level predictions.
2020	EM Highridge Trail Radio Tower Generator (in Town of Hooksett)	Backup power for the radio tower that provides police, fire, highway and Emergency Mgt radio repeater capability for Allenstown, Hooksett and the Sheriff's Dept. EMPG funds paid for generator which was installed at the site. Town provides keys and has equipment.	In Hooksett & owned by Hooksett. Accessible by Bailey Avenue. Equipment belongs to the County	High	Fire Chief, Police Chief and County Sheriff	The Town provides the key to a Power Generation contractor (a County agent) who must physically access the gate to perform generator maintenance twice per year.	Review Highridge Trail Radio Tower Generator maintenance program, process, and access to ensure the backup power functions in all conditions.
2020	FD Emergency Services Backup Power	Fire Station has a 100kw diesel generator to operate entire facility	Entire Town	High	Fire Dept	Basic repairs were needed at the annual maintenance checks, no major issues.	Develop a plan for future replacement, annual maintenance contracts

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2020	FD Portable Digital Radios for Fire Department	Entire Town radio system is digitalized. Department complies with FCC regulation with narrow banding and worked to purchase digital radios. However, Capital Area Mutual Aid Fire Compact operates on analog frequencies and not digital frequencies. Station has 4 base radios total in FD, 3 dedicated to FD.	Entire Town	High	Fire Dept	Addition of new FD notification software, "Iamresponding"	Seek grant funding for replacement portable digital/ analog radio equipment in coming years.
April 2020	FD Dry Hydrants and Cisterns in non-hydrant Areas	Seven (7) cisterns in rural areas. 30,000 gallon capacity. One (1) dry hydrant in state park. Two (2) additional cisterns are in place in new development.	Rural Areas	High	Fire Dept	Inspected dry hydrants and utilized them during fires	Add new cisterns in non-hydrant areas of town when new construction occurs. Replace old dry-hydrants and find new dry-hydrant locations.
2017	FD Water Rescue Capabilities	The Town has a boat to use for water rescue in response to the extreme flooding Allenstown experienced. More equipment was obtained to facilitate rescue during flooding conditions: trailer, ice rescue suits, ropes, personal flotation devices, and water rescue helmets	Merrimack and Suncook Rivers, Water bodies	High	Fire Dept	Purchased new rescue boat with more powerful motor for better swiftwater capabilities in 2017	Locate and take training related to water rescue, which is not easy to find or coordinate with volunteer schedules.
2017	FD 24/7/ 365 Coverage	Enhancement of the FD program to provide 24/7/365 coverage for fire and EMS operations at a minimum of the intermediate level.	Entire Town	High	Fire Dept	Dropped to 1 fulltime FF, from 2, in 2017. 2nd position filled with per-diem FFs for the current M-F, 8a-5p shift.	Aim to provide 24/7/365 service with increased full time staff levels at the Advanced EMT levels for fire and EMS operations.
2016	HD	Obtained a large diesel generator (~100 gallons) -	Highway Garage	High	Highway Dept	Obtained a large generator	Utilize the generator

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	45kw Installed Permanent Generator at Highway Garage	45kw with installation, pad, 2 transfer switches, underground cables included. (Applied for EMPG grant in February 2013.)				- 45kw with installation, pad, 2 transfer switches, underground cables included in 2016. Automatically powers in minutes on when electricity is lost, last during a Dec 2019 snowstorm. Weekly testing on Thursdays for 20 minutes, professionally maintained annually.	with the new highway garage, whether a new one is built onsite or if a new building is constructed elsewhere, transfer the permanent generator to the new facility.
2020	HD Two-Way Radio Communication	A different radio frequency than the PD is used by the HD. Some radios are newer digital (Fire) and some are analog (Town repeater). HD obtain older, pre-used radios from Fire and Police Departments. HD Repeater Frequency can enable communication with FD & PD after cell calling Depts to open frequency. Most HD radios can contact FD. Portables can reach PD band. HD has 2 portables, 10 mobiles, 1 base station. Fire Dept can update them to latest frequencies and/or provide older matching digital radio set	Most of Town	Moderate	Highway Department with help from Emergency Mgt	Two new radios were purchased for the vehicles, and 2 used mobile radios from the PD replaced older radios.	Fire Dept to update Highway radios to latest frequencies. Seek EMPG or another radio grant funding for new radios for the Highway Department: 2 portables, 10 mobiles, 1 base station. May be cost prohibitive but worth investigating
2016	HD Asset Management Program	Displays culverts, catch basins, underdrainage, culverts, pipes, outfalls, detention ponds and supports HD revisions to	Entire Town	High	Highway Dept	Developed a new process for easier use by HD staff to	Meant to be a temporary storage of HD asset data revisions.

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	Using Google Earth	the assets. Meant to be a temporary holder of information for the data to be transferred to VueWorks.				make changes to the assets	Transfer info to VueWorks
Mar 2020	HD New Highway Garage	Have some preliminary plans from contractors, builders for an upgraded and expanded Highway Garage. Goal is to keep equipment inside and stored properly. Proper office, restroom and kitchen facilities. Reuse of the installed generator is possible if built on the same site.	161 Granite Street or a new location	High	Highway Dept	Investigating where to locate a new building for the highway department. Funded a CRF account annually for this purpose.	Complete the construction of a new facility
Spring 2020	HD Stabilize Pease Brook Culvert along Mount Delight Road Annually or Upon High Water	Stabilize the bank of Pease Brook along Mount Delight Road with riprap each summer to inhibit erosion of Mount Delight Road. 40" culvert next to 30" culvert, should be upgraded to a box culvert. Had been closed during Mother's Day Flood 2006, closed 2 days in 2010. About 200+ would be landlocked if the culvert was washed out. The HD has detailed records going back to the 1990s of a problem there.	Pease Brook Bank along Mount Delight Road	Moderate	Highway Dept	Project went out to bid as part of the FEMA HMGP 2006 but voters voted it down the upgrade.	Upgrade the two culverts on Mount Delight to a box culvert. Monitor the culvert for signs of erosion and any handle new situation accordingly.
Apr 2020	HD & PD Barricades and Cones	Plastic barricades, some have been vandalized, not enough. The State DOT would be asked to provide additional barriers and cones when necessary. HD - 6 barricades and 40 cones. PD- 5 barricades + 30 cones	Police and Highway Departments	High	Emergency Mgt	Purchase a few dozen every few years to replace damaged and missing. Have enough in Town there is a major event	Develop protocol for utilizing the barricades locally prior to requesting them from state and federal agencies. Use WebEOC to communicate problems & needs.

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2020	HD Sandbags	Sandbags are stored at Highway Garage, used for flooding events. Bags are brand new, never been filled (degrade after filling). Have about 20 sandbags.	Highway Garage	Low	Emergency Mgt	Recently purchased a new batch to have on hand.	Rely on the National Guard to provide those to the Town through the State EOC
April 13, 2020	PD Generator Backup Power	Generators will be maintained in accordance with applicable NFPA codes.	Entire Town	High	EMD	Generators have had their annual service since 2015, any issues were fixed. The one at the PD was replaced in 2018.	Replacement of generators should be part of a capital improvement plan.
April 13, 2020	PD Incident Command Post Vehicle	Purchased and equipped SUV 2012 with Incident Command Post equipment.	Town wide	High	Police Dept	PD Pickup was purchased to use as a IC vehicle and a grant was applied for and approved for an IC Trailer that is available to all departments and area groups	Upgrade existing SUV Incident Command Post equipment and share existing regional IC vehicles for this purpose.
April 13, 2020	PD OHRVs	Equipment includes one OHRV, which has been used for missing persons in remote locations for navigating terrain, and patrolling trails. Having this vehicle provides better access which may not have been possible and a higher level of life safety. A light trailer was also purchased	Entire Town	High	Police Dept	OHRV patrols have been done and the OHRV has been maintained.	A new OHRV should be purchased to replace the aging 2003 Yamaha
April 13, 2020	PD & TO Generators	Generators in Town Office and Police Department were purchased through a FEMA grant. This will keep emergency operations functioning during a disaster event.	Town Office and Police Dept	High	Emergency Mgt	Generators have been serviced and maintained annually, a new generator was installed at the PD in 2018	Upgrade backup generators using the Capital Improvements Program.

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April 13, 2020	PD School Resource Officer	The SRO attends meetings, drafts alarm response procedures and in house procedures, provides copy of school admin procedures. Serves as liaison between PD and Schools.	Allenstown Elementary and Armand Dupont Schools	High	Police Dept	The SRO position was cut by the school district.	Fund the position and related activities.
April 13, 2020	SD Safe Routes to School	Safe Routes to School project was initiated by the School and Town Departments together to extend a sidewalk from Main St sidewalk into elementary school. The purpose is to make it safer for students to walk to school.	Main Street to Allenstown Elementary School	High	School District with Town Administration	Grant for Safe Routes to School project applied for and funding approved Work was completed for this project.	Project is complete.
2009	SD Generator for the Allenstown Elementary School/ Town Shelter	Researched grant assistance for purchasing a generator for the Allenstown Elementary School (2009) and obtained the generator for this emergency shelter.	AES (Emergency Shelter)	High	Emergency Mgt with School District	Opened in 2017 for the windstorm.	Follow CAPHN guidelines for regional sheltering
Circa 2013	SD Buzz-in Locked Door for Elementary (and ARD)	Both schools have had a Buzz-in system for the past two years. Safety concerns are continuously reviewed.	AES & ARD	High	School District	Buzz in doors continue to serve their function well. Security cameras were installed in both locations.	Discussions and studies on options for school buildings (new win, etc.) and ensure the safety measures will be equal or the same security options.
Mar 2020	WW VueWorks Asset Management Software	Asset management software inventories and manages infrastructure for wastewater and other Departments. Each asset has a rating for impact of criticality. Used on a daily basis by Wastewater, regular updates to the software.	WW boundaries : to Hookset & Pembroke town lines, north to River Roads 2-3 miles past Highway	High	Wastewater Dept	All of the wastewater lines and assets at the WWTF have been inventoried and added to VueWorks.	Encourage all Depts to use VueWorks to manage their Departmental assets so Allenstown can retain its data on one central platform.

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		Software has potential for use by other Depts to manage their assets. Asset revisions have been found to be difficult by Depts that sometimes lack admin privileges.	Dept/ Entire Town				Establish a protocol and provide training and permissions to Depts to enable assets to be added and revised.
2020	WW Backup Electrical Generators (2)	Two permanent generators are located at Facility and River Road pump station when the plant and pump station were constructed in 1975.	Canal Street and River Road	High	Wastewater Treatment Dept	Held service contracts with manufacturer to service them twice per year. Tested every two weeks under load.	Investigate installing security cameras at the River Road pump station for security purposes.

Source: Allenstown Hazard Mitigation Committee

FINANCIAL CAPABILITIES

The financial resources in **Table 41** available for hazard mitigation projects are those the Town has access to, has used in the past, or may be eligible to use in the future for hazard mitigation projects. These often include FEMA Public Assistance Grants (Disaster Recovery Costs), Warrant Articles, Town Capital Improvements Program (CIP) 2020 Project Funding, Department Operating Budgets, Bonds and FEMA and NH Department of Transportation grants. There are **2** categories, **Financial Programs or Funding Resources**; and **Potential Funding Programs** for hazard mitigation projects.

**Table 41
Financial Capabilities**

<u>Latest Adoption or Version Date</u>	<u>Capability Assessment:</u> Financial	<u>Description</u> Related to hazard mitigation planning and coordination	<u>Location of Capability</u> Entire Town or Selected Areas	<u>Level of Effectiveness</u>	<u>Responsibility</u>	<u>Changes Since Last Haz Mit Plan (2015)</u>	<u>Future Improvements to Capability</u>
ALLENSTOWN FINANCIAL PROGRAM OR FUNDING RESOURCE FOR HAZARD MITIGATION PROJECTS							
Feb 2013	BOS FEMA Public Assistance Grants (Disaster Recovery Costs)	Public Assistance Categories A-G may become available when disasters are declared if the community has an unexpired approved Haz Mit Plan. Utilize the available FEMA funding to help recover from declared disasters.	Entire Town	High	Town Admin with EM	Used for PA-B Protective Measures (snow removal) in Feb 2013	Utilize the FEMA PA program to help with disaster costs
2019	FD Firefighting Grant from FEMA	Funding source tapped for safety and communications equipment.	Entire Town	High	Fire Dept	Applied for grants of all sources, enlisted the assistance of a Grant Writing service, in 2019	Research ways to fund major fire equipment.
2019	FD Forestry Grant from NH DNCR	Funding source for Wildland fires, equipment, PPE and communications.	Entire Town	High	Fire Dept	Awarded a grant that was utilized for communications, 2019	Submit NH DNCR grant applications for wildland fire safety.
2013-2020	WW Vue Works Asset Management Software from NHDES Clean Water State	Asset management software inventories and manages infrastructure for wastewater and other Departments. Each asset has a rating for impact of criticality.	WW boundaries : to Hookset & Pembroke town lines, north to River	High	Wastewater Dept	All of the wastewater lines and assets at the WWTF have been inventoried	Enable the software for easier use by all Town Depts

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	Revolving Fund for MS-4 Stormwater Program Sewer Program	Used on a daily basis by Wastewater, regular updates to the software. Software has potential for use by other Depts to manage their assets.	Roads 2-3 miles past Highway Dept/ Entire Town			and added to VueWorks.	
ALLENSTOWN FUNDING PROGRAMS WHICH COULD BE USED FOR FUTURE HAZ MIT PROJECTS							
Not Yet Used	HD HMPG or Other Federal Grant to Stabilize Pease Brook Culvert along Mount Delight Road	Stabilize the bank of Pease Brook along Mount Delight Road with riprap each summer to inhibit erosion of Mount Delight Road. 40" culvert next to 30" culvert, should be upgraded to a box culvert. Had been closed during Mother's Day Flood 2006, closed 2 days in 2010. About 200+ would be landlocked if the culvert was washed out. The HD has detailed records going back to the 1990s of a problem there.	Pease Brook Bank along Mount Delight Road	Moderate	Highway Dept	Project went out to bid as part of the FEMA HMGP 2006 but voters voted it down the upgrade.	Upgrade the two culverts on Mount Delight to a box culvert. Monitor the culvert for signs of erosion and any handle new situation accordingly.
Not Used Yet	HD EMPG or Other Federal Funding for Interoperable Radio Communications	HD as an emergency responder needs to have a set of equal, reliable radios for interoperability.	Most of Town	High	Highway Department with help from Emergency Mgt	Two new radios were purchased for the vehicles, and 2 used mobile radios from the PD replaced older radios.	Seek EMPG or another radio grant funding for new radios for the Highway Department: 2 portables, 10 mobiles, 1 base station.
Not Used Yet	PB Capital Improvements Program (CIP) Projects for Haz Mit (2021-2026)	CIP recently updated in 2020 and incorporates projects from all Dept. No mitigation projects were proposed but general improvements to facilities can help mitigate disaster events	Entire Town	High	Planning Board	CIP recently updated in 2020. No specific mitigation projects were proposed	Future updates to the CIP can recommend long term funding of CIP projects or new Capital Reserve Funds

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2021	WW User Fees and Related Projects	WW has 5 capital reserve funds and is profitable from septic hauled waste. Sometimes used to offset user fees. Pembroke Sewer User Fees, Allenstown User Fees, and Septic Hauled User Fees.	Suncook Pond (aka Iris Pond)	High		Working on installation of the new Suncook Pond Pump station to eliminate piping under Suncook Pond.	Consider future conceptual project to expand dewatering capabilities.

Source: Allenstown Hazard Mitigation Committee

EDUCATION AND OUTREACH CAPABILITIES

In Table 42, identifying Town Departments have *Public Outreach Programs, Educational Activities and Notification* methods already in place or those which could be implemented can supplement or encourage mitigation activities and communicate hazard-related information to residents, businesses and the general public.

