

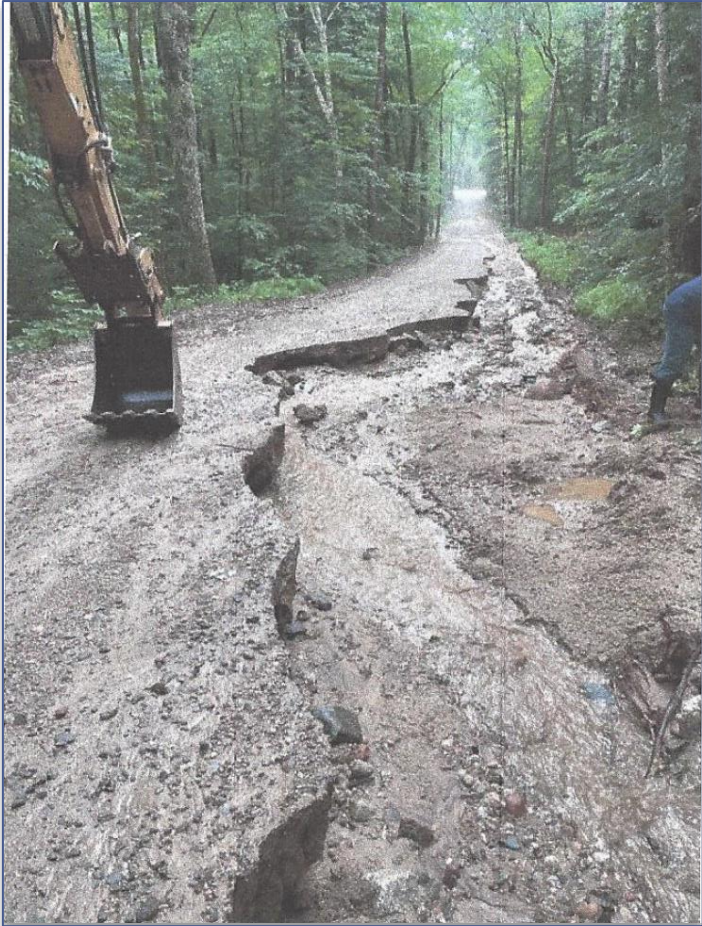
**DRAFT for Public Information Meeting Review
at Special Meeting 08-28-24**

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**Town of
Warner
New
Hampshire**

Hazard Mitigation Plan Update 2024

**PLAN ACTIVE TERM
THROUGH MON XX, 2029**



**Adopted by the Warner
Select Board
Mon xx, 2024**

**Approved by FEMA
Mon xx, 2024**

Plan active
to XX-XX-29

Town of Warner, NH Hazard Mitigation Plan Update 2024

Select Board Adopted **Month xx, 2024**
FEMA Approved **Month xx, 2024**



**Town of Warner
Town Hall**
5 East Main Street
Warner, NH 03278
Phone: (603) 456-2298
www.warnernh.gov

**Town of Warner
Emergency Operations Center**
148 West Main Street
Warner, NH 03278
Phone: (603) 748-0560
www.warnernh.gov/departments/emd



Central NH Regional Planning Commission (CNHRPC)
28 Commercial Street, Suite 3
Concord, NH 03301
Phone: (603) 226-6020
www.cnhrpc.org



**NH Department of Safety (NHDOS)
NH Homeland Security and Emergency Management (NHHSEM)**
33 Hazen Drive
Concord, NH 03305 (Mailing Address)

**NH Homeland Security and Emergency Management (NHHSEM)
Incident Planning and Operations Center (IPOC)**
110 Smokey Bear Blvd
Concord, NH 03301 (Physical Address)
Phone: (800) 852-3792 or (603) 271-2231
www.nh.gov/safety/divisions/hsem
<https://prd.blogs.nh.gov/dos/hsem>



**US Department of Homeland Security
Federal Emergency Management Agency (FEMA), Region 1**
99 High Street, Sixth Floor
Boston, Massachusetts 02110
Phone: (617) 223-9540
www.fema.gov



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1 PLANNING PROCESS

The Town’s Hazard Mitigation Committee reformed in **2023** to update the Plan which included incorporation of the new *FEMA Local Mitigation Planning Policy Guide, effective April 19, 2023* requirements, revising outdated material with current information, and providing the latest **5**-year history of Warner since the last Plan was approved in **June 2019**. A new online community survey was made available to the public for wider input, and the new plan development procedure was documented in the **Methodology** section.