Table 42
Education and Outreach Capabilities

Latest Adoption or Version Date	Capability Assessment: Education and Outreach Programs	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2015)	Future Improvements to Capability
ALLENSTOWN PUBLIC OUTREACH PROGRAM, EDUCATIONAL ACTIVITY, NOTIFICATIONS							
2020	FD Public Outreach	Fire Prevention and Public Education provided by members through the schools and Open Houses. The Open Houses provide fire and EMS education	Entire Town	High	Fire Dept	Held annual Open House, Public Awareness campaigns via Social Media.	Offer Fire Prevention and Public Education programs to the public. Work with CRTC (Concord High School) for recruits.
Mar 2020	EM Public Officials Notification Process During Emergencies	Allenstown Emergency Alert Notification System AEANS created providing email and text notification to public officials, Groups A,B,C. Notification list updated when needed. The EOP protocol is followed	Entire Town	High	Emergency Mgt with Public Information Officer (Town Admin)	Updated Town website with emergency information with PIO help, added information to Dept website	Review new public notification technologies and options as they become available.
Mar 2020	EM Public Awareness and Education	Outreach to citizens, schools, and civic organizations. Public relations activities have been conducted with civic organizations, schools, daycares, and at Town Wide Events like Old Home Day.	Entire Town	High	Emergency Mgt	COVID-19 website info posted, message Boards at PD & FD. Handed out information at Old Home Day related to the American Red Cross, Public Health Network, emergency safety.	Interface with the public and provide awareness and education.

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6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Education and Outreach Programs	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2015)	Future Improvements to Capability
Apr 2020	HD Driveway Permitting Public Education	Right now, HD speaks to property owners individually about every necessary town requirement for driveway permits. The existing application is very simple, does not ask for all of the info necessary for the permit. An improved online driveway application, criteria checklist and information webpage would be more helpful	New and improved development	Moderate	Highway Dept	The permit materials are now available online.	Develop an improved online driveway application, a criteria checklist and informational webpage to assist with property owner understanding of the process and to speed up the permitting process.
April 13, 2020	PD Drug Take Back Box & Drug Day	People can drop off narcotics or whatever people have with immunity and also unused prescription medication. Getting people to turn their medicine in is difficult.	Police Station	High	Police Dept	Drug box was installed and is a well-used feature of the Police Department.	Advertise and make people aware of the resource
April 13, 2020	PD School Resource Officer/ Education for Students	Educational tool not only for drugs but safety protocol for children	Elementary, Middle and High Schools	High	Police Dept	The funding was cut by the school district.	Obtain funding for the position.
2019	WW Public Education of Proper Material to Flush "13 Things You Shouldn't Dump Down the Drain"	Wastewater produces videos that are hosted on their website and develops brochures on flushable material. Facility holds an Earth Day presentation and tour with the Elementary School. Facility has given tours to PACE students and the Green School (Pembroke). Wipes, grease are the next big topics.		High	Wastewater Dept	Produced videos and brochures on best management practices on "13 things you shouldn't dump down the drain", added to their website.	Provide outreach to local and area schools, produce more videos on other topics such as grease, wipes, microbeads.

Source: Allenstown Hazard Mitigation Committee

Review of Existing Plans

As described above, during the Hazard Mitigation process and the identification of existing mitigation **Capabilities**, the Hazard Mitigation Committee used their knowledge of the existing plans, policies, procedures and other documents utilized for their Department duties to develop Capability **Future Improvements**. However, several additional documents not listed in the **Capability Assessment** are also utilized by the community and have a positive relationship to the **Hazard Mitigation Plan 2020**. Most of the documents below are not the Town’s documents, but the hazard mitigation goals, objectives, and/or Actions in this Plan are supported by the **Mitigation Support and Resource Documents** listed below in **Table 43**.

**Table 43
Mitigation Support and Resource Documents**

Latest Adoption or Version Date	Mitigation Support and Resource Documents Not Listed within Capability Assessment Tables
Feb 2007	NH DHHS NH Influenza Pandemic Public Health Preparedness & Response Plan 2007
2007	USGS Flood of May 2006 in NH
2008	USGS Flood of April 2007 in NH
2009	USGS Flood Study of the Suncook River in Epsom, Pembroke, and Allenstown New Hampshire
May 28, 2008	Geomorphology-based Restoration Alternatives Suncook River, Epsom, New Hampshire, (with Appendix A), Vanasse Hangen Brustlin, Inc. (VHB)
July 2008	FEMA Independent Evaluation of Recent Flooding in New Hampshire, (with Appendix A & B)
2010	NWS Thunderstorms, Tornadoes, Lightning. Preparedness Guide
Apr 2010	FEMA Flood Insurance Study for Merrimack County 2010
Apr 2010	NH Hospital Mutual Aid Network MOU
2011	NH DES Management of Collected Debris Following Severe Storm Events Fact Sheet
October 2011	USGS Analysis of the Transport of Sediment by the Suncook River in Epsom, Pembroke, and Allenstown New Hampshire, after the May 2006 Flood
Dec 2011	NH DHHS Disaster Behavioral Health Response Plan
Feb 2012	NH DHHS Child Care Center Emergency Preparedness Guide
2012	USGS Flood Inundation Maps for the Suncook River in Epsom, Pembroke, Allenstown, and Chichester New Hampshire
Dec 2014	Tri-Town (Allenstown, Pembroke, Epsom) Ambulance Operating Plan
2015	NFPA 1 Fire Code 2015
Jul 2015	NH DOS Statewide Fire Mobilization Implementation Master Plan 2015
Jul 2015	American Red Cross of NH Strategic Plan – Humanitarian Services FY 2015-2020
Jul 2015	NH DHHS NH Excessive Heat Emergency Response Plan 2015
2015	NFPA 101 Life Safety Code 2015
Feb 2015	Central NH Regional Plan 2015
Mar 2015	NH State of NH Tickborne Disease Plan 2015
Sep 2015	NH DOS Bureau of Emergency Mgt Services EMS Provider Manual 2015
Jul 2015	NH HSEM NH Recovery Plan with RSFs 2015

Latest Adoption or Version Date	Mitigation Support and Resource Documents Not Listed within Capability Assessment Tables
Jan 2016	Eversource Energy Electric Operations Response Plan
Oct 2016	CNHREPC Central New Hampshire Regional Emergency Planning Committee Regional Hazardous Materials Emergency Plan 2016
	Capital Area Public Health Network Public Health Emergency Preparedness and Response Plan
Jul 2017	NH DHHS NH Arboviral Illness Surveillance, Prevention and Response Plan & Map 2017
TBD as provided	NHDES Dam Emergency Action Plans for High, Significant & Low Hazard Dams
Mar 2018	NH DOT Recommendations for the Ten-Year Transportation Improvement Plan (Projects) 2020-2028
2018	USGS Preliminary Stage and Streamflow Data at Selected Stream Gages for Flood of Oct 2017
Oct 2018	NH HSEM State of NH Multi-Hazard Mitigation Plan Update 2018
Dec 2019	NH HSEM State Emergency Operations Plan (EOP) with ESFs
Dec 2019	Federal Highway Manual Uniform Traffic Control Devices (MUTCD) for Streets and Highways

Source: Allenstown Hazard Mitigation Committee, CNHRPC

7 PRIOR ACTION STATUS

The **Hazard Mitigation Plan Update 2015** provided a basis to begin Action development, many of which originated from prior **Plans**. A review of the **2015** Actions is provided by the Hazard Mitigation Committee, determining which Actions have been **Completed**, **Deleted**, or **Deferred** to the **2020 Plan**.

Action Status Determination

The status of all Hazard Mitigation Plan Actions varies. Priorities over the previous five years can change, budgets are uncertain, and staff are allocated time for certain tasks. Actions developed, evaluated and implemented across Hazard Mitigation Plans accommodate existing, new, and future development (buildings and infrastructure). To accommodate the **2015 Plan's 72 total** Actions in addition to the **New** Actions from the **2020 Plan**, there are four designated Action types to describe the detailed Actions following within the **7 PRIOR ACTION STATUS** and/or **8 MITIGATION ACTION PLAN**:

- Completed**
- Deleted**
- Deferred**

Actions which were **Completed** from the **2015 Plan** are listed in **Table 44** along with completion dates.

Actions which were **Deleted** from the **2015 Plan** might have been no longer necessary or a priority to the Town, no longer relevant to the Town's situation or objectives, could not realistically be undertaken, were not financially feasible, were modified and incorporated into other existing Actions, or duplicated existing efforts of Allenstown's activities. Deleted Actions are listed in **Table 45**.

Actions which were **Deferred** from the **2015 Plan** are still important to the Town but were not completed because they did not have the staff capability or the funding to undertake them, other Actions took higher priority, more time was required for completion, or they may need to be repeated to be effective. These **Deferred** Actions are in **Table 46** and have been re-prioritized with the **New** Actions in the **Mitigation Action Plan**.

Changes in priority of the **Deferred 2015** Actions occurred over the last five years. The **2015 Plan** used the **12-36 Priority Score enhanced STAPLEE** system while the **2020 Plan** included both a **Ranking Score** and an **Action Timeframe** to determine priorities with a more useful **15-75 Priority Score enhanced STAPLEE** system. Both methods are described.

New Actions are described later in **8 MITIGATION ACTION PLAN**.

DEFINITIONS

The following definitions were used to ascertain which Actions should be considered *mitigation* Actions versus which should be considered *preparedness* Actions more suitable for incorporation into the *Town Emergency Operations Plan*. The mitigation Actions are those which are carried forth in this **2020 Plan** into the *Mitigation Action Plan*.

Action Type	Duration	Definition or Characteristics
Mitigation	Long Term	Action supports sustained risk prevention or reduces long-term risk to people, property and infrastructure. ↳ Best suited for <i>Town Hazard Mitigation Plan</i> .
Preparedness	Short Term	Action assists or supports planning, protective activities, public education, training and exercise. ↳ Best suited for <i>Town Emergency Operations Plan</i> .
Response, Recovery, Other Related	Short Term	Action supports preventative, response, recovery-related, repeated or deferred maintenance activities. ↳ Best suited for <i>Town Emergency Operations Plan</i> .

HAZARDS CONSIDERED

With **23** individual hazards evaluated in this Plan, it is not always practical to list each one when describing location vulnerabilities or solutions. In many cases, listing the more encompassing main hazard categories from chapters **3 GOALS AND OBJECTIVES** and **4 HAZARD RISK ASSESSMENT**, which are **Flood, Wind, Fire, Extreme Temperature, Earth, Technological** and **Human**, should accurately define the issues of most of the identified Actions or locations. Using these hazard categories would often better accommodate the situation in their broadness. The categorized hazards have also been used in the **APPENDIX A Critical and Community Facilities Vulnerability Assessment** but tailored when necessary.

In some cases, further hazard detail at a specific location or to describe an Action is necessary. When needed, the specific hazards addressed in this **Hazard Mitigation Plan** could be utilized, such as **Erosion** from the *River Hazards* category, **Storm** (generally applying to warm weather, all-encompassing storms) or **Tree Debris** from the *Wind* category, **Excessive Heat** from the *Extreme Temperature* category, or **Communications** from the *Long Term Utility Outage*, to provide the specific information needed to understand certain issues in Allenstown.

Therefore, when the main hazard categories of **Flood, Wind, Fire, Extreme Temperature, Earth, Technological** and **Human** are not precise enough, one or more of the specific **23** hazards evaluated may be utilized for greater accuracy.

Review of 2015 Actions

The **2015 Hazard Mitigation Plan** was written in a different format and its content had to comply with less specific review guidelines before the *Local Hazard Mitigation Review Guidebook (FEMA), 2011* became standardized and tailored by each FEMA Region over the years.

Allenstown’s mitigation Actions from the **2015 Plan**, which included Actions from the Town’s previous Plans, were allocated **Action Numbers** and each **Project’s** status was determined by the Hazard Mitigation Committee as either **Completed, Deleted** or **Deferred**. Over the previous Plans, the Actions numbers denoted by years were recorded as such. Actions from **2004 – 2010** which were **Completed** or **Deleted** and identified as such in the **2015 Plan** were not given numerical identifiers (**#NA**).

#NA	2004-2010 Plans
#1- 2010 to	#13- 2010
#14- 2015 to	#72-2015
#73- 2020 to	#97- 2020

A total of **29** mitigation Actions have been **Completed** from the **Hazard Mitigation Plans** as shown in **Table 44**. This includes **22** Actions completed since the **2015 Plan**, **7** of which are still being worked on and will remain as an active Action within the **2020 Plan’s Mitigation Action Plan**. These Actions were partially completed (**P**) and also appear on the **Deferred** list for project completion.

**Table 44
Completed Mitigation Actions**

Priority Score (2015)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
COMPLETED FROM 2015 PLAN						
N/A	#NA	Update Contractor and Equipment Operator List	Jul 2011	Emergency Management Director	\$0	All – See #63-2015
N/A	#NA	Update Volunteer Equipment and Operators List	Jul 2011	Emergency Management Director	\$0	All – See #63-2015
N/A	#NA	Develop Pre-Planned Incident Action Plans for Flooding and Severe Storms	Sep 2011	Emergency Management Director	\$6,000	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
N/A	#NA	Research Grant Assistance for Purchasing a Generator for the Allenstown Elementary School	Nov 2011	Emergency Management Director	\$58,000	Flood, Wind, Winter, Debris, Tropical, Extreme Temps, Utility
N/A	#NA	Enhance Existing Radio Networks Among Town Departments	Sep 2012	Emergency Management Director	\$132,000	Utility, Wind, Tropical, Debris, Winter

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7 PRIOR ACTION STATUS

Priority Score (2015)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
N/A	#NA	Develop Shelter Plan Agreement with American Red Cross	Dec 2012	Emergency Management Director	\$0	Flood, Wind, Winter, Debris, Tropical, Extreme Temps, Mass Casualty, Health
N/A	#NA	Upgrade Aged Fire Suppression Equipment	Mar 2013	Fire Chief	\$420,000	Drought, Fire, Wildfire, Lightning
COMPLETED FROM 2020 PLAN						
33 P	#13-2010	Update Wetlands Ordinance to Reflect New NH DES Standards	2012/2020	Planning Board	\$5,000	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
27 P	#14-2015	Establish Culvert Replacement Program <i>Suncook River Plan Action</i>	Gilbert Rd replaced 2018, Granite St 2016	Highway Department	\$250,000	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
30	#15-2015	Upgrade 265 River Road Culvert over Small Brook <i>Suncook River Plan Action</i>	2016	Highway Department	\$5,000	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
30	#17-2015	Upgrade 168 River Road Culvert over Bow Meadow Brook <i>Suncook River Plan Action</i>	2007	Highway Department	\$150,000	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
31	#21-2015	Include the Suncook River Fluvial Erosion Hazard Assessment (FEH) <i>Suncook River Plan Action</i>	2015	Emergency Management Director	\$0	Extreme Temps, Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
34 P	#22-2015	Work with NOAA and USGS to Upgrade Route 28 Stream Gage to Provide Water Level Predictions <i>Suncook River Plan Action</i>	2015/2021	Emergency Management Director	\$3,000 annually	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River
32	#25-2015	Obtain a 45kw Generator for Highway Department	2016	Emergency Management Director	\$35,000	Flood, Wind, Winter, Debris, Tropical, Extreme Temps, Utility
31 P	#28-2015	Complete Remaining 911 Re-Numbering Projects	2015-2020	Fire Department	\$0	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat
31	#38-2015	Finalize CALEA Certification for Police Department	Jul 2017	Police Dept	\$7,500 over three years	Human, Active Shooter, Mass Casualty, Crash

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7 PRIOR ACTION STATUS

Priority Score (2015)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
35 P	#39-2015	Hold Active School Shooter Training Exercises	Aug 2019, Mar 2020, annually	Police Dept	\$14,000 annually, depending upon scope	Human, Active Shooter, Mass Casualty
36	#45-2015	Upgrade SUV Incident Command Post Equipment	Completed in 2016. Radios finalized in 2019	Police Dept	\$12,500	All – See #63-2015
36	#57-2015	Develop Plowing Policy	Apr 2016	Highway Dept	\$0	Winter, Wind, Tropical, Flood, Debris
36	#58-2015	Implement Cloud IT Plan and Hardware	Apr 2016	Town Administrator	\$35,000 over 3 yrs	Tech, Cyber, Utility
35	#59-2015	Improve WWTF Standard Operating Procedures	Mar 2020	WWTF Superintendent	\$0	Flood, River, Aging Infrastructure, Utility, Haz Mat, Fire, Winter, Wind, Tropical
32	#62-2015	Include Generator Replacement in the Capital Improvements Program	2017-2019	Emergency Management with Planning Board	\$0	Winter, Utility
34 P	#60-2015	Develop IT Security Procedures to Prevent Cyberterrorism	2016	Town Administrator	\$0	Tech, Cyber
34	#63-2015	Update Emergency Operations Plan 2011 and Add Additional Annexes	Apr 2016	Emergency Management	\$15,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat, Mass Casualty
34	#64-2015	Revise Disaster Recovery Plan to Include Meeting FEMA's NDRF Format	Apr 2016	Emergency Management	\$15,000	Mass Casualty, Debris, Wind, Tropical, Winter, Health, Wildfire, Flood, Aging Infrastructure, Haz Mat, Fire, Utility
33	#65-2015	Rewrite the Recovery Plan to Include a Debris Management Section to Allocate Pre-Designated Landfill Locations	Apr 2016	Emergency Management	\$25,000 to \$50,000	Mass Casualty, Debris, Wind, Winter, Health
32 P	#67-2015	Update the 2012 CIP Annually to Add Hazard Mitigation Project	Apr 2020	Planning Board	\$0	Aging Infrastructure
36	#70-2015	Continue to use Central NH Regional Planning Commission to Update the Hazard Mitigation Plan	Sep 2020	Emergency Management	\$6,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter,

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7 PRIOR ACTION STATUS

Priority Score (2015)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
						Public Health, Aging Infrastructure, Utility, Crash, Haz Mat
36	#72-2015	Include a Drainage Infrastructure Vulnerability Assessment as part of the EPA MS4 Stormwater Management Plan (FGA)	Dec 2020	Highway Dept with Planning Board, NHDOT	\$18,000	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
COMPLETED AFTER 2020 PLAN (FROM CHAPTER 8)						
		See Chapter 8 – Add completed Actions				

Source: Allenstown Hazard Mitigation Committee

P = Project Partially Completed – Appears in [2020 Mitigation Action Plan](#)

The pink highlighted rows indicate the **34** total **Deleted** Actions in **Table 45** from previous **Hazard Mitigation Plans** which will not be incorporated into the **2020 Plan** as **Deferred** Actions. Many of the recent Actions were **Deleted** because they were preparedness, response or recovery items and more appropriately belonged in the Town's *Emergency Operations Plan*.

**Table 45
Deleted Mitigation Actions**

Priority Score (2015)	Action Number	Action	Deleted Date	Who is Responsible	Approx \$ Cost	Why Deleted? The Action...
DELETED FROM 2015 PLAN						
	#NA	Investigate Feasibility of Reverse 911	Aug 2013	Emergency Management Director	\$8,000	Duplicates existing efforts
	#NA	Purchase Emergency Management Software Compatible with NIMS/ICS	Aug 2013	Emergency Management Director	Not identified	Was financially infeasible
	#NA	Upgrade and Relocate Highway Department Building	Aug 2013	Highway Department	Not identified	Was financially infeasible
	#NA	Upgrade Culvert and Upgrade Ditch-Lines on Mount Delight Road and Deerfield Road	Aug 2013	Highway Department	Not identified	Was incorporated into another activity (Action)
DELETED FROM 2020 PLAN						
30	#1-2010	Apply for Additional Funding to Purchase 10 More Homes in the Floodplain <i>Suncook River Plan Action</i>	Apr 2020	Emergency Management Director	\$1m+	Current lack of interest by homeowners. No flooding has occurred although the possibility exists for future flooding.
32	#4-2010	Continue to Participate in Capital Area Public Health Network for Public Health Threats	Apr 2020	Emergency Management Director	\$0	Was a preparedness, response or recovery activity
36	#6-2010	Review and Adopt New Public Information Notification Technologies	Apr 2020	Emergency Management Director	\$10,000	Was a preparedness, response or recovery activity
33	#8-2010	Continue to Participate in Available Regional/Statewide Terrorism Exercises	Apr 2020	Police Dept	\$2,000 annually	Was a preparedness, response or recovery activity
33	#9-2010	Upgrade Radiological Detection Equipment and Conduct Training	Apr 2020	Emergency Management	\$10,000	Was a preparedness, response or recovery activity
36	#10-2010	Train Fire Department, Highway and Administrative Staff on Basic ICS and NIMS	Apr 2020	Emergency Management	\$2,000 annually	Was a preparedness, response or recovery activity

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7 PRIOR ACTION STATUS

Priority Score (2015)	Action Number	Action	Deleted Date	Who is Responsible	Approx \$ Cost	Why Deleted? The Action...
34	#19-2015	Plan Strategic Placement of Highway Department Vehicles Prior to Start of Storm Events	Apr 2020	Highway Department	\$0	Was a preparedness, response or recovery activity
32	#23-2015	Continue Highridge Trail Radio Tower Generator Maintenance	Apr 2020	EMD with Merrimack County Sheriff's Dept. (MCSD)	\$425 annually	Was a preparedness, response or recovery activity
34	#24-2015	Field Test Tablet and PolicePad Software	Apr 2020	Police Dept	\$34,000	Was a preparedness, response or recovery activity
34	#26-2015	Develop Redundant Notification Procedures to Address Contingencies	Apr 2020	Emergency Management Director	\$0	Was a preparedness, response or recovery activity
34	#27-2015	Continue to Use Documents to Support the Emergency Management Activities of Highway Department	Apr 2020	Emergency Management Director	\$0	Was a preparedness, response or recovery activity
30	#31-2015	Develop a More Comprehensive DARE Program with the SRO	Apr 2020	Police Dept	\$2,000	Was a preparedness, response or recovery activity
36	#33-2015	Continue Regional MUA Fire Department Training	Apr 2020	Fire Dept	\$5,000 annually	Was a preparedness, response or recovery activity
36	#34-2015	Continue Fire Department Participation in Regional Exercises	Apr 2020	Fire Dept	\$1,000 annually	Was a preparedness, response or recovery activity
36	#35-2015	Continue to Offer Fire Department Personnel Continuing Education	Apr 2020	Fire Dept	\$3,000 annually	Was a preparedness, response or recovery activity
20	#36-2015	Continue with Fire and Rescue Recruitment with Enhancing Explorer Programs	Apr 2020	Fire Dept	\$1,500 annually	Was a preparedness, response or recovery activity
34	#37-2015	Coordinate Emergency Exercises with NH Public Works Mutual Aid and Pembroke Department of Public Works	Apr 2020	Road Agent and Emergency Management Director	\$750 every two years	Was a preparedness, response or recovery activity
35	#46-2015	Complete In-House WWTF Staff Training	Apr 2020	WWTF Superintendent	\$0	Was a preparedness, response or recovery activity
36	#47-2015	Continue to Vary Types of Monthly School Drills	Apr 2020	School Principals	\$0	Was a preparedness, response or recovery activity
36	#48-2015	Practice Annual Evacuation Procedures at Elementary and Middle Schools with Staff	Apr 2020	School Principals	\$0	Was a preparedness, response or recovery activity
36	#49-2015	Ensure All Regional Police Department Mutual Aid Agreements Are Current	Apr 2020	Police Dept	\$0	Was a preparedness, response or recovery activity

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7 PRIOR ACTION STATUS

Priority Score (2015)	Action Number	Action	Deleted Date	Who is Responsible	Approx \$ Cost	Why Deleted? The Action...
31	#50-2015	Require Finance/Admin Section Position Specific ICS Training	Apr 2020	Emergency Management	\$500	Was a preparedness, response or recovery activity
36	#51-2015	Conduct Regional Shelter Exercise	Apr 2020	Emergency Management	\$7,500 bi-annually	Was a preparedness, response or recovery activity
36	#52-2015	Conduct Communications Exercise and EOC/IMT Exercise	Apr 2020	Emergency Management	\$4,500 bi-annually	Was a preparedness, response or recovery activity
36	#53-2015	Continue to Undertake Highway Department Training and Participate in Town Exercises	Apr 2020	Highway Dept	\$750 annually	Was a preparedness, response or recovery activity
33	#55-2015	Re-initiate Community Rating System Process and Obtain Certification <i>Suncook River Plan Action</i>	Apr 2020	Emergency Management Director	\$0	Was no longer necessary or a priority to the Town
36	#56-2015	Review and Update Fire Department SOGs	Apr 2020	Fire Dept	\$0	Was a preparedness, response or recovery activity
35	#68-2015	Update the Allenstown School District Emergency Management Plan	Apr 2020	School Board	\$2,500 annually	Was an activity out of the Town's jurisdiction
35	#69-2015	Update the Allenstown School District 2009 Crisis Management Plan	Apr 2020	School Principals	\$2,500	Was an activity out of the Town's jurisdiction
31	#71-2015	Investigate Regulatory Options of Zoning in Areas of Highest Flooding Sensitivity (FGA)	Apr 2020	Planning Board	\$50,000 to \$100,000	Cost is infeasible, project unrealistic
DELETED FROM 2020 PLAN (FROM CHAPTER 8)						
		See Chapter 8 – Add deleted Actions				

Source: Allenstown Hazard Mitigation Committee

The tan highlighted rows in **Table 46** indicate the **22 Deferred** mitigation Actions from the **2015 Plan** which also appear in the forthcoming **2020 Plan's Mitigation Action Plan**. Many **Action** titles were revised to update the Action and to reflect the new focus on mitigation although the principle for each remains the same. The **Approximate Cost** may rise. They will all be reevaluated to accommodate **2020** needs in later sections. Several **Deferred** Actions were partially completed (**P**) and will be finished within the **5-year** timeframe of the **2020 Plan**.

Table 46
Deferred Mitigation Actions

Priority Score (2015)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
30	#1-2010	Apply for Additional Funding to Purchase 10 More Homes in the Floodplain <i>Suncook River Plan Action</i>	Apr 2020	Emergency Management	>\$1m	No flooding has occurred since 2012 but the possibility exists for future flooding. Current lack of interest by homeowners	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Mass Casualty
28	#2-2010	Work with NHDES and Epsom to Mitigate Allenstown Flood Hazards on the Suncook River <i>Suncook River Plan Action</i>	Apr 2020	Emergency Management	>\$100,000	More staff time was required for completion, Town lacked funding capability, no flooding since last Plan	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam
34	#3-2010	Continue to Perform Drive-by Tree Examinations and Notification of Utility Companies	Apr 2020	Highway Department	\$0	Action needs to be repeated for effectiveness	Wind, Winter, Tropical, Utility, Lightning, Fire, Debris
32	#5-2010	Continue to Offer Fire Prevention and Public Education Programs	Apr 2020	Fire Department	\$1,000 annually	Action needs to be repeated for effectiveness	Lightning, Wildfire, Drought, Hazardous Materials, Fire
36	#7-2010	Participate in National Flood Insurance (NFIP) Training <i>Suncook River Plan Action</i>	Apr 2020	Emergency Management	\$0	Action needs to be repeated for effectiveness	Flood, Scouring & Erosion, Wind, Winter, Tropical, River, Ice Jam
36	#11-2010	Request Bear Brook State Park Management Plan Update from NH DRED and Integrate into EOP	Apr 2020	Emergency Management	\$0	Plan is currently underway in 2020 and should be completed after the Committee completes its work	Drought, Wind, Winter, Tropical, Utility, Lightning, Wildfire, Debris, Human

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7 PRIOR ACTION STATUS

Priority Score (2015)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
33 P	#13-2010	Update Wetlands Ordinance to Reflect New NH DES Standards	2012/2020	Planning Board	\$5,000	Action needs to be repeated for effectiveness. Updated in 2017, to be updated with MS-4 by 2021	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
27 P	#14-2015	Establish Culvert Replacement Program <i>Suncook River Plan Action</i>	Apr 2020	Highway Department	\$250,000	More staff time was required for completion, Town lacked funding capability (partially completed)	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River Ice Jam, Aging Infrastructure
28	#16-2015	Upgrade Mount Delight Bridge Culvert over Pease Brook <i>Suncook River Plan Action</i>	Apr 2020	Highway Department	\$190,000	More staff time was required for completion, Town lacked funding capability	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River Ice Jam, Aging Infrastructure
32	#18-2015	Add New Cisterns in Rural Areas without Water Supply for Fire Protection	Apr 2020	Fire Department	\$150,000	More staff time was required for completion, Town lacked funding capability	Lightning, Wildfire, Drought, Hazardous Materials, Fire
35	#20-2015	Engage in Bank Armoring of Town Owned Mass-Failure Properties (FGA)	Apr 2020	Town Administration	\$10,000 - \$25,000	Action was a lower priority than other Town activities	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam
34 P	#22-2015	Work with NOAA and USGS to Upgrade Route 28 Stream Gage to Provide Water Level Predictions <i>Suncook River Plan Action</i>	Apr 2020	Emergency Management	\$3,000 annually	Action needs to be repeated for effectiveness	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River
31 P	#28-2015	Complete Remaining 911 Re-Numbering Projects	Apr 2020	Fire Department	\$0	Action needs to be repeated for effectiveness	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure,

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7 PRIOR ACTION STATUS

Priority Score (2015)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
							Utility, Crash, Haz Mat
36	#29-2015	Certify Highway Department Staff to Become Certified NHDES Culvert Maintainer (FGA)	Apr 2020	Highway Department	\$750	More staff time was required for completion	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure
34	#30-2015	Review and Improve Community Outreach Forums and Safety Programs [ARC, CAPNH]	Apr 2020	Fire Department	\$500 annually	Action was modified and incorporated into another Action	Human, Mass Casualty, Utility, Extreme Temps, Secondary to Natural Haz
36	#32-2015	Provide Landowner Education on Erosion Mitigation (FGA)	Apr 2020	Emergency Management	\$1,500 per kiosk	Town lacked funding capability, Action was a lower priority than other Town activities	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical
35 P	#39-2015	Hold Active School Shooter Training Exercises	Apr 2020	Police Dept	\$14,000 annually, depending upon scope	Action needs to be repeated for effectiveness	Human, Active Shooter, Mass Casualty
35	#54-2015	Update the Zoning Ordinance to Comply with NFIP Requirements <i>Suncook River Plan Action</i>	Apr 2020	Planning Board	\$0	Town is awaiting new federal guidelines, Action needs to be repeated for effectiveness	Flood, Scouring & Erosion, Wind, Winter, Tropical, River Ice Jam
34 P	#60-2015	Develop IT Security Procedures to Prevent Cyberterrorism	Apr 2020	Town Administrator	\$0	Action needs to be repeated for effectiveness (completed 2016)	Tech, Cyber
35	#61-2015	Develop Spill and Chemical Response Plan for WWTP	Apr 2020	WWTF Superintendent	\$0	Action needs to be repeated for effectiveness (original 1990, updated Mar 2013)	Earthquake, Haz Mat, River, Health, Water Quality
36	#66-2015	Update the 2003 Master Plan with Current Data	Apr 2020	Planning Board	\$16,000	Action needs to be repeated for effectiveness	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical,

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7 PRIOR ACTION STATUS

Priority Score (2015)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
							Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat
32 P	#67-2015	Update the 2012 CIP Annually to Add Hazard Mitigation Project	Apr 2020	Planning Board	\$0	Town lacked staff or volunteer capability and funding capability	Aging Infrastructure

Source: Allenstown Hazard Mitigation Committee

P = Project Partially Completed – Appears in [2020 Mitigation Action Plan](#)

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8 MITIGATION ACTION PLAN

The Chapter provides a summary discussion of the Actions the community can consider completing to help mitigate the effects of hazard events.

The **Mitigation Action Plan** is the culmination of the work of the previous Assessments, inventories, and evaluations from the previous Chapters. Actions to help Allenstown mitigate the damages caused by disasters have been developed and prioritized by Hazard Mitigation Committee consensus in consideration of both existing and new development.

SOURCES OF ACTIONS

After determining the status of the existing Actions, **New** Actions can be determined. **New** Actions were evaluated by Hazard Mitigation Committee the using the **Problem Statements** determined during discussion of critical facility and community facility sites' potential vulnerability to hazards in the **Critical Facility and Community Vulnerability Assessment**. Many of these problems were further evaluated and developed into **New** mitigation Actions.

The **Capability Assessment** yielded a wealth of information from the **Future Improvements** of the plans, programs, ordinances, policies, agreements, technical skills, financial resources, and other resources the Town Departments, School District, and Stakeholders had available. These activities are important to the community. They assist Departments with the procedures, training, regional coordination, mutual aid, planning and purchases needed to perform their duties effectively. These activities in turn increase the capability for mitigating hazard events. For the **2020 Plan**, most of the **Capability Assessment's Future Improvements** activities were not utilized as Actions since they are more appropriate for the Town's **Emergency Operations Plan** recommendations.

Other community ideas were introduced to or by the Hazard Mitigation Committee as a result of Department, Board, Commission or Town discussions. Where appropriate, supported activities were introduced as New mitigation Actions.

Mitigation Actions developed emphasize both new and existing buildings and infrastructure to better protect populations of Allenstown.