Certificate of Adoption, 2024

Town of Warner, NH
Select Board
Town Hall
PO Box 265, 5 East Main Street
Warner, NH 03278

A Resolution Adopting the Warner Hazard Mitigation Plan Update 2024

WHEREAS, the Town of Warner 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 2024** 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 Warner has developed an updated **Plan** and received approval pending adoption (APA) from the Federal Emergency Management Agency (FEMA) for its **Hazard Mitigation Plan Update 2024** under the requirements of 44 CFR 201.6; and

WHEREAS, public and Committee meetings were held between **September 2023** through **July 2024** regarding the development and review of the **Hazard Mitigation Plan Update 2024**; and

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

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

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

RESOLVED by Town of Warner Select Board:

The Hazard Mitigation Plan Update 2024 is hereby adopted as an official plan of the Town of Warner; 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 Select Board by the Emergency Management Director or designee.

IN WITNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of Warner this xxnd day of Month 2024.

Select Board

Harry Seidel, Chair date

Faith Minton, Vice Chair date

Michael Smith, Member date

ATTEST

SEAL

Town Clerk

Michele Courser, Town Clerk date

Plan Process Acknowledgments

The Select Board established the Hazard Mitigation Committee and was comprised of these individuals on behalf of their respective Departments, Boards or Committees who met between **September 2023** through **July 2024** to develop the **Warner Hazard Mitigation Plan Update 2024**:

- **Timothy Allen**, Warner Public Works Department Director
- **William Chandler**, Police Department Chief
- **Kenneth Cogswell**, Warner Conservation Commission
- **Kimberley Brown Edelmann***, Warner Resident, Former Selectmen
- **Kathleen Frenette**, Warner Town Administrator
- **Amy Gardner***, United Church of Warner Pastor
- **Nancy Ladd**, Pillsbury Free Library Library Director
- **John Leavitt***, Warner Resident
- **Christopher Lopez**, Warner Health Officer
- **Ginger Marsh***, Sugar River Bank Assistant Vice President Regional Branch Administrator, Warner Town Treasurer
- **Raymond Martin**, Warner Village Water District Supervisor
- **Edward Mical**, Warner Emergency Management Director
- **Ronald Piroso**, Warner Deputy Emergency Management Director
- **Harry Seidel**, Warner Select Board Chair

The following Central NH Regional Planning Commission (CNHRPC) staff facilitated and prepared the Hazard Mitigation Plan Update:

- **Stephanie Alexander**, CNHRPC Senior Planner
- **Dylan Cook**, CNHRPC Planning Intern (GIS)
- **Eliane Spalding**, CNHRPC Planning Intern (GIS)

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PARTICIPATION FROM NON-HAZARD MITIGATION COMMITTEE MEMBERS

Several other Town staff, non-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* participated as fully as appointed members in the Hazard Mitigation Committee meetings during the meetings they attended. Many titled participants are Warner residents and are also considered members of the public.

- **Tim Blagden***, Friends of Concord -Lake Sunapee Rail Trail Director
- **Allan Brown***, Warner Resident, Former Selectmen, Former Public Works Director
- **Elizabeth Gilboy**, NH Homeland Security and Emergency Management (NH HSEM) Field Representative (former)
- **Elizabeth Labbe**, Warner Assessing Clerk
- **Barbara Marty**, Warner Resident, Zoning Board of Adjustment Chair
- **Bryan Nowell***, Bradford Emergency Management Director
- **Diane Ricciardelli**, Warner Town Administrator (former)
- **Judith Newman-Rogers**, Warner Select Board Secretary
- **Michael Smith**, Warner Board of Selectmen Member

PARTICIPATION FROM SOCIALLY VULNERABLE AND UNDERREPRESENTED COMMUNITIES

All non-Committee members were invited to participate fully in the meeting discussions and activities. Aside from the general meeting postings and notifications on the Town website, the Warner Hazard Mitigation and Severe Weather Survey, and other methods of promotion, the Warner Hazard Mitigation Committee (HMC) reached out by personal contact and by email to multiple organizations that represent and support the general public, socially vulnerable people and traditionally underrepresented communities within the Town. These included local senior communities, social support organizations, Warner Pillsbury Free Library (appointed as a HMC member), United Church of Warner, Simonds School (part of the Kearsarge Regional School District), Pine Rock Manor assisted living facility, Mt. Kearsarge Indian Museum, a host of local businesses, and area organizations representing vulnerable populations in Warner, such as Capital Area Public Health Network.