Several uncompleted **Deferred** (2015) Allenstown mitigation Actions have been carried forward into the **2020 Plan** with the updates to the evaluation, cost, prioritization, etc.

ACTION MATRIX

A listing of **22 Deferred** mitigation Actions from **2015** and **25 New** mitigation Actions from **2020**, important to the Town of Allenstown, was developed for evaluation. Each Action identifies at least one **Hazard Mitigated** which correlates to **3 GOALS AND OBJECTIVES**, describing how it can mitigate these identified natural hazard objectives. A short **Description and Evaluation** is provided and the **Affected Location** is listed to ensure easier understanding and reassessment of the Actions in the future during implementation.

The Actions are numbered for easier tracking over the years with this practice beginning in this **2020 Plan**. The **2020** Actions begin where the prior Actions left off, **#73- 2020** through **#97- 2020**. Over time, the Actions can be tracked to see which have been **Deferred** and to organize the **Completed** or **Deleted** Actions. For those with funding needs, the ability to reference an Action within the Capital Improvements Program or in a Warrant Article can alleviate confusion and further support the mitigation Actions.

Each Action is sorted into one of these four mitigation Action categories, although it might identify with several:

- Local Planning and Regulation**
- Structure and Infrastructure Projects**
- Natural Systems Protection**
- Education and Awareness**

Within the **Mitigation Action Plan**, the **Deferred 2015** Actions and the **New 2020** Actions are evaluated by the relative ease of completion using a numeric **Ranking Score** generated by the enhanced STAPLEE prioritization, by the **Action Timeframe** by which the Hazard Mitigation Committee would like to see the Action implemented, and by a basic **Cost to Benefit Analysis** as contained within the STAPLEE.

The **Responsible Department** is indicated for each Action as the party who will ensure the Action gets completed. An **Approximate Cost** is provided, although no definitive cost estimates or quotes have been obtained now. Ways the Action can be **Funded** is identified and offered as an avenue to explore during implementation. The purpose is to offer an idea of how much funding is provided for each Action and how it may be paid for.

Allenstown's Mitigation Action Plan 2020

At the meetings, the Hazard Mitigation Committee identified by consensus these mitigation Actions from the various **Assessments** and evaluations conducted. The process for Action development has been described in previous Chapters and sections. Combined with the visual *Maps 1-4* of the **Hazard Mitigation Plan 2020**, the **Mitigation Action Plan** shown in **Table 47 Planning and Regulatory**; **Table 48 Structure and Infrastructure**; **Table 49 Natural Systems Protection**; and **Table 50 Education and Outreach** should be able to guide future hazard mitigation efforts in the Town through an annual implementation process.

Twenty-two (**22**) **Deferred** Actions from **2015** and **25 New** Actions from **2020** combine to develop the **47** Actions of the **2020 Mitigation Action Plan**. The **Deferred** Actions' cells are highlighted in tan.

Table 47
Local Planning and Regulation Actions

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
#11-2010	Request Bear Brook State Park Management Plan Update from NH DRED and Integrate into EOP to Reduce the Impact of Wildfire, Lightning, Tree Debris in the Park	Short Term 1-2 Years	63	Emergency Management	\$0	Plan is currently underway in 2020 by a Committee which includes the Town. State agencies including NH DNCR are undertaking this effort.	Drought, Wind, Winter, Tropical, Utility, Lightning, Wildfire, Debris, Human	Bear Brook State Park, Deerfield Road	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A
#13-2010	Update Wetlands Ordinance to Reflect New NH DES Standards to Reduce Risk of Erosion and Flooding	Short Term 1-2 Years	69	Planning Board	\$5,000	Updated 2017, working on MS-4 changes presently. Finish MS-4 by 2021. NHDES culvert replacement standards and requirements have changed. The Wetlands Ordinance needs to be revised accordingly.	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure	Wetlands	Cost is for consultant to update the ordinance.	Planning Board Operating Budget
#28-2015	Number New Properties in Compliance with 911 Ordinance to Reduce the Risk of Injury from All Hazards	Short Term 1-2 Years then Ongoing	66	Fire Department (State) / Code Enforcement (Town Ordinance)	\$0	New construction only. Completion will ensure the entire town is in compliance with the standards and the ordinance. Renumbering may need to occur, but new developments will need to have new numbers.	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure,	New Developments	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A

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8 MITIGATION ACTION PLAN

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
							Utility, Crash, Haz Mat			
#54-2015	Update the Zoning Ordinance to Comply with NFIP Requirements to Reduce the Impact of Flood & River Hazards Suncook River Plan Action	Short Term 1-2 Years then Ongoing	66	Planning Board	\$0	The Zoning Ordinance needs to be updated as new requirements to the National Flood Insurance Program are necessary for retention of NFIP participation. The Floodplain Ordinance protects life and property by regulating distance of structures to flood hazard areas, regulating elevation, clarifying definitions, regulating new structures and encroachments, stating duties of the Code Enforcement Officer, etc. In 2010, the Town adopted the recommended updates to the ordinance. The existing ordinance is amended with federal updates on a recurring basis. Regular activity whenever updates are required by FEMA	Flood, Scouring & Erosion, Wind, Winter, Tropical, River Ice Jam	Floodplains	Cost is \$0 due to in-kind staff and/or volunteer labor, and language is provided by the NH Office of Energy and Planning.	N/A
#60-2015	Develop IT Security Procedures to Reduce the Risk of Cyberattack	Short Term 1-2 Years then Ongoing	66	Town Administrator	\$0	Development of town wide IT security procedures will lessen the frequency and magnitude of cyber terrorist acts. Town has an update policy and a consultant. Multiple Departments need access to cloud and the IT consultant sets this up.	Tech, Cyber	Town Facility Computer Systems	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties	N/A
#61-2015	Develop Spill and Chemical Response Plan for Allenstown Wastewater Treatment Facility to Reduce the Long Term Risk Haz Mat	Short Term 1-2 Years	69	Allenstown Wastewater	\$0	Original in 1990, updated Mar 2013. Required for MS4 compliance and EPA regulations that pertain to the Wastewater Treatment Facility (WWTF).	Earthquake, Haz Mat, River, Health, Water Quality	Downtown, Merrimack River	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties	N/A

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8 MITIGATION ACTION PLAN

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Incidents and Water Quality Issues									
#66-2015	Update the 2016 Master Plan with Current 2020 Census Data to Provide the Basis for Sensible Natural Hazard Regulation and Ordinances	<u>Long Term</u> 4-5 Years	60	Planning Board	\$16,000	The Master Plan would have provisions to limit the impact of disasters if it were updated. Several Chapters have been in the process of revision. The PB would like to begin updating around 2023.	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat	Entire Town	Cost is for consultant services through Central NH Regional Planning Commission to re-write the plan.	Grant through CNHRPC, Planning Board Operating Budget
#67-2015	Update the 2021-2026 CIP Annually to Add Hazard Mitigation Projects to Ensure Funding for Infrastructure Projects to Protect the Town from Natural Hazards	<u>Short Term</u> 1-2 Years then Ongoing	73	Planning Board	\$0	Update the CIP yearly to incorporate the year's priority hazard mitigation projects or capital reserve funds deposits. Regular activity, annual update planned. Haz Materials Cleanup CRF has not been drawn from for several years (>\$7,000), could transfer into a different CRF such as Fire Dept Equipment CRF, Emergency Management Response CRF or Road Reconstruction CRF. (Regional Haz Mat Team is now available, FD donated materials).	Aging Infrastructure	Entire Town	Cost is \$0 for in-kind staff and/or volunteer labor. Labor conducted during normal duties	N/A
#73-2020	Revise and Implement Protocol for a Staff and	<u>Short Term</u> 1-2 Years	66	Town Administrat or	\$0	Widespread implementation of an existing written Cyber Security Policy protocol for an annual	Cyber	Town Facility	Cost is \$0 for in-kind staff and/or	N/A

Town of Allenstown, NH Hazard Mitigation Plan Update 2020

8 MITIGATION ACTION PLAN

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Volunteer Annual Password Change for Access to the Town Cloud Intranet System to Reduce the Risk of Cyberattack					(now quarterly) password changing is necessary for all staff and volunteers. A cyber attack would significantly impair Town business in any Department. Town has an intranet. Town records are stored in the cloud. Have 3 daily redundant, cycling systems used for backup. Regular virus checks. Quarterly may be too aggressive for people to remember.		Computer Systems	volunteer labor conducted during normal duties	
#74-2020	Require Developers to Upgrade Private Roads and Wood Roads to a Class V Town Road Standards When New Developments Are Approved to Reduce Long-Term Winter, Wind, Debris, Wildfire Risks to Resident Safety	Short Term 1-2 Years then Ongoing	70	Planning Board with Board of Selectmen and Building Inspector	\$0	Improvements to the existing Class VI road policy. Future development on a large backland lot would require a new or upgraded road to Town standards to access the lots, requiring both Planning Board and Board of Selectmen approval. Building and other permits required too. Wetlands and easements may impede sale and building of backlots. The owner or developer may not know or disclose the situation. Develop as part of the PB application process as a condition of approval.	Lightning, Wildfire, Inland Flooding, Wind/Tropical, Winter, Aging Infrastructure, Utility, Crash, Haz Mat	New Developments	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties	N/A
#75-2020	Revise the Subdivision Regulations to Stipulate Phasing of Large Developments Over a Number of Years to Reduce Long Term Risk of Treefall,	Short Term 1-2 Years	70	Planning Board	\$0	Should multiple large lots or legacy lots become developed within a short period of time, they could overwhelm the Town services in the Main Street area (water & sewer) or for the rural section of Town, schools, fire, police, rescue, highway, services	Lightning, Wildfire, Inland Flooding, Wind/Tropical, Winter, Aging Infrastructure,	New Developments	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties	N/A

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Wildfire, Service Overload					would be impacted. Impact fees for all Town services are being considered through the CIP. Sewer has a \$4,500 connection fee for a new user (3 bedroom home), and developer would have to pay for connection to the new subdivision. PB will evaluate development vs capacity of services	Utility, Crash, Haz Mat			
#76-2020	Recommend Fire Suppression Systems or Cisterns in New Single Family Homes and Developments to Reduce the Impact of Lightning, Wildfire and Fire	<u>Long Term</u> 4-5 Years	70	Planning Board/ Building Permit Process	\$0	Fire suppression systems can differ depending on where the home is located or the type of home. Options could include sprinkler systems, cisterns, fire hydrants, dry hydrant, fire pond, etc. The cost may be prohibitive when added to homes and neighborhoods.	Drought, Fire, Wildfire, Lightning	New Developments	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties	N/A
#77-2020	Update the Excavation and Reclamation Regulations to Assist with the Annual Review and Permitting of Operations and Blasting and Ensure the Regulations Contain Current Standards to Reduce the Risk of Landslide	<u>Medium Term</u> 3-4 Years	70	Planning Board	\$1,500	During the heavy, concussive blasting at Allenstown Aggregate felt by downtown residents, the ledge can slide down resulting in a landslide. Much care is taken. After each blast, the hill will be loosening overall and affecting the integrity of the existing land around. Blasting is performed under controlled situations, about once every other month. Can only blast during certain hours and must call abutters day before and ½ hour before. Notifies Town, which notifies all Depts. Excavation Regulations and PB procedures like a site walk in place before annual	Earthquake, Landslide, Air & Water Quality	Excavation Areas	Cost is for consultant	Planning Board Budget

Town of Allenstown, NH Hazard Mitigation Plan Update 2020

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
						renewal. Abutters would complain, have not to date.				
#78-2020	Develop Regulations Relating to Spill Response Control Plans for Businesses into the Site Plan Review Regulations to Reduce the Long Term Risk Haz Mat Incidents and Water Quality Issues	<u>Medium Term</u> 3-4 Years	70	Planning Board	\$1,000	A severe earthquake can cause any of the haz mat businesses to release their contaminants into the stormwater system or groundwater table.	Earthquake, Haz Mat, River, Health, Water Quality	New and Improved Businesses	Cost is for consultant	Planning Board Budget
#79-2020	Modify the Subdivision Regulations and Site Plan Review Regulations to Add Requirements for Secondary Egress to Certain High Density or Geographically Isolated Developments to Reduce Long-Term Winter, Wind, Debris, Wildfire Risks to Resident Safety	<u>Medium Term</u> 3-4 Years	70	Planning Board	\$0	Secondary egress is being required for the incoming site plan assisted living facility on NH 28 / Chester Turnpike for evacuation. (Business across the street, pharmaceutical, records storage, or vehicle crash.) Secondary access is being required for this facility. Not required from PB, usually from Fire or Police Dept.	Lightning, Wildfire, Inland Flooding, Wind/Tropical, Winter, Aging Infrastructure, Utility, Crash, Haz Mat	New Development	Absorption into current consultant fees	Planning Board Budget

Source: Allenstown Hazard Mitigation Committee

Table 48
Structure and Infrastructure Projects

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
#14-2015	Establish Culvert Replacement Program to Reduce the Impact of Flood Conditions <i>Suncook River Plan Action</i>	Short Term 1-2 Years then Ongoing	68	Highway Department	\$250,000	Road washouts and flooding conditions would strand residents in some locations. Ineffective culverts to upgrade include those at: 28 Dodge Rd, 64 Chester Turnpike, all of Albin Ave under drainage and 3 catch basins, 105 Wing Rd, 186 Deerfield Road. Get the program operational to be self-sustaining until it is able to be updated annually. A BCA is needed for funding > 1.0. Mostly a reactive program until a need occurs.	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure	Class V Town Roads including 28 Dodge Rd, 64 Chester Turnpike, Albin Ave, 105 Wing Rd, 186 Deerfield Road (State)	Cost is roughly estimated at \$50,000 for each culvert (5), which include materials, equipment rentals, potential engineering and permitting. Regular labor for installation is provided in-kind by the Highway Department.	Hazard Mitigation Grants Program (HMGP), Highway Operating Budget, Pre-Disaster Mitigation (PDM)
#16-2015	Upgrade Mount Delight Bridge Culvert over Pease Brook to Reduce the Impact of Flood Conditions <i>Suncook River Plan Action</i>	Long Term 4-5 Years	62	Highway Department	\$300,000	The existing one 3' and one 4' culvert side-by-side are not adequate for water pass through and need to be replaced. A box culvert is now needed. [Voters voted the \$152,000 culvert grant down in 2007, a scope and quote provided at the time by Advanced Excavation. By 2021, a replacement culvert is twice the annual highway budget. Funding is needed from an outside source.	Flood, Scouring & Erosion, Wind, Debris, Tropical, River Ice Jam, Aging Infrastructure	Mount Delight Road	Cost includes a precast box culvert with wing walls, 80' of new guardrails, raising the profile of the roadway 18" for 200-250 feet, and labor and equipment by a contractor. Permitting fees and possible engineering	Hazard Mitigation Grants Program (HMGP), Highway Operating Budget, Pre-Disaster Mitigation (PDM)

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
									would be extra cost. Grant funding is necessary.	
#18-2015	Encourage the Placement of Cisterns in Developed Rural Areas without Water Supply for Fire Protection	Medium Term 3-4 Years	65	Fire Department	\$0	New cisterns should be added to the rural areas of Wing Road (1.5 miles away from cistern), Old Town Co-op (manufactured housing), and Catamount Hill Co-op (manufactured housing) - the Town should approach about adding a new water system. There are no hydrants in these populated areas, no adequate water supply for fire suppression, no nearby streams or brooks, and fire trucks have to tank in their own water to fight fires in these areas. (In newer neighborhoods, cisterns have been placed). Newer cistern neighborhoods have better fire suppression success.	Lightning, Wildfire, Drought, Hazardous Materials, Fire	Rural Areas	Cost is to the Town is \$0 for volunteer and staff work. The cost would be borne by private property owners for tanks, site work, purchase of property, permits, Cost is also for work done by a contractor for each of the three cisterns at \$50,000 each.	PDM grant funding, USDA Rural Development grant funding
#22-2015	Work with NOAA and USGS to Upgrade Route 28 Stream Gage to Provide Water Level Predictions to Reduce the Risk of Injury During Flooding Events <i>Suncook River Plan Action</i>	Short Term 1-2 Years	74	Emergency Management	\$3,000 annually	Gage was upgraded to (auto) wireless on NH 28 around 2015. Had a 6-year grant which expires in 2021. Town will pay itself \$3,000 annually. The ability of the River gage in Allenstown to predict water levels would provide early warning and emergency planning to reduce the risk of injury, death and property damage. Did meet with them in July 2019.	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River	NH 28 over Suncook River	Cost is for the monitoring costs of the USGS.	Emergency Management Line Item Budget

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
#80-2020	Pursue Secondary Egress Options to the Bailey Avenue Water Works Tank, Including a Locked Emergency Gate on US 3 to Ensure Access During Winter, Fire or Wind Events	Short Term 1-2 Years	41	Board of Selectmen with Police Department and Pembroke Water Works	<\$100	The Pembroke Water Works tank in Hooksett is accessible only via Bailey Avenue (enters onto US 3). If the tank had an immediate release, there would be a significant amount of water coming down onto Bailey Avenue where a large volume of traffic travels and would impede the only access to the tank itself. There is nothing the Town could do if the tank breaks. The water will find its way to Iris Pond. Although catastrophic failure is unlikely, if the tank needs to be painted inside, the water must be released. Water tower maintenance program, tank lid should have a lock, flooding could be an issue based on urgency of draining the tank.	Lightning, Wildfire, Inland Flooding, Wind/Tropical, Winter, Aging Infrastructure, Utility	Bailey Avenue	There is a path that gets partially up the hill. It is behind a locked gate belonging to US Cellular. A know box or similar situation would all that would be needed.	Police Dept Budget
#81-2020	Inventory, Evaluate and Replace Any 48" Inverted Rusted, Blocked Culverts in Town to Reduce the Impact of Flood Conditions	Short Term 1-2 Years	68	Highway Department	\$0	All permanent bridges in Town may survive being underwater in a flood but the road and soil could be eroded. Should inverted metal culverts on NH 28 or on any road could be bent from water force, soil erosion and infrastructure damage might occur. Only a few may be the Town's. Those found to be the State's should be encouraged to be inspected regularly.	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure	Entire Town	No estimate is yet available for replacement, but the Cost for inventory and evaluation will be in-kind staff and volunteer labor costs. Any replacement will require excavator rentals and other replacement	N/A

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
									rentals as well as materials. At this time, the number and type are unknown.	
#82-2020	Install Dry Hydrants to Create Easier Access to Water Sources to Provide Water Supply for Fire Suppression	Short Term 1-2 Years	67	Fire Department , with Highway Dept assistance	\$6,000	Optimal location is at the north end of Riverside Drive at the pond, off of NH 28. Clear some of the brush away for apparatus parking. Would enable fill up for Pine Acres development fires also. If this location does not work, a secondary location could be identify. Depending on location, an easement may be needed which would increase the expense.	Lightning, Wildfire, Drought, Hazardous Materials, Fire	Riverside Drive or Alternate Location beside River/Large Brook	Cost is for 1 dry hydrant and one PVC pipe.	Fire Department Budget

Source: Allenstown Hazard Mitigation Committee

Table 49
Natural Systems Protection Actions

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
#1- 2010	Apply for Additional Funding to Voluntarily Purchase 10 More Homes in the Floodplain to Reduce the Long Term Risk of Damages and Increase Flood Capacity <i>Suncook River Plan Action</i>	<u>Long Term</u> 4-5 Years	49	Emergency Management	About \$300,000 for all 10 homes	No flooding has occurred but the possibility exists for future flooding. Current lack of interest by homeowners. Voluntary purchase of flood-prone homes removes people from the floodplain, which gives a 100% guarantee to eliminate risk to property and lives. Five phases have already been completed (32 homes acquired) and two more phases are hoped for to purchase the remaining 10 homes. No flooding has occurred since the last (2015) Plan.	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Mass Casualty	Specific Floodplain Homes on Riverside Drive, Fanny Drive, Albin Avenue	Cost would be for the assessed valuation of the 10 previously identified homes (\$100k est. each). Additional cost for each home would include around \$16,000 demolition (\$160,000), legal \$1,600, (\$16,000), and \$2,800 administration (\$28,000). 75% would be covered by the FMA program.	Flood Mitigation Assistance (FMA) 75/25 grant funding
#2- 2010	Work with NHDES on Suncook River from Downstream to Upstream to Mitigate Allenstown Flood Hazards <i>Suncook River Plan Action</i>	<u>Medium Term</u> 3-4 Years	58	Emergency Management	>\$100,000	No flooding since the last (2015) Plan. Eroding banks in the area of Map 5A's 26ER could cause debris flow and inundation flooding as well as channelized flow. Potential problem areas include 29 ER at Swiftwater Condo where bank armoring could be pursued. In this location it would be possible to physically bring riprap and material to the bank easily. Any program would necessitate starting downstream	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam	Floodplains, Suncook River	Cost is unknown as the potential projects are not yet determined but are assumed to be high. PDM grants could fund the different river projects identified.	Pre-Disaster Mitigation (PDM) grant funding

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8 MITIGATION ACTION PLAN

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
						and working upstream to reduce erosion potential. Erosion on oxbow curves are of particular concern. The projects might prevent the further erosion of land in Allenstown. The sediment from Epsom fills the Suncook River channel in Allenstown, which makes the flooding more dramatic here. Project components could include studies, permits, equipment, purchase of property, bank armoring, additional flood storage capacity, etc. The NH DES and NH Geological Survey would be consulted to ensure proper handling of floodplain projects, etc.				
#3- 2010	Perform Drive-by Tree Examinations and Notification of Utility Companies to Reduce the Risk of Tree Fall and Utility Failure During Storms	Short Term 1-2 Years then Ongoing	66	Highway Department	\$0	PSNH, Unitol, and NH Cooperative are Allenstown's electricity providers. While driving the roads, the Highway Department informs them when trees are in need of trimming to be proactive in avoiding as many power disruptions as possible. The companies send Asplundh to cut down the dangerous trees. Deferred from 2010 because this is an Action to be repeated at regular intervals in order to be effective	Wind, Winter, Tropical, Utility, Lightning, Fire, Debris	Entire Town	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A
#20- 2015	Consult with NH Geological Survey to Evaluate Bank Armoring of Town	Long Term 4-5 Years	47	Town Administration	\$0	No flooding has occurred but the possibility exists for future flooding. Assess the areas requiring support, talk with	Flood, Scouring & Erosion, Wind, Winter,	Suncook River	Cost is for consulting. If issues are found and cold	Land Use Change Tax Fund

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8 MITIGATION ACTION PLAN

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Owned Mass-Failure Properties (FGA) to Plan for Appropriate Mitigation Measures					officials to assess Town owned land. Purpose is to use riprap to prevent more mass failure. Task performed off season by HD, placing the riprap with rented machinery. Several places of Mass Failure were mapped, consult w/ NHGS. Complete in phases, different sections each year until completed. Conservation Commission, Highway Department, NH Geological Survey	Debris, Tropical, River, Ice Jam		be addressed, will be added to future mitigation action plans.	
#29-2015	Certify Highway Department Staff to Become Certified NHDES Culvert Maintainer (FGA) to Reduce the Risk of Major Flooding Damage in Certain Culvert Locations	Short Term 1-2 Years	70	Highway Department	\$0	The NH DES has a program by which municipal HD members can train to become Certified Culvert Maintainers. The advantage is the ability to allow small upsizing of culverts without a permit.	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical, River, Ice Jam, Aging Infrastructure	Class V Town Roads	Cost is free for certification for at least 1 HD member.	Highway Dept Operating Budget (if a fee is necessary)
#83-2020	Investigate How to Obtain Access to Another Community's HHW Collection or Investigate Holding the Town's Own HHW Collection to Reduce the Long Term Risk of Haz Mat Spills and Water Quality Degradation	Medium Term 3-4 Years	56	Transfer Station/ Solid Waste Department	\$5,000	There has not been an annual Household Hazardous Waste Collection Day (check with Highway Dept) since several years 6-7 years since last HHW day. Town went to Raymond one year. This is a high-cost project.	Haz Mat, Health, River, Water Quality	Entire Town	Cost is for holding one HHW collection day; since no preliminary investigation on costs and feasibility have been performed, this estimated figure may be far off the actual cost.	[NHDES Solid Waste may have funding to help Allenstown get started since Town hasn't held one for years.]

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
#84-2020	Obtain, Review and Archive NHDES Private dam Emergency Action Plans (EAPs) and Dam Operational Plans (DOPs) to Reduce the Risk of Inadequate Infrastructure	Short Term 1-2 Years	74	Emergency Management	\$0	Most plans are completed by engineers. Should the Pembroke Dam breach or fail, the canal should take most of the water, but the Emerson Mill buildings might be flooded. This section is in Pembroke. The Suncook River can hold a significant amount of water which could flood part of the downtown. It is not thought to be able to overflow. Perfect storm: Pembroke Dam breach and ice hung up on it, and an ice jam during the winter could hit the Main Street bridge. If this occurred, at the same time could be catastrophic to the Town. Webster Mill Dam holds in Iris Pond, so if it were breached, it could have the potential for damaging the Main Street area. Refer to the 2015 Haz Mit Fluvial Erosion Hazard (FEH) Map series.	Flood, Scouring & Erosion, Debris, Tropical, River, Ice Jam, Aging Infrastructure	Dams, mostly on Suncook River	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A
#85-2020	Evaluate Cemeteries and Establish a Program for Filling in Subsiding Older Graves to Reduce Erosion and Subsidence	Medium Term 3-4 Years	71	Highway Department	\$0	Old Kenison East and West Cemeteries have about 1 dozen graves sunken 2-3 feet that should be filled in. Burial materials and remains can be exposed during severe weather and as land subsides over time. Cemetery maintenance is limited to mowing usually. Some other old cemeteries may be experiencing similar issues. Town has a Cemetery Society	Flood, Erosion, Subsidence	Old Kenison East and West Cemeteries	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A
#86-2020	Establish an Inspection and	Short Term 1-2 Years	64	Highway Department	\$0	Trees can fall down onto gravestones and break them	Wind, Tropical,	Town Cemeteries	Cost is \$0 for in-kind staff	N/A

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Cutting Program of Hazardous Trees at Town Cemeteries to Reduce the Number of Limbs Falling on Headstones (Historical Site Destruction)					during bad ice storms or wind & rain storms. Those stones set near the edge of the tree line are particularly vulnerable.	Winter, Utility, Debris		and/or volunteer labor conducted during normal duties to fulfill this Action.	
#87-2020	Encourage the State to Purchase and Install Public Access Webcams on the Oak Hill Fire Tower for Fire Monitoring in BBSP to Reduce the Impact of Lightning and Wildfire	Short Term 1-2 Years then Ongoing	52	Fire Department	\$0	Wildfire, lightning, and windstorm, ice storm or severe earthquake could be detrimental to the historical sites of Allenstown, particularly in Bear Brook State Park. Fire tower staffing – Kearsarge is operational but not staffed until high fire danger. Oak Hill sometimes staffed as well during high fire days. State has been using air patrols. Drones only used during an incident, not for fire danger. If the State could purchase public access webcams, citizens would be available to monitor the cameras. Also encourage the state to cut back the tree line around the towers.	Lightning, Wildfire, Drought, Hazardous Materials, Fire	Entire Town	Cost is \$0 to the Town for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A
#88-2020	Evaluate Iris Pond Ice Thickness to Estimate Potential Ice Floes/ Ice Jam Conditions	Short Term 1-2 Years	74	Emergency Management	\$0	Ice thickness can give an idea on the potential issues related to an ice jam at the southern end of the Pond at the dam. May not be an issue if it does not get too thick, but the evaluation should be done. Debris can be carried and if ice is combined with floodwaters, the water can be backed up along the bank to the	Flood, Winter, Debris, River, Ice Jam, Aging Infrastructure	Iris Pond, Suncook River	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
						bridge. An Ice core from ice fishing on the pond can be provided for the measurement.				
#89-2020	Consider Retaining Tax Acquired Properties in Flood-prone Areas to Provide Additional Flood Storage Capacity During Floods	Short Term 1-2 Years	60	Town Administration	\$0	Additional floodplain capacity along the Suncook River and Merrimack River could be found through tax deeded parcels. The Town retains the properties 3 years after they are tax deeded. No extra costs are involved to keep the properties, and the Town can ensure they are not sold if they are in flood-prone areas.	Flood, Scouring & Erosion, Winter, River, Ice Jam	Floodplains, Suncook River	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A
#90-2020	Undertake Possible Brownfields Investigation on the Railroad Property South of Ferry Street for Rail Trail Use to Reduce the Risk of Injury from Hazardous Materials	Short Term 1-2 Years	58	Town Administration	\$3,000	Properties in process of purchase. Determine whether there are brownfields onsite through Phase I investigation. May have coal or creosote railroad ties from the trains that people could take	Haz Mat, Health, River, Water Quality	Ferry Street Area	Cost is for a consultant to prepare a Phase 1 brownfields assessment.	Leftover Brownfields funding from CNHRPC or from Allenstown Recreational Reserve Fund CRF

Source: Allenstown Hazard Mitigation Committee

Table 50
Education and Awareness Actions

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
#5- 2010	Continue to Offer Fire Prevention and Public Education Programs to Reduce the Risk of Fire and Wildfire	Short Term 1-2 Years then Ongoing	73	Fire Department	\$1,000 annually	Fire Prevention and Public Education are offered through the schools and Open Houses. The Open Houses also provide Fire and EMS education. Deferred from 2010 because this is an Action to be repeated at regular intervals in order to be effective. Regular annual public programs are in place	Lightning, Wildfire, Drought, Hazardous Materials, Fire	Entire Town	Cost is for materials and salaries for personnel participating in education programs.	Fire Department Operating Budget
#7- 2010	Participate in National Flood Insurance (NFIP) Training to Increase the Understanding and Application of Floodplain Regulation <i>Suncook River Plan Action</i>	Short Term 1-2 Years then Ongoing	71	Emergency Management	\$0	In order for Planning Board members, Zoning Board of Adjustment members, Town Administration, and the Building Inspector to remain current with NFIP procedures and policies, regular training must be taken. This training would broaden the Town's identification of building projects that may be in the floodplain. Workshops are offered by the State and/or FEMA (or in other training) and addresses flood hazard planning and management. This is an Action to be repeated a repeated at regular intervals to be effective.	Flood, Scouring & Erosion, Wind, Winter, Tropical, River, Ice Jam	Floodplains	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A
#30- 2015	Investigate the Formation of a Citizen Emergency Response Team (CERT) with the Assistance of the CAPHN to Improve Community Outreach	Short Term 1-2 Years then Ongoing	73	Fire Department	\$500 annually	Citizen readiness to respond and endure disasters reduces the impact of disasters and there costs. A Regional CERT is supported by and recommended by the Capital Area Public Health	Human, Mass Casualty, Utility, Extreme Temps, Secondary to Natural Haz	Entire Town	Cost is for materials for citizen education.	Fire Department Operating Budget

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	and Safety Participation					Network and can be supported by the local American Red Cross.				
#32-2015	Educate Landowners and Homeowners about Erosion Mitigation and Private Culvert Maintenance (FGA) to Reduce the Impact of Floods on Private Land	Short Term 1-2 Years then Ongoing	68	Emergency Management with Highway Department	\$1,500	Owners can try to fix their own drainage issues using materials made available by the town: an information packet, posting on the town website, and producing or making available existing brochures. Many banks of the river are eroded and they are on private property. To help reduce erosion, develop a brochure on the importance of vegetated buffers and provide specific guidance of what landowners can do. Develop and mail brochures to 60+ riverfront landowners, see website. Consider outside kiosks, BBSP, Post Office, gas stations, Town Office, Library for locations. Information sources include UNH Coop Ext, NHDES, NRCS, NHGS, FEMA etc.	Flood, Scouring & Erosion, Wind, Winter, Debris, Tropical	Entire Town	Cost is for printing materials, mailing costs, \$1,500 per kiosk at the Town Hall.	Emergency Management Budget
#39-2015	Hold Active School Shooter Training Exercises to Reduce Human Casualties During Actual Events	Short Term 1-2 Years then Ongoing	71	Police Dept	\$14,000 annually, depending upon scope	Hold trainings in all 4 schools (Elementary School, Armand Dupont Middle School, PACE Academy, Pine Haven Boys Center) annually. Involve with MUA PDs, CNHR Spec Op Units, FD, Schools, Tri-Town Ambulance. Last held in March 2020 and before then in Aug 2019.	Human, Active Shooter, Mass Casualty	Allenstown Elementary School, Armand Dupont Middle School	Cost also for supplies and consultants to coordinate and evaluate the exercise. Cost is for salaries for OT	HSEEP Grant, Police Department Operating Budget
#91-2020	Encourage Olympus Pizza to Consider Mitigating Future Flood Damage and	Medium Term 3-4 Years	60	Building Inspection, with Town Administrati	\$0	Flooding is experienced at Olympus Pizza during heavy rain. Puddle near the back door. The slope of Granite Street channels	Flood, Winter, Debris, Tropical, Aging Infrastructure	Granite Street	Cost is \$0 for in-kind staff and/or volunteer labor	N/A