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 Warner, School District, County, State, or federal government employee; anyone who is not paid for services by property 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.

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These identified individuals and groups were placed onto the Committee’s agenda and meeting notification distribution email lists for primary meetings. Several representatives did participate in many of the HMC meetings. When there was no response after more than one or two attempts at communication, email notifications ceased so unwanted “spamming” did not occur. Anyone attending the Hazard Mitigation Committee meetings actively participated in discussions and decision making. See also **Table 1.2**.

- **Andrew Bullock***, Mt. Kearsarge Indian Museum Executive Director
- **Kathy Pitman***, Mt. Kearsarge Indian Museum Trustee
- **Amy Gardner***, United Church of Warner Pastor, Warner Hazard Mitigation Committee Member
- **Amanda Manzella***, Pine Rock Manor Director
- **Tim Stokes***, Simonds Elementary School Principal
- **Damian Santana**, Capital Area Public Health Network CAPHN – Granite State United Way, Capital Area Public Health Emergency Preparedness Coordinator

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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, and Flood Mitigation Assistance (FMA) 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 Warner is required to submit for FEMA approval a revised **Hazard Mitigation Plan Update** every five years.

The newest version of New Hampshire Homeland Security and Emergency Management (NH HSEM)’s *State of New Hampshire Multi-Hazard Mitigation Plan 2023* was approved **October 6, 2023** for the next five years. The State’s Plan guides local hazard mitigation planning and allows for New Hampshire to receive federal Hazard Mitigation Assistance (HMA) funding programs to provide to local communities for mitigation, after disasters, and for emergency management assistance.

Prior versions of the Town’s Hazard Mitigation Plan are noted in the **Final Plan Dates** section. A **2021** Building Resilient Infrastructure and Communities (BRIC) 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 **Warner Hazard Mitigation Plan Update 2024** has been developed in accordance with the Disaster Mitigation Act of **2000** and the *FEMA Local Mitigation Planning Policy Guide, effective April 19, 2023*. The most recent Plan development standards provided by FEMA Region I have also been incorporated. The hazard mitigation planning effort of the Town is a regular process and this Plan is considered a “living document.”

The new Warner Hazard Mitigation Committee was established by the Select Board to begin meeting **September 2023** and guided the development of the Plan. The appointed Committee consisted of the Town’s Police, Fire and Emergency Management Departments, Public Works Department, Select Board, Pillsbury Free Library, Conservation Commission, and Administrative Staff. A strong volunteer representation rounded out the meetings. The Town held hybrid remote meetings on Zoom Webinar hosted by CNHRPC and in person at the Emergency Operations Center.

The attendees of the meeting process are noted in the **Acknowledgements**. The Central NH Regional Planning Commission, of which Warner is a member, contributed to the development of this Plan by

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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 **Warner Hazard Mitigation Plan Update 2024** was developed over a seven-month period with a group of Town staff members and volunteers, open to public participants, and the CNHRPC comprising the Hazard Mitigation Committee. The **2023** methodology for Plan development is summarized in this section. The **Hazard Mitigation Plan** is designed differently from the **2019 Plan** with the intent to better conform to the current approvable Central NH Region format and incorporating the new **2023 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, 2023** by using its terminology and some of its tasks, ensuring **Warner’s Plan Update 2024** begins to follow a standardized approach to Plan construction and content endorsed by FEMA. Many of the vital sections of the **2024 Plan Update** will be contained in **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 1.1**. Work Sessions were designed to accomplish what could not be completed at meetings due to time constraints and additional information to process. The HMC opted to hold all of its meetings on Zoom only and all meetings were publicly accessible by Zoom through general Town publicity and direct email list invitations.