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Offer Assistance with Grants and Engineering Solutions			on and Emergency Management assistance		the water into the business. Would encourage planting greenery, but all pavement. The catch basins are too high, might have to berm or curb the water to redirect to the nearest storm drain, although those are higher up the hill. Mitigation is cost prohibitive and not the responsibility of the Town. Refer to existing FEMA info on floodproofing options to present to landowner. Possible solutions could be to construct Cape Cod berms, reconstruct their drainage to prevent flooding of their building, to plan for a water vacuum and sandbags, or for wet floodproofing			conducted during normal duties to fulfill this Action. Any project costs would be borne by the private business.	
#92-2020	Provide Public Education on Safe, Proper Internet and Email Protocol and Current Cyber Scams and Encourage Cybersecurity Diligence	Short Term 1-2 Years then Ongoing	67	Police Dept	\$0	Any home, facility or business in Allenstown connected to the internet is vulnerable to cyberattack. PD currently provides scam trainings. Locate existing information and post on the Town website or developing pamphlets for distribution in Town facilities. Businesses and public spaces are opening up hot spots at existing connections for good signals in some areas. Multi-level password verification should be highly encouraged. Hotspot hacking issues are a particular problem.	Cyber, Tech	Entire Town	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
#93-2020	Develop a Downtown Evacuation Plan to Accommodate High Pressure Gas line Breaks and Reduce the Risk of Injury and Property Damage	<u>Medium Term</u> 3-4 Years	64	Fire Department	\$5,000	The Tennessee Company high pressure gas pipeline, if disrupted, could cause devastating problems to the compact downtown area. The gas may flow down Ferry Street, past Riverside Park, toward the River. The estimated plume area needs to be determined. The CNH Haz Mat CAMEO/ALOHA Team is active, so determine what data they have for downtown. The experienced CNH Haz Mat Team would be used in Allenstown during in a large event like this.	Earthquake, Utility, Crash, Haz Mat, Evacuation, Human, Mass Casualty	Downtown	Cost is for developing plan and Posting evacuation route signs	Emergency Management Budget
#94-2020	Provide Public Education Summarizing the Risks and Expectations of Infectious Diseases Such as COVID-19 to Reduce the Impact of Public Health Incidents	<u>Short Term</u> 1-2 Years then Ongoing	68	Emergency Management with Health Officer and Webmaster	\$0	Throughout Town, public health social distancing is being practiced to slow the coronavirus. Other outbreaks which are more common (flu, measles) should be vaccinated against and would have minimal susceptibility to reinfect others. Community Center. Promote staying home if you or someone in your household is ill and staying out of public areas, at least without taking mandated or medically proscribed precautions.	Health, Mass Casualty	Entire Town	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A
#95-2020	Encourage Swiftwater Condominiums to Develop an Emergency Evacuation Plan to Reduce the Risk of	<u>Short Term</u> 1-2 Years	63	Fire Department	\$0	Swiftwater Condominiums, home to about 100 people, are especially vulnerable to Suncook River inundation flooding and channel movement because of their location along the intervalle.	Flood, River, Debris, Ice Jam, Evacuation, Fire	Swiftwater Condos	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal	N/A

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Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Injury During Flood Events					Providing Town assistance where needed and develop a drill with Town emergency response.			duties to fulfill this Action.	
#96-2020	Promote a Residential Neighborhood Watch for the Downtown to Help Prevent Vandalism and Criminal Activity	<u>Short Term</u> 1-2 Years	68	Police Department	\$500	If the Whitten Street Park playground and basketball recreational facilities are disrupted from any natural hazard event, the youth could cause mischief (such as rocks thrown on the Community Center roof). Neighbors watch for mischief. Security cameras already in place but no formal, announced watch has been organized.	Vandalism, Sabotage, Violence, Human, Fire	Downtown	Cost is for signage and stickers for homes (made by the prison for less expense) in the Downtown area.	Donations and Police dept budget - Community Policing
#97-2020	Obtain and Archive Local Business Emergency Management Plans to Reduce the Risk of Injury and Damage from Incidents	<u>Long Term</u> 4-5 Years	66	Emergency Management	\$0	Identify those businesses which have EMPS and collect them. Review the effectiveness of the Plans, work with businesses to revise plans and perform tabletop exercises.	Earthquake, Fire, Utility, Crash, Haz Mat, Evacuation, Human, Mass Casualty	Businesses	Cost is \$0 for in-kind staff and/or volunteer labor conducted during normal duties to fulfill this Action.	N/A

Source: Allenstown Hazard Mitigation Committee

Great Projects... And the Realities of Project Implementation in New Hampshire

These important but costly and/or time-consuming mitigation projects identified in the **Mitigation Action Plan** represent the best case scenarios (or to some, “wish-list” items) for completion. There are many barriers to successful implementation of any project which is outside the typical duties of a Town staff member or volunteer. The annual struggle to obtain municipal funding at Town Meetings and the uncertainty of political & local support needed for hazard mitigation projects, the limited staff time available to administer and complete the projects, and dwindling volunteer support to help locate grants and work on the Action Plan items all reduce the Town’s ability to complete successful hazard mitigation projects within the Plan’s **5-year** lifespan. Town staff and volunteers are usually required to be reactive to their numerous daily duties or annual processes and have little availability to be proactive. This is especially true for the Central NH region’s smaller communities that rely on voter support for staff hiring and/or hazard mitigation project budget funding, which is **19** out of **20** municipalities (excludes the City of Concord).

Therefore, mitigation and other projects are generally completed on an “as-needed basis” or on an “as-available basis” despite the different ways of evaluation and prioritization shown within the **Hazard Mitigation Plan 2020**. Small New Hampshire communities do the best they can with the resources available to them to make ends meet, particularly in times of economic duress or hardship and our State’s aging population. Town Meeting voters decide whether to approve new zoning ordinances which can help mitigate hazards, vote to approve Department Budgets which usually are sustainable and do not allow enough flexibility to plan ahead, and vote to approve Warrant Articles for a hazard mitigation project. Town volunteers are relied upon to do much of the hazard mitigation work as Town staff are already engaged in real-time, constant public engagement issues and have little additional time available for planning. Few younger people are stepping up to the plate of community volunteering when our existing volunteers are retiring. Indeed, many staff or volunteers have dual or triple roles in the community to fill vacancies, such as a Town Administrator serving as Health Officer and Human Services Officer and a volunteer Fire Chief serving as volunteer Emergency Management Director. Town staff try to accomplish their priority hazard mitigation projects in between their normal duties, but the reactive nature of New Hampshire municipal operations does not provide the necessary support unless there is an urgent need.

Our State’s communities, including Allenstown, are used to “toughing it out” and will try to accomplish all they can with the time, funding, and resources available to them. However, many of these **2020** Actions may end up **Deferred to 2025** simply because of the unique nature of our independent State and community cultures.

Action Evaluation and Prioritization Methods

A variety of methods were utilized to evaluate and prioritize the Actions. These methods include the enhanced STAPLEE (Social Technical Administrative Political Legal Environmental and Economics) criteria, designating the Action to be completed within a certain timeframe, and completing a basic **Cost to Benefits Analysis**, a later section. These prioritization methods are meant to enable the community to better identify which Actions are more important and are more feasible than others.

ENHANCED STAPLEE METHOD

An enhanced provided a better methodology for prioritization the Actions against one another. The Hazard Mitigation Committee ranked each of the mitigation Actions derived from the evaluation process. The total **Ranking Score** serves as a guide to the relative ease of Action completion by scoring numerous **societal and ethical impact questions** and does not represent the Town’s Action *importance* priority. Instead, the STAPLEE process evaluates each Action and attempts to identify some potential barriers to its success. As revised in **2020**, a score of **75** would indicate that the mitigation strategy, or Action, would be relatively among the easiest Actions to achieve from a social and ethical standpoint.

The previous Plans including the **2015 Plan** had answered the same questions, except the three new questions regarding funding, staffing, and historic preservation, on a scale of **1-3**, with **“1”** indicating a **NO** response, **“2”** indicating a **MAYBE** response, and **“3”** indicating a **YES** response, for a possible highest ranking total score of **36**.

There is more latitude in the **2020 Plan**’s enhanced STAPLEE scores to more easily identify the relatively easiest Action projects for completion. All enhanced STAPLEE answers are subjective and depend on the opinions of the Committee members discussing them. The Committee answered these **15** questions with a numeric score of **“1”** indicating a **NO** response, **“2”** indicating an **UNCERTAIN** response, **“3”** indicating a **MAYBE** response, **“4”** indicating a **LIKELY** response or **“5”** indicating a **YES** response, about whether the Action can fulfill the criteria:

- Does the action reduce damage and human losses?
- Does the action contribute to community objectives?
- Does the action meet existing regulations?
- Does the action protect historic structures?
- Can the action be implemented quickly?
- Is the action socially acceptable?
- Is the action technically feasible?
- Is the action administratively possible?
- Is the action politically acceptable?

Action Completion	
RANKING	SCORE
Excellent	75 - 60
Good	45 - 59
Fair	44 - 30
Poor	29 - 15

- Does the action offer reasonable benefits compared to its cost in implementing?
- Is the action legal?
- Is the action support or protect the environment?
- Does the action have the funding necessary for completion?
- Does the action have the necessary staff or volunteers to undertake?
- Does the action support historic preservation?

The enhanced STAPLEE scores can range from a low of **15** to a high **75**, the highest possible ranking. Allenstown’s **Mitigation Action Plan** STAPLEE rating is shown in **Figure 29** and includes a basic benefit-cost ranking as shown in yellow.

Figure 29
Enhanced STAPLEE Ranking of Mitigation Actions

Action Number	Does the Action..... or Is the Action.....	Reduce Damage? (or Injury)	Contribute to Town Objectives? (Supported by Master Plan or current thinking?)	Meet Regulations? (If there are any)	Protect Sensitive Structures? (Buildings, roads, culverts, human-made things?)	Implemented Quickly? (See also Action Plan for Timeframe)	Socially Acceptable? (People like it)	Politically Acceptable? (Public Officials like it)	Administratively Realistic? (Have admin skills or time for paperwork)	Technically Feasible? (Have tech skills or special equipment)	Have a Reasonable Cost to Benefits Gained?	Legal? (Or will be legal upon completion)	Support or Protect the Natural Environment?	Have the Funding?	Have Necessary Staff or Volunteers?	Support Historic Preservation?	Ranking Score 15-75
#11-2010	Request Bear Brook State Park Management Plan Update from NH DRED and integrate into EOP to Reduce the Impact of Wildfire, Lightning, Tree Debris in the Park	3	2	5	5	5	4	5	5	5	2	5	5	3	4	5	63
#13-2010	Update Wetlands Ordinance to Reflect New NH DES Standards to Reduce Risk of Erosion and Flooding	5	5	5	5	5	5	5	5	5	4	5	5	3	4	3	69
#28-2015	Number New Properties in Compliance with 911 Ordinance to Reduce the Risk of Injury from All Hazards	4	5	5	5	5	5	5	5	5	5	5	1	5	5	1	66
#54-2015	Update the Zoning Ordinance to Comply with NFIP Requirements to Reduce the Impact of Flood & River Hazards <i>Suncook River Plan Action</i>	4	5	5	5	5	5	5	5	5	4	5	5	3	4	1	66
#60-2015	Develop IT Security Procedures to Reduce the Risk of Cyberattack	5	5	5	5	5	5	5	5	5	5	5	1	4	5	1	66
#61-2015	Develop Spill and Chemical Response Plan for Allenstown Wastewater Treatment Facility to Reduce the Long Term Risk Haz Mat Incidents and Water Quality Issues	5	5	5	5	4	5	5	5	5	4	5	5	3	5	3	69
#66-2015	Update the 2016 Master Plan with Current 2020 Census Data to Provide the Basis for Sensible Natural Hazard Regulation and Ordinances	1	5	5	4	3	5	5	5	5	4	5	1	5	5	2	60
#67-2015	Update the 2021-2026 CIP Annually to Add Hazard Mitigation Projects to Ensure Funding for Infrastructure Projects to Protect the Town from Natural Hazards	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	73
#73-2020	Revise and Implement Protocol for a Staff and Volunteer Annual Password Change for Access to the Town Cloud Intranet System to Reduce the Risk of Cyberattack	5	5	5	5	5	5	5	5	5	5	5	1	4	5	1	66
#74-2020	Require Developers to Upgrade Private Roads and Wood Roads to a Class V Town Road Standards When New Developments Are Approved to Reduce Long-Term Winter, Wind, Debris, Wildfire Risks to Resident Safety	5	5	5	5	5	5	5	5	5	5	5	4	5	5	1	70
#75-2020	Revise the Subdivision Regulations to Stipulate Phasing of Large Developments Over a Number of Years to Reduce Long Term Risk of Treefall, Wildfire, Service Overload	5	5	5	5	5	5	5	5	5	5	5	4	5	5	1	70
#76-2020	Recommend Fire Suppression Systems or Cisterns in New Single Family Homes and Developments to Reduce the Impact of Lightning, Wildfire and Fire	5	5	5	5	3	4	5	5	5	5	5	4	5	5	4	70
#77-2020	Update the Excavation and Reclamation Regulations to Assist with the Annual Review and Permitting of Operations and Blasting and Ensure the Regulations Contain Current Standards to Reduce the Risk of Landslide	5	5	5	5	5	5	5	5	5	5	5	5	5	4	1	70
#78-2020	Develop Regulations Relating to Spill Response Control Plans for Businesses into the Site Plan Review Regulations to Reduce the Long Term Risk Haz Mat Incidents and Water Quality Issues	5	5	5	5	5	5	5	5	5	5	5	5	5	4	1	70
#79-2020	Modify the Subdivision Regulations and Site Plan Review Regulations to Add Requirements for Secondary Egress to Certain High Density or Geographically Isolated Developments to Reduce Long-Term Winter, Wind, Debris, Wildfire Risks to Resident Safety	5	5	5	5	5	5	5	5	5	5	5	4	5	5	1	70
#14-2015	Establish Culvert Replacement Program to Reduce the Impact of Flood Conditions <i>Suncook River Plan Action</i>	5	5	5	5	4	5	5	5	5	5	5	5	3	5	1	68
#16-2015	Upgrade Mount Delight Bridge Culvert over Pease Brook to Reduce the Impact of Flood Conditions <i>Suncook River Plan Action</i>	5	5	5	5	2	5	2	5	5	5	5	5	2	5	1	62
#18-2015	Encourage the Placement of Cisterns in Developed Rural Areas without Water Supply for Fire Protection	5	5	5	5	3	4	5	5	5	3	5	4	2	5	4	65