Table 1.1

Meeting Schedule and Agenda Activities

Meeting	Date	Agenda Activities – See APPENDIX C	Attended by Public and Stakeholders
Meeting 1 <i>Remotely held via Zoom Webinar and attended in person at Warner EOC</i>	09-27-23	Discuss Process and Schedule; Review Declared Disasters and Public Assistance Funding to Warner; Develop New Hazard Identification and Risk Assessment (HIRA); Determine Change in Intensity; Begin to Identify Recent Past Hazard Events; Schedule Meetings	HMC, CNHRPC, Mt. Kearsarge Indian Museum, Sugar River Bank
Work Session 1 <i>Remotely held via Zoom Webinar and attended in person at Warner EOC</i>	10-11-23	Finish new Natural Hazard Identification and Risk Assessment (HIRA) Rating; Determine Change in Intensity; Complete HIRA Magnitudes;	HMC, CNHRPC, Sugar River Bank, Resident AB, Mt. Kearsarge Indian Museum, United Church of Warner, Resident JL, Resident KBE,

Town of Warner, NH Hazard Mitigation Plan Update 2024

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1 PLANNING PROCESS

Meeting	Date	Agenda Activities – See APPENDIX C	Attended by Public and Stakeholders
Work Session 1.2 <i>Remotely held via Zoom webinar and</i>	10-25-23	Complete HIRA Magnitudes; Finalize Warner Hazard Mitigation + Severe Weather Survey; Identify Recent Past Hazard Events	HMC, CNHRPC, Sugar River Bank, Mt. Kearsarge Indian Museum, United Church of Warner, Resident AB, Resident JE, Resident KBE, NH HSEM
Work Session 1.3 <i>attended In-Person, held at Warner EOC</i>	11-15-23	Identify Recent Past Hazard Events; Update 2019 Maps 1 and 2	HMC, CNHRPC, Sugar River Bank, NH HSEM, United Church of Warner, Pine Rock Manor, Resident JL, Resident AB,
Work Session 1.4 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	11-29-23	Update 2019 Critical & Community Facilities Vulnerability Assessment and 2023 Problem Statements	HMC, CNHRPC, Sugar River Bank, Simonds Elementary School, United Church of Warner, Resident JL, Resident AB, Resident KBE
Work Session 1.5 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	12-13-23	Update 2019 Critical & Community Facilities Vulnerability Assessment and 2023 Problem Statements	HMC, CNHRPC, Sugar River Bank, Simonds Elementary School, United Church of Warner, Resident JL, Resident AB, Resident KBE
Meeting 2 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	01-24-24	Review and Updated goals and Objectives; Review Draft Hazard Mitigation and Severe Weather Survey; Finalize Problem Statements and Identify Those to Utilize	HMC, CNHRPC, Sugar River Bank, United Church of Warner, Resident AB, Resident JL
Work Session 2 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	02-07-24	Finalize Problem Statements and Identify Those to Utilize; Determine Strategy to Complete Updates to Capability Assessment	HMC, CNHRPC, Sugar River Bank, United Church of Warner, Resident JL, Resident KBE, Resident AB
Work Session 2.2 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	02-21-24	Finalize Problem Statements and Identify Those to Utilize as NEW 2024 Mitigation Actions; Work on Updates to Capability Assessment	HMC, CNHRPC, Sugar River Bank, Resident JL
Meeting 3 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	03-06-24	Determine Status of the 2018 Mitigation Actions; Provide Observations on the 2019 Plan and new Plan 2024 Update	HMC, CNHRPC, United Church of Warner, Resident JL, Resident KBE
Work Session 3 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	03-20-24	Complete Observations on the Warner 2019 Plan to Improve the New 2025 Plan Update; Develop Mitigation Action plan for 2025-2029; TBD- Prioritize Mitigation Actions with Enhanced STAPLEE	HMC, CNHRPC, United Church of Warner, Resident JL, Resident KBE

Town of Warner, NH Hazard Mitigation Plan Update 2024

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1 PLANNING PROCESS

Meeting	Date	Agenda Activities – See APPENDIX C	Attended by Public and Stakeholders
Work Session 3.2 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	04-03-24	Complete Observations on the Warner 2019 Plan to Improve the New 2025 Plan Update; Develop Mitigation Action Plan for 2025-2029; TBD- Prioritize Mitigation Actions with Enhanced STAPLEE	HMC, CNHRPC, United Church of Warner, Resident JL, Resident KBE
Work Session 3.3 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	04-17-24	Develop Mitigation Action Plan for 2025-2029; TBD- Prioritize Mitigation Actions with Enhanced STAPLEE	HMC, CNHRPC, Resident JL
Work Session 3.4 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	05-01-24	Develop Mitigation Action Plan for 2025-2029; Next Steps; TBD- Prioritize Mitigation Actions with Enhanced STAPLEE	HMC, CNHRPC, United Church of Warner, Resident JL, Resident KBE
Work Session 3.5 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	05-08-24	Prioritize Mitigation Actions with Enhanced STAPLEE	HMC, CNHRPC, Resident JL, Resident KBE
Work Session 3.6 <i>Remotely held via Zoom Webinar and in-person at Warner EOC</i>	05-22-24	Prioritize Mitigation Actions with Enhanced STAPLEE; Optional: HMC to Revisit, Review & Revise Any Finished Plan Sections as Desired	HMC, CNHRPC, United Church of Warner, Sugar River Bank, Resident JL, Resident KBE
Meeting 4 <i>Remotely held via Zoom Webinar</i>	07-24-24	Review Draft Hazard Mitigation Plan Update 2024; Overview of Work Session 4 Tasks; Schedule Public Information Meeting	HMC, CNHRPC, Sugar River Bank, Resident JL
Work Session 4 <i>Remotely held via Zoom Webinar</i>	07-07-24	Review Draft Hazard Mitigation Plan Update 2024; Review Final Results for Community Survey for Haz Mit and Severe Weather Events; Interim Hazard Mitigation Plan Implementation 2025-2030; Prepare for Public Information Meeting; Review Plan Approval Process; Prepare for Select Board Adoption Meeting	HMC, CNHRPC, Sugar River Bank, Resident JL
Public Information Meeting <i>In person at Municipal Building</i>	08-28-24	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.	HMC, general public

Source: Warner Hazard Mitigation Committee Agendas, 2023-2024

For all meetings hosted remotely via Zoom, CNHRPC staff took a roll call during each meeting and the Town completed a meeting match timesheet for participants to document 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

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Mitigation Action Plan, completing the Enhanced STAPLEE Action Prioritization, etc. along with input from members of the public and guests. The Agendas are included in **APPENDIX C** of the Plan.

The specific meeting tasks are described in detail on the Agendas in **APPENDIX C** and in **Table 1.1**. CNHRPC staff facilitated the Committee Meetings and Work Sessions. Information required to complete the Agenda Tasks indicated above was collected by CNHRPC from any attendees present, including members of the public during discussions among attendees. The new and updated information was described in each Chapter under the **2024 Plan Update** section. Maps developed by CNHRPC using the ARCGIS platform were reviewed and updated by the Committee and guests.

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 and the **2023 State Multi-Hazard Mitigation Plan**.

OPPORTUNITY FOR PUBLIC PARTICIPATION

Several types of public participation were possible throughout the planning process. These ranged from attending the in-person and online Hazard Mitigation Committee meetings,

Public Outreach Strategy

Many individuals and agencies were personally invited to attend and participate in the Warner Hazard Mitigation Plan Committee meetings by email, personal discussions, through other Board meetings, and by phone call. Invitees included Town Boards and Committees, Town Departments, and Stakeholders such as Simonds School, Pillsbury Free Library, Warner Village Water District, United Church of Warner, Concord to Lake Sunapee Rail Trail, Mt. Kearsarge Indian Museum, American Legion, Magdalen College, Capital Area Public Health Network (CAPHN), Eversource, NH Homeland Security and Emergency Management (NHHSEM) Representatives, trails groups, local and area businesses, local area Emergency Management Directors, and others through general invitations. The online Severe Weather and Hazard Mitigation Survey yielded **100** responses.

The Hazard Mitigation Committee itself was comprised of Town Department staff and volunteers, including Emergency Management, Town Administration, Fire Department, Public Works Department, Police Department, Select Board, Conservation Commission, Warner Village Water District, Library, plus many of those invited above serving as Stakeholders. Other staff members or volunteers may have occasionally participated 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.warnernh.gov. Meetings were held remotely via the secure Zoom Webinar platform hosted by the Town and in person at the Warner EOC. The Town advertised by sending a mass email to the Town’s notification list, media, on the Town website, and posting flyers and meeting announcements at the Town Hall, Library, EOC, and Market Basket. Notifications or the Agenda were also placed on the Town bulletin boards. Copies of publicity for the Plan are included in **APPENDIX C**.

The Central NH Regional Planning Commission staff facilitated the Hazard Mitigation Committee meetings, guided the planning process, compiled new and old data, updated information, and prepared the 2024 Plan documents, Appendices, and Maps.