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Action Number	Does the Action..... or Is the Action.....	Reduce Damage? (or Injury)	Contribute to Town Objectives? (Supported by Master Plan or current thinking?)	Meet Regulations? (If there are any)	Protect Sensitive Structures? (Buildings, roads, culverts, human-made things?)	Implement Quickly? (See also Action Plan for Timeframe)	Socially Acceptable? (People like it)	Politically Acceptable? (Public Officials like it)	Administratively Realistic? (Have admin skills or time for paperwork)	Technically Feasible? (Have tech skills or special equipment)	Have a Reasonable Cost to Benefits Gained?	Legal? (Or will be legal upon completion)	Support or Protect the Natural Environment?	Have the Funding?	Have Necessary Staff or Volunteers?	Support Historic Preservation?	Ranking Score 15-75
#22-2015	Work with NOAA and USGS to Upgrade Route 28 Stream Gage to Provide Water Level Predictions to Reduce the Risk of Injury During Flooding Events <i>Suncook River Plan Action</i>	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	74
#80-2020	Pursue Secondary Egress Options to the Bailey Avenue Water Works Tank, Including a Locked Emergency Gate on US 3 to Ensure Access During Winter, Fire or Wind Events	3	5	5	3	2	3	2	3	5	1	5	1	1	1	1	41
#81-2020	Inventory, Evaluate and Replace Any 48" Inverted Rusted, Blocked Culverts in Town to Reduce the Impact of Flood Conditions	5	5	5	5	5	5	5	5	5	5	5	5	1	4	3	68
#82-2020	Install Dry Hydrants to Create Easier Access to Water Sources to Provide Water Supply for Fire Suppression	5	5	5	5	3	5	5	5	4	4	5	5	4	3	4	67
#1-2010	Apply for Additional Funding to Voluntarily Purchase 10 More Homes in the Floodplain to Reduce the Long Term Risk of Damages and Increase Flood Capacity <i>Suncook River Plan Action</i>	5	3	5	3	1	3	5	3	4	3	5	5	1	2	1	49
#2-2010	Work with NHDES on Suncook River from Downstream to Upstream to Mitigate Allenstown Flood Hazards <i>Suncook River Plan Action</i>	5	5	5	5	2	5	5	4	3	4	5	5	1	3	1	58
#3-2010	Perform Drive-by Tree Examinations and Notification of Utility Companies to Reduce the Risk of Tree Fall and Utility Failure During Storms	5	5	5	5	2	5	5	5	5	5	5	4	1	5	4	66
#20-2015	Consult with NH Geological Survey to Evaluate Bank Armoring of Town Owned Mass-Failure Properties (FGA) to Plan for Appropriate Mitigation Measures	5	5	5	1	1	5	3	5	1	2	5	5	1	1	2	47
#29-2015	Certify Highway Department Staff to Become Certified NHDES Culvert Maintainer (FGA) to Reduce the Risk of Major Flooding Damage in Certain Culvert Locations	5	5	5	5	3	5	5	5	5	5	5	5	4	5	3	70
#83-2020	Investigate How to Obtain Access to Another Community's HHW Collection or Investigate Holding the Town's Own HHW Collection to Reduce the Long Term Risk of Haz Mat Spills and Water Quality Degradation	5	5	5	3	3	5	5	2	5	1	5	5	1	5	1	56
#84-2020	Obtain, Review and Archive NHDES Private dam Emergency Action Plans (EAPs) and Dam Operational Plans (DOPs) to Reduce the Risk of Inadequate Infrastructure	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	74
#85-2020	Evaluate Cemeteries and Establish a Program for Filling in Subsiding Older Graves to Reduce Erosion and Subsidence	5	5	5	5	3	5	5	5	5	5	5	4	4	5	5	71
#86-2020	Establish an Inspection and Cutting Program of Hazardous Trees at Town Cemeteries to Reduce the Number of Limbs Falling on Headstones (Historical Site Destruction)	5	5	5	3	4	5	5	5	5	5	5	4	1	2	5	64
#87-2020	Encourage the State to Purchase and Install Public Access Webcams on the Oak Hill Fire Tower for Fire Monitoring in BOSP to Reduce the Impact of Lightning and Wildfire	5	5	5	5	1	5	3	2	2	2	5	5	1	1	5	52
#88-2020	Evaluate Iris Pond Ice Thickness to Estimate Potential Ice Floes/ Ice Jam Conditions	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	74
#89-2020	Consider Retaining Tax Acquired Properties in Floodprone Areas to Provide Additional Flood Storage Capacity During Floods	5	5	5	5	1	3	3	5	5	3	5	4	3	5	3	60
#90-2020	Undertake Possible Brownfields Investigation on the Railroad Property South of Ferry Street for Rail Trail Use to Reduce the Risk of Injury from Hazardous Materials	1	5	5	1	1	5	5	5	3	5	5	5	5	2	5	58
#5-2010	Continue to Offer Fire Prevention and Public Education Programs to Reduce the Risk of Fire and Wildfire	5	5	5	5	5	5	5	5	5	5	5	5	4	4	5	73
#7-2010	Participate in National Flood Insurance (NFIP) Training to Increase the Understanding and Application of Floodplain Regulation <i>Suncook River Plan Action</i>	5	5	5	5	5	5	5	5	5	5	5	5	5	5	1	71
#30-2015	Investigate the Formation of a Citizen Emergency Response Team (CERT) with the Assistance of the CAPHM to Improve Community Outreach and Safety Participation	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	73
#32-2015	Educate Landowners and Homeowners about Erosion Mitigation and Private Culvert Maintenance (FGA) to Reduce the Impact of Floods on Private Land	5	5	5	5	4	5	5	5	5	5	5	3	5	5	1	68
#39-2015	Hold Active School Shooter Training Exercises to Reduce Human Casualties During Actual Events	5	5	5	5	5	5	5	5	5	5	5	5	5	5	1	71
#91-2020	Encourage Olympus Pizza to Consider Mitigating Future Flood Damage and Offer Assistance with Grants and Engineering Solutions	5	3	5	5	2	3	5	5	3	5	5	3	5	5	1	60
#92-2020	Provide Public Education on Safe, Proper Internet and Email Protocol and Current Cyber Scams and Encourage Cybersecurity Diligence	5	5	5	5	5	5	5	5	5	5	5	1	5	5	1	67
#93-2020	Develop a Downtown Evacuation Plan to Accommodate High Pressure Gasline Breaks and Reduce the Risk of Injury and Property Damage	5	5	5	5	3	5	5	5	5	3	5	4	1	3	5	64
#94-2020	Provide Public Education Summarizing the Risks and Expectations of Infectious Diseases Such as COVID-19 to Reduce the Impact of Public Health Incidents	5	5	5	1	5	5	5	5	5	5	5	4	5	5	3	68
#95-2020	Encourage Swiftwater Condominiums to Develop an Emergency Evacuation Plan to Reduce the Risk of Injury During Flood Events	5	5	5	1	5	5	5	5	5	5	5	1	5	5	1	63
#96-2020	Promote a Residential Neighborhood Watch for the Downtown to Help Prevent Vandalism and Criminal Activity	5	5	5	5	5	5	5	5	5	5	5	4	3	3	3	68
#97-2020	Obtain and Archive Local Business Emergency Management Plans to Reduce the Risk of Injury and Damage from Incidents	5	5	5	5	3	4	5	5	5	5	5	3	4	4	3	66

Source: Allenstown Hazard Mitigation Committee

ACTION TIMEFRAMES

The Actions are also prioritized by an estimated **Action Timeframe** for completion based upon the other Town activities (hazard mitigation-related or not), funding potential for the Action, the need for the Action project, and possible staff time and volunteers available to complete the Action. This relative Action importance priority is measured by the **time indicated for project completion**. All Action projects within the **Mitigation Action Plan** have been assigned an **Action Timeframe**.

Those projects which are designated as **Ongoing** mean the Action should be undertaken on a regular basis throughout the five-year lifespan of the Plan. Actions that could qualify as **Ongoing** include public education, zoning ordinance or regulation revisions, essential mitigation maintenance and more. However, even **Ongoing** Actions are completed once before repetition. As a result, those Actions with an **Ongoing Action Timeframe** also include a duration (**Short, Medium** or **Long Term**) included.

Action Timeframe	Description of Timeframe
Ongoing	Action undertaken throughout the life of the 5-year Plan
Short Term	Action should be undertaken during Years 1-2 of the Plan
Medium Term	Action should be undertaken during Years 3-4 of the Plan
Long Term	Action should be undertaken during Years 4-5 of the Plan

Short Term projects are those which are the more important Actions and should be undertaken during **Years 1-2** of the Plan’s lifespan if possible. **Medium Term** Actions are recommended by the Hazard Mitigation Committee to be undertaken during **Years 3-4** of the Plan’s lifespan, while **Long Term** Actions are those which should wait until last, with suggested implementation undertaken during Plan **Years 4-5**. It is important to remember the **Action Timeframes** are relative to each other and are another an indication of Action importance. If an Action cannot be completed within the **Action Timeframe**, it may still be a higher priority than other Actions but was unable to be implemented for some reason.

Both the **Action Timeframe** and the **Ranking Score** are incorporated into the **Mitigation Action Plan** to assist the Town with implementing the hazard mitigation Actions. The Actions can be sorted within their Action Category by either priority for easy display of the desired characteristic; Actions can also be sorted by **Responsible Department** to keep them all together for ease of completion.

COST TO BENEFIT ANALYSIS

A simple **Cost to Benefit Analysis** ranking is contained within the enhanced STAPLEE criteria as displayed in the previous **Figure**.

Natural Hazards Evaluated for Which Specific Actions Were Not Identified

The Hazard Mitigation Committee assessed each of hazards and made determinations whether to specifically develop mitigation Actions for all natural hazards. Nearly all the potential Actions can be applied to multiple natural or other hazards based upon the generality of the Action’s effect. Still, there could be no solutions or mitigation Actions developed for some of the more difficult to mitigate natural hazards. Many possible reasons are considered such as feasibility, prohibitive cost, jurisdiction, staff availability to develop and administer the project, lack of local support, unrealistic favorable outcome for the effort and more, all resulting in the point that for some natural hazards, potential Actions would not have worked for the Town.

Many Actions are general in nature and have the capacity to mitigate multiple types of natural hazards. From **4 HAZARD RISK ASSESSMENT**, those natural hazards rated a **LOW Concern** may not have been considered for an Action because their priority was not as important as other hazards. The **MEDIUM** and **HIGH Concern** hazards either have generalized or targeted Actions associated with them in the **Mitigation Action Plan** or the reason why no specific or feasible Action was developed for the highest **Concerns** is described in **Table 51**.

Table 51

Committee Assessment of Priority Natural Hazards with No Mitigation Actions

CONCERN	Natural Hazard	Committee Assessment
LOW	Dam Breach, Release or Failure	Not a priority but see Actions.
LOW	Drought	See Actions.
LOW	Earthquake	Not a priority but see Actions.
LOW	Extreme Temperatures	See Actions.
HIGH	High Wind Events	See Actions. Related to overall Severe Weather Storms.
LOW	Inland Flooding	Not a priority but see Actions. Multiple Actions relating to culverts and flood projects.
LOW	Landslide	Not a priority.
LOW	Lightning	See Actions.
HIGH	Public Health	See Actions. Multiple Actions related to Public Health.
LOW	River Hazards	See Actions.
HIGH	Severe Winter Weather	See Actions. Related to overall Severe Weather Storms.
LOW	Solar Storms and Space Weather	Not a priority.
LOW	Tropical and Post-Tropical Storms	See Actions. Related to overall Severe Weather Storms.
LOW	Wildfire	See Actions.

Source: Allenstown Hazard Mitigation Committee

9 ANNUAL IMPLEMENTATION AND EVALUATION

The Town received FEMA approval for the prior **Hazard Mitigation Plan** in **September 2015**. The completion of a planning document is merely the first step in its life as an evolving tool. The **Hazard Mitigation Plan Update** is a dynamic document that should be considered by all Town Departments, Boards, and Committees within their normal working environments. While evaluating the effectiveness of Actions in its everyday implementation, everyone should be able to contribute to the relevancy and usefulness of the Plan and to communicate with the Hazard Mitigation Committee where changes should be made. An annual effort will be undertaken to complete Actions and add new Actions as old tasks are completed and new situations arise. This Chapter will discuss the methods by which the Town of Allenstown will review, monitor, and update its new **Allenstown Hazard Mitigation Plan Update 2020**.

Annual Monitoring and Update of the Mitigation Action Plan

The Board of Selectmen should vote to establish a permanent Hazard Mitigation Committee within **3 months** of receiving the FEMA **Letter of Formal Approval** as indicated in **1 PLANNING PROCESS**. The purpose is to meet on a regular basis to ensure the **Hazard Mitigation Plan’s** Actions are being actively worked on and the Plan is evaluated and revised to fit the changing priorities of the Town.

The Emergency Management Director or other Board of Selectmen designee should continue to serve as Chair of the Committee for Hazard Mitigation meetings and should be officially appointed to such a capacity by the Board. Current Hazard Mitigation Committee members can be appointed to continue to participate as members of the permanent Committee. More information is provided in **APPENDIX B**.

Committee membership should include:

- ✓ Emergency Management Director
- ✓ Deputy Emergency Management Director
- ✓ Town Administration
- ✓ Fire Chief or designee
- ✓ Police Chief or designee
- ✓ Road Agent or designee
- ✓ Building Inspector/ Zoning Compl. Off.
- ✓ Welfare Officer/Health Officer
- ✓ Transfer Station/Recycling Ctr. Supvr.
- ✓ Town Planner / Planning Board
- ✓ Wastewater Treatment Sup.
- ✓ Pembroke Water Works Supt. or Comm.
- ✓ 1 Board of Selectmen member
- ✓ 1 Planning Board member
- ✓ 1 Budget Advisory Committee member
- ✓ 1 Allenstown Community School or School District Representative
- ✓ 1 Library Representative
- ✓ 1 Historical Society member
- ✓ 1 Bear Brook State Park Representative
- ✓ 1 Community Center Representative
- ✓ Community (Stakeholders) at Large

Stakeholders who should be solicited to attend meetings and to participate equitably in the Plan development process include representatives from Allenstown School District, Bear Brook State Park, Community Center, Library, Historical Society, the business community, Churches, neighborhoods, local State Representatives, Chamber of Commerce, agricultural/farming operations, trails groups, local non-profits including the Capital Area Public Health Network, area emergency management directors, local, State or Federal agency representatives (such as NH HSEM), and other members of the public. This composition provides a wide spectrum of potential interests and opportunities for partnership to develop and accomplish Actions.

This Committee will **aim to meet up to 4 times per year** to follow these potential future meeting activities to update the **Mitigation Action Plan** and complete the Plan’s annual evaluation as displayed in **Table 52**.

Table 52

Hazard Mitigation Committee Preliminary Annual Future Meeting Activities

Meeting or Activity Month	Preliminary HMC Interim Meeting Agenda Items and Activities
JANUARY HMC Meeting <i>Budget determined</i>	Town operating budgets are determined for the next year. HMC assists Board of Selectmen and Budget HMC with getting their mitigation projects funded and written into budgets. Action implementation continues. HMC provides a Progress Report #2 for all Actions to responsible parties for response by beginning of February along with the Action Status Tracking Sheet to display Action progress and request updates. HMC continues update to the Action Status Tracking Sheet using the Department Mitigation Action Progress Reports .
February	HMC staff continues update to the Mitigation Action Plan using Department Mitigation Action Progress Reports and an updated Action Status Tracking sheet . HMC staff provides revised copies to Department Heads, keeps original Word and Excel files accessible on Town computer system.
APRIL HMC Meeting <i>\$ available</i>	Annual funding is received from Town Meeting. HMC completes annual update of the Mitigation Action Plan and the associated Plan Chapter and sections (CHAPTER 8) with Progress Reports #3 . HMC determines Action Plan items to pursue for this year, including \$0 cost items.
April – June	HMC staff & members present a plan for mitigation actions for the next year to the Board of Selectmen for their support to proceed. HMC members ensure Department Heads are provided with information to work on their Actions. HMC members meets with Department Heads to inform about the Action priorities and requests attention to Short Term (1-2 Years) Actions . Departments begin working on Actions.
JUNE HMC Meeting	Infrastructure projects will be underway. HMC provides a Progress Report #1 for all Actions to responsible Depts/Boards for response by beginning of July. HMC reviews Annual Evaluation of the Plan (CHAPTER 9) . HMC works with the CIP Committee to get certain projects placed into CIP. Depts to begin placement of next year’s high-cost Action Plan items into the CIP.

Meeting or Activity Month	Preliminary HMC Interim Meeting Agenda Items and Activities
<i>Infrastructure projects underway</i>	
August - December	HMC assists Department Heads with their budget requests to include Action Plan items, and to determine which Actions should have warrant articles. HMC staff continues assistance to Departments for Action Plan items. HMC staff begins to update the Action Status Tracking Sheet . HMC staff & members ensure Haz Mit Actions are added into the CIP.
SEPTEMBER HMC Meeting	HMC will identify projects to accomplish (including \$0) for the upcoming year. HMC attends Board of Selectmen budget meetings and suggests warrant articles for Action Plan items. HMC attends Budget Committee meetings scheduled through January to champion Action item funding.