The draft **Hazard Mitigation Plan 2024** was presented at a specially noticed Public Information Meeting on **Aug 28, 2024** during a Select Board’s meeting to obtain additional public input. This meeting was publicly noticed on the Town website and calendar and on the Select Board’s Agenda. 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**.

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responding to the online survey, and attending the Public Information Meeting.

Public Invited to Attend Warner’s Hazard Mitigation Committee Meetings

Warner aimed for inclusive hazard mitigation planning process. One successful avenue was the online Hazard Mitigation and Severe Weather Survey where **100** responses were provided. Information on how the public can attend Committee meetings was included on the survey. Individuals, agencies, and Stakeholders were invited to participate in HMC meetings by email and personal invitation. Active citizens were engaged for most of the HMC planning process. The Town’s website, Town calendar, and social media pages initially promoted the meetings. The Committee meetings were held remotely using Zoom Webinar and in person (hybrid) at the Warner Emergency Operations Center.

Table 1.2

Meeting Invitations and Participation

HMC Invitations and Participation		
MUNICIPAL INVITEES	How Invited	Participation (see Also Table 1.1)
General Public	Town website. Meetings Calendar www.Warnernh.gov Zoom Webinar Library, Sugar River Bank, Market Basket. Paper surveys left at: Bank, Library, Food Pantry	Completed Online Surveys (100) Attended some HMC Meetings (see Table 1.1) Paper Surveys completed.
Town Boards (volunteer) Planning Board Conservation Commission Select Board	Appointed by Select Board. Received all HMC Meeting Emails	Hazard Mitigation Committee. Attended some HMC meetings (see Table 1.1)
Town Departments & Staff Emergency Management Fire Department Town Administration Police Department Public Works Department Building Inspection Health Officer Warner Village Water District	Appointed by Select Board. Received all HMC Meeting Emails	Hazard Mitigation Committee. Attended all HMC meetings (see Table 1.1)
Non-Municipal Local Stakeholders	How Invited	Participation
Simonds School / Kearsarge Regional School District	Received all HMC Meeting Emails	Responded to HMC member inquiries for information, may have submitted surveys. Participated in some HMC meetings (see Table 1.1).
Pillsbury Free Public Library United Church of Warner Sugar River Bank	Emailed Stakeholder invitation; , Received all HMC Meeting Emails	Participated in all HMC meetings (see Table 1.1)
Pine Rock Manor Magdalen College Mt. Kearsarge Indian Museum Kearsarge Area Chamber of Commerce	Emailed Stakeholder invitation; Emailed some Agendas (did not spam), Emailed Survey information	Participated in some HMC meetings (see Table 1.1). May have submitted surveys.

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HMC Invitations and Participation		
Friends of the Concord - Lake Sunapee Rail Trail American Legion	Emailed Stakeholder invitation; Received most HMC Meeting Emails	Responded to HMC member inquiries for information, may have submitted surveys.
Selected interested residents	Received all HMC Meeting Emails	Participated in most HMC meetings, may have submitted surveys.
Dimentech Madgetech	Emailed Stakeholder invitation; Emailed some Agendas (did not spam)	Did not attend meetings, may have submitted surveys.
Abutting Community EMDs	How Invited	Participation (No or type)
Andover EMD Bradford EMD Henniker EMD Hopkinton EMD Salisbury EMD Sutton EMD Webster EMD Wilmot EMD	Emailed Stakeholder invitation; Emailed some Agendas (did not spam)	One EMD participated in some HMC meetings (see Table 1.1).
Concord Monitor	Emailed Stakeholder invitation; Emailed some Agendas (did not spam)	Did not attend meetings
Regional & State Stakeholders	How Invited	Participation (No or type)
Central NH Regional Planning Commission	Contracted by Select Board	Facilitated Plan update on behalf of community, participated in all HMC meetings (see Table 1.1).
Capital Area Public Health Network	Received all HMC Meeting emails	Participated in some HMC meetings (see Table 1.1)
NH Homeland Security and Emergency Management	Received all HMC Meeting emails	Attended some HMC meetings (see Table 1.1)
Eversource	Received all HMC Meeting emails	Did not attend HMC meetings.

Public Input from the Hazard Mitigation Committee Meetings

The public notification is described in the Public Outreach Strategy sidebar. Members of the public who attended the HMC meetings are indicated in the **Acknowledgements** and by the Meeting Timesheets 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 **24** posted meetings or to contact Town Administration/Emergency Management Director for more information prior to the Select Board adoption of the Plan.