Sources: Allenstown Hazard Mitigation Committee

Annually and independent of the Town’s budget cycle, a simpler listing of the Hazard Mitigation Committee’s tasks should include:

-  **Document New Hazard Events that Occurred in Town**
 - Hazard Identification and Risk Assessment (**CHAPTER 4** table)
 - Local and Area History of Disaster and Hazard Events (**CHAPTER 4** table)
-  **Coordinate Completion of Annual Mitigation Actions by Assigning to Departments**
 - Appendix B Mitigation Action **Progress Report**
-  **Seek and Help Departments Acquire Funding for Actions & Fill in Tracking File**
 - Appendix B Mitigation **Action/Project Status Tracking**
-  **Evaluate Effectiveness of the Plan and Its Actions Yearly**
 - Appendix B Plan **Evaluation Worksheet**
-  **Obtain Semi-Annual Progress Reports from Departments & Update Tracking File**
 - Appendix B Mitigation **Action/Project Status Tracking**
-  **Update & Reprioritize Mitigation Action Plan and Update Supporting Plan Document Sections**
 - Mitigation Action Plan (**CHAPTER 8** table)
 - Enhanced STAPLEE Prioritization (**CHAPTER 8** table)
 - **Hazard Mitigation Plan Update 2020** sections as needed
 - Make note of the new information added/changed for the **2025 Plan** update!
 - Remember to invite the Stakeholders and public to all meetings and take minutes
-  **Repeat**

For each of the Hazard Mitigation Committee meetings, the Emergency Management Director (or Staff Coordinator) will invite other Department members, Board and Committee members, Town Staff, Allenstown School District representatives, stakeholders and other participants of the **2020 Plan** Committee meetings. Identified and general members of the public will also be invited as indicated previously. Their purpose is to attend and participate in the meetings as full participants, providing input and assisting with decision making. Public notice will be given as press releases in local papers, will be posted in the public places in Allenstown, and will be posted on the Town of Allenstown website at www.allenstownnh.gov.

The **Hazard Mitigation Plan's Mitigation Action Plan** will be updated and evaluated annually generally following the suggestions outlined within the Chapter. All publicity information, Agendas, and Attendance Sheets, should be retained and compiled for inclusion into **APPENDIX C**.

The Emergency Management Director and Department heads will work with the Board of Selectmen to discuss the funding of Action projects as part of the budget process cycle in the fall of each year. The projects identified will be placed into the following fiscal year's budget request if needed, including the Capital Improvements Program (CIP), Town Operating Budgets, and other funding methods.

The Federal Emergency Management Agency (FEMA) encourages communities to upload their Hazard Mitigation Plan Actions into an online database. The **Mitigation Action Tracker** follows municipal Actions through their completion. This added attention to the Town's Actions could enable additional support for grant opportunities when it is shown the Town can complete its mitigation projects. The Town would need to set up an account to enter their Actions into the **FEMA Mitigation Action Tracker** at <https://mat.msc.fema.gov>.

Implementing the Plan through Existing Programs

In addition to work by the Hazard Mitigation Committee and Town Departments, several other mechanisms exist which will ensure that the **Allenstown Hazard Mitigation Plan Update 2020** receives the attention it requires for optimum benefit. Incorporating Actions from the Plan is often the most common way the Hazard Mitigation Plan can be integrated into other existing municipal programs, as described below.

OVERALL IMPLEMENTATION PROGRESS THROUGH LOCAL PLANNING MECHANISMS SINCE THE 2015 PLAN

As a successful, growing community, the Town of Allenstown has a comprehensive network of plans, processes, champions, regulations, and budgets to ensure its local objectives, projects and budgets are fulfilled. The **Allenstown Hazard Mitigation Plan 2015** is a tool for community betterment which works most effectively when partnering with existing planning mechanisms. Since the original **2004 Plan**, the overall integration and importance of the **Allenstown Hazard Mitigation Plan** into existing Town planning mechanisms continues to grow.

Although the **2015 Plan** was not adopted into Planning Board's latest **Master Plan**, the opportunity exists now for incorporation of the **2020 Plan**. The **Capital Improvements Program 2021-2026** has been recently updated and its projects influence new funding for Departments, including the Highway Department funding that previously upgraded culverts in the **Mitigation Action Plan**. The **Zoning Ordinance** was revised annually since **2015** and continues to encourage natural systems protection. The **Subdivision and Site Plan Review Regulations** are intended to be updated in **2020**, which indirectly support hazard mitigation planning principles (such as excavation regulations, fire and emergency access, driveway standards, drainage, landscaping, erosion, etc.) instead of having voted in specific changes as a result of the **2015 Plan**. Annual budgets for Emergency Management have been very small but may be able to increase to consider the **2015 Hazard Mitigation Plan** findings. Yet the overall Town operating budget included limited funding for selected hazard mitigation projects, culvert upgrades, and public outreach within Department budgets. The Town budgets supported hazard mitigation planning where feasible or supported by voters, such as Capital Reserve Funds for Bridge Repair, Highway, and infrastructure improvements. Drainage upgrades and culvert upgrades are a priority of the Highway Department and are important mitigation projects in Allenstown.

Moving forward, Town Boards and Departments have room for further improvement of the **Hazard Mitigation Plan's** incorporation into existing planning mechanisms. For several of these planning programs, a summary of the **Process to Incorporate Actions** as noted below offers ways for the **2020 Plan** to be utilized.

MASTER PLAN

The latest Allenstown Master Plan was adopted by the Planning Board in **2015**. The goal for future updates is annual review and revision of a selection of Chapters. Chapters from the **2015 Master Plan** to update include Vision for Allenstown, Community Survey, Population and Economics, Housing, Historic and Cultural Resources, Transportation, Community Facilities, Conservation, Preservation and Open Space, and Existing and Future Land Use. New future chapters to consider, in addition to the updated chapters, could include an Energy chapter.

To support mitigation efforts, the Planning Board should consider adopting the **Hazard Mitigation Plan 2020** as a separate Chapter to its Master Plan in accordance with **RSA 674:2.II(e)**. The **Hazard Mitigation Plan** should be presented to the Planning Board after FEMA's **Formal Approval**. The Plan can be considered for adoption after a duly noticed public hearing, just as any typical Chapter of a Master Plan. In addition, Actions and concerns from the Plan can be integrated into the new Master Plan.

Process to Incorporate Actions

The Hazard Mitigation Committee will present the approved **Hazard Mitigation Plan** to the Planning Board within **6** months after FEMA's **Letter of Formal Approval** is received for consideration and adoption into the Master Plan after a duly noticed public hearing. This is the same process used to adopt other components of the Master Plan. The NH State law supporting the development of a natural hazard mitigation plan as a component of a community Master Plan is **RSA 674:2-III(e)**. The Hazard Mitigation Committee will oversee the process to begin working with the Planning Board to ensure that the relevant **Hazard Mitigation Plan** Actions are incorporated into the Master Plan.

CAPITAL IMPROVEMENTS PROGRAM

Allenstown's last adopted **Capital Improvements Program (CIP)** is **2021-2016** as adopted in **April 2020**. The goal is to ensure the CIP is reviewed and updated each year by the CIP Committee. The HMC would like to ensure Actions requiring capital improvements funding from the **Hazard Mitigation Plan Update** will be inserted into the Capital Improvements Program for funding during the CIP's next update with specific projects and equipment replacement identified as addressing needs cited in the Update. Depending on the Town's funding needs, Capital Reserve Funds for such items as road & bridge improvements should be identified where appropriate as addressing projects in the **Hazard Mitigation Plan Update**.

Process to Incorporate Actions

The Hazard Mitigation Committee (HMC) will oversee the process to begin working with the Planning Board's CIP Committee to incorporate the various Hazard Mitigation Plan projects into the updated CIP. As the CIP is amended, a representative from the Hazard Mitigation Committee should be appointed to

sit on the CIP Committee or the HMC should submit a CIP Project Application to ensure the mitigation projects are addressed as part of the CIP update process.

TOWN MEETING

In Allenstown, the annual Town Meeting is held in March where the voters of the Town vote to raise money for capital projects and approve the annual operating budget of the Town. This is a good, revolving opportunity to explain the importance of the mitigation actions of the **2020 Plan Update** and **how the funding of specific capital projects simultaneously responds to these mitigation projects.**

Process to Incorporate Actions

The Hazard Mitigation Committee (HMC) members will work with the Town Administrator, Budget Advisory Committee and Board of Selectmen to develop a capital budget and warrant article language for appropriate Actions for **Town Meeting vote**. The HMC members may also request deposits to appropriate Capital Reserve Funds for some of the larger projects. A representative from the Hazard Mitigation Committee will provide a copy of the current **Mitigation Action Plan** to both the Budget Advisory Committee and Board of Selectmen annually and validate the need for funding at the annual Town Meeting to accomplish the projects. The representative will work with Town Administration to write warrant article language for approval Action items if needed or to get the items placed into Department Operating Budgets.

OPERATING AND CAPITAL BUDGETS

Many of the Actions will not require specific funding but are identified as requiring in-kind Staff labor to perform the work required to undertake the Actions. Town Departments and Staff have rigorous job functions that demand their undivided attention to the tasks required to run their respective Departments. Additions to the work load to accommodate the Actions can put a strain on their ability to serve the public during performance of their normal job duties. When possible, Allenstown Departments and Staff will be able to prioritize their tasks to work on **Hazard Mitigation Plan Update 2020** Actions. The in-kind work performed comes out of the Operating Budget for that particular Department.

Process to Incorporate Actions

With obtaining assistance from the HMC, the Department or Board is given the responsibility to ensure their Actions are completed, either by working on the Actions allocated to him/her when their normal job duties permit or by delegating the Action to another person. The funding for the Actions comes out of the Department's operating budget as work is undertaken by the Staff person on an as-time-permits basis unless the Action is a component of the Town staff members' normal work duties. Staff or volunteers will attempt to follow the **Action Time frame** as a guideline for completion. A yearly review of the **Mitigation Action Plan** by the Hazard Mitigation Committee will re-prioritize the Actions, and the members can report on their progress, asking for assistance or more time as needed. **By connecting planned Town of Allenstown improvement projects to specific projects and objectives of the Hazard Mitigation Plan Update 2020, the Departments can utilize their resources more effectively.**

Continued Public Involvement

On behalf of the Hazard Mitigation Committee, the Emergency Management Director and the Staff Coordinator, under direction of the Town Administration, will be responsible for ensuring that Town Departments and the public have adequate opportunity to participate in the planning process. Administrative staff may be utilized to assist with the public involvement process.

For each interim meeting in the annual update process, and for the **5-year** update process procedures that will be utilized for public involvement include:

- Provide personal invitations to Town volunteer Board and Committee Chairs, Budget Advisory Committee members, and Town Department heads;
- Provide personal invitations to abutting community emergency management directors of neighboring Towns;
- Provide personal invitations to the businesses, agencies, neighborhoods, non-profits, and other entities listed previously in **9 ANNUAL IMPLEMENTATION AND EVALUATION**;
- Post public meeting notice flyers and press releases on the Town's website at www.allenstownnh.gov, on the Town's online calendar on the same site, and place agendas and meeting materials on the new Hazard Mitigation Committee webpage.
- Post meeting notices in the Allenstown Town Hall, outside on the Town Bulletin Board, at the Post Office, Community Center, Fire Station, and at local business(es);
- Submit media releases to the Concord Monitor (a paid, regional daily newspaper serving over **40** communities around the Concord area) and The Hooksett Banner (a free, regional weekly newspaper serving about **9** Central NH region and western NH communities).

In addition to previous suggestions for invitations to Hazard Mitigation Committee update meetings, review **APPENDIX A Critical and Community Facilities Vulnerability Assessment** Tables: Vulnerable Populations, Economic Assets and Recreational and Gathering Sites) for further stakeholder opportunities. The NH Homeland Security and Emergency Management Field Representative for Allenstown will be invited. The Town will provide the Central NH Regional Planning Commission with Agendas, Minutes and other materials for archiving, to be used when the **5-year** update again becomes necessary (email to salexander@cnhrpc.org). Any State, regional or federal interest in Allenstown should be considered for direct invitation for MITIGATION, which is a transparent process. EMERGENCY OPERATIONS planning should have a more selective working group.

The new section of the Town website dedicated to Hazard Mitigation Committee activities and the **2020 Plan** should be kept updated with meeting notices and materials used by the Hazard Mitigation Committee. This online location would be an optimal place to post the final **2020 Plan** and its *Maps* and *Appendices* and to continue adding materials for annual Plan updates. Additional pages should be added

for resources, information, and links to other websites for the public. A number of Action Plan items which will be undertaken relate to public education and involvement and the Town website would be an exemplary method of getting the word out.

Implementation and Evaluation of the Plan

During the Committee’s annual review of the **Mitigation Action Plan**, the Actions are evaluated as to whether they have been **Completed, Deleted, or Deferred**. Those Action types are placed into their respective Tables. Any **New** Actions will be added as necessary. Each of the Actions within the updated **Mitigation Action Plan** will undergo the enhanced STAPLEE ranking as discussed in **8 MITIGATION ACTION PLAN**.

A set of comprehensive **Annual Interim Plan Evaluation and Implementation Worksheets** is available to assist the community with Plan implementation in **APPENDIX B**. These worksheets are to be used during the Hazard Mitigation Committee basic meeting schedule outlined previously in **Table 52**.

The worksheets include administrative and organizational documents, those that are used with the Appendices spreadsheets developed, and two Agendas to get started with HMC Interim Update meetings:

COMMITTEE ORGANIZATION AND PUBLICITY DOCUMENTS

- Board of Selectmen’s Organization of Permanent Hazard Mitigation Committee
- Appointed Committee Information and Stakeholder Invitation Contact Information
- Meeting Publicity (Press Releases and Public Notice Meeting Posters) and Tracking Sheet

MEETINGS & WORKING WITH THE ACTIONS

- Example Agenda for Interim Meeting 1 (for minimal Plan update)
- Example Agenda for Interim Meeting 2 (for minimal Plan update)
- Interim Meeting Attendance Sheet
- Mitigation Action Status Tracking Sheet
- Mitigation Action Progress Report for Departments
- Annual Hazard Mitigation Plan Evaluation Worksheet

The **5-year** full Plan update will evaluate the Actions in the same manner in addition to fulfilling a complete update of the **Hazard Mitigation Plan** to then-current guidelines and standards.

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10 APPENDICES

The following **APPENDICES A-E** are included under a separate electronic or paper document to maintain the relative brevity of this **Hazard Mitigation Plan Update**.

Listing of Allenstown Hazard Mitigation Plan Update 2020 Appendices

Some of these documents should be updated annually as part of the interim Action implementation and Plan evaluation process*. The remaining **APPENDICES** could be amended as a result of the new or revised annual information, but they are optional. It is necessary to establish a Town digital storage location for placing any new or updated hazard, Action, meeting or Plan data over the **5-year** interim until the Plan is ready to be fully updated again. Systematic organization will facilitate annual updates and prepare for next **5-year** Plan development in **2025**.

- A Critical and Community Facilities Vulnerability Assessment**
- B Annual Plan Evaluation and Implementation Worksheets ***
- C Meeting Information ***
- D Plan Approval Documentation**
- E Photographic History of Hazard Events ***

Documents should be updated annually *. It is also highly recommended to update **4 HAZARD RISK ASSESSMENT Table 12 Local and Area Hazard Event and Disaster History** to maintain a record of the disasters, hazards, and impacts to Allenstown.

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11 MAPS

Four (4) detailed Maps were created during the development of the **Allenstown Hazard Mitigation Plan 2020**. Data from the previous Plan maps were used, new standardized data layers were available, and Hazard Mitigation Committee members added their own knowledge of sites and hazard events.

Plan Update 2020 Maps

Map 1 Potential Hazards illustrates potential hazard event locations in Allenstown that have the possibility of damaging the community in the future. The *Map 1* legend includes (technology) infrastructure hazards such as dams, bridges, electric transmission lines and evacuation routes. Natural hazards are displayed such as Special Flood Hazard Areas (SFHAs), locations of potential flooding/washout, fire/wildfire, bridge washout, ice and snow, steep slopes (>20%) and more.

Map 2 Past Hazards illustrates the locations of where hazard events have occurred in Allenstown in the past, including areas of SFHA, flooding/washout, snowmelt, dam breach, fire/wildfire, wind damage, ice damage, vehicle crash locations, and more.

Map 3 Critical and Community Facilities includes the infrastructure included in *Map 1 Potential Hazards* on a background of aerial photography and the SFHAs to give viewers a better, real world perspective. The locations of all critical facilities and community facilities as recorded in the **APPENDIX A Critical and Community Facilities Vulnerability Assessment** are displayed on the Map. Each of these sites is numbered on a key listing the names of each facility.

Map 4 Potential Hazards and Losses utilizes all the features of *Map 3* on an aerial photography background and includes the *Map 1 Potential Hazards* and any realistic *Map 2 Past Hazards* locations where hazard events can occur again in Allenstown.

- ✚ **Map 1 - Potential Hazards**
- ✚ **Map 2 - Past Hazards**
- ✚ **Map 3 - Critical and Community Facilities**
- ✚ **Map 4 - Potential Hazards and Losses**