Public Input from the Public Information Meeting

The **Aug 28, 2024** Public Information Meeting (PIM) was conducted at a special evening meeting hosted by the Hazard Mitigation Committee after the draft **2024 Plan** was completed. Paper copies of the draft **Plan**, with its Appendices and Maps, were made available for public review in the Town Hall and on the

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Town website and at the Town Hall in advance of the meeting. The purposes of the PIM were to inform the public of the document’s completion, ask for final comment and input, update the attendees from the Select Board of the Plan’s development and approval process, and answer questions. Hazard Mitigation Committee members presented an overview of the draft **2024 Plan** to the public and took any Board and public comment and answered questions. No additional input was provided that modified the draft **Plan**. Draft PIM minutes are provided in **APPENDIX C Meeting**.

Public Input from the Community Survey

To obtain broad public input on hazard mitigation and severe weather events, an online community survey posted on Survey Monkey was developed in **November 2023** and remained open through **July 31, 2024**. Every person on the Town’s public email distribution list received notification of the survey, the Town website prominently published its link, as did Department social media. Paper copies of the survey were made available at the Sugar River Bank, Town Hall, Food Pantry, and Library, and patrons were assisted with explanations of the questions when needed. Volunteers input the completed paper surveys into Survey Monkey. A total of **100** responses was received from the community at large. Following the HIRA hazard list, the survey asked respondents seven questions:

➤➤ **Q1** Which roads, areas or water bodies are you most concerned about in Warner when storms or severe weather or other hazard events occur? Check all that apply.

Respondents were most greatly concerned about: Along the Warner River (51%). Over 20% of respondents identified other areas of concern: I-89 Exit 9 (29%), Kearsarge Mountain Road/Mt. Kearsarge (23%), I-89 Exit 8 (22%), and I-89 Exit 7 Davisville (21%). NH 103 West (20%), NH 103 East (20%). Also of high concern were Pumpkin Hill Road (19%), Damage to maintained trails and recreation fields/parks/Town Forests (18%), and varied Write-In Responses (16%). Over 10% of respondents identified other concerning areas: Tom’s Pond area (15%), Schoodac Road (15%), Depot Street/Chemical Lane/North Village Road Area (13%), and Collins Road/Newmarket District (10%).

➤➤ **Q2** How concerned are you about the following natural hazards, storms/severe weather events, or human/technological hazards impacting Warner within the next 5 years? (On an Extremely Concerned-Very Concerned-Moderately Concerned-Slightly Concerned-Not Concerned 1-5 scale)

Aggregated responses of Extremely Concerned + Very Concerned hazards indicated respondents were most concerned about Aging Infrastructure (56%), High Wind (55%), Excessive Heat (49%), Ice Storm (46%), Public Health (44%), and Long Term Utility Outage (43%). The aggregated lowest-rated Slightly Concerned + Not Concerned hazards were Earthquake (82%), Landslide (76%), Radiological Incident (68%), and Tropical/Post Tropical Storms (68%).

➤➤ **Q3** Natural hazards or severe weather can have a significant impact on a community but planning for or mitigating these events can help lessen the impacts. Planning projects

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may require Town funds as well as federal funds in addition to Town staff support and volunteer support. Please indicate how important you believe these local mitigation planning priorities are for Warner: (On an Extremely Important-Very Important-Moderately Important-Slightly Important-Not Important 1-5 scale).

The aggregated Extremely + Very Important top three mitigation planning priorities were to Protect Town Facilities and Operations (79%), Improve the Transportation Network (70%), and Enhance the Functions of Natural Features (70%). None of the priorities were lower than 54% of all responses, and several varied write-in responses were included.

- **Q4 & Q6** Can you describe any notable severe weather event/storm, disaster or other hazard incident you experienced in Warner? If yes, please provide brief comments on up to 2 events by describing what happened (What), the location (Where), the approximate month and year of the occurrence (When), and how (How) you and your household were impacted.

Fewer than 60 responses were provided to these two questions. The most frequently recalled events were Floods/Heavy Rains (16), Tornadoes (10), Snow and Ice (10), but Power Outages, Lightning, Drought and Windstorms were also mentioned. The locations occurred throughout town with no identifiable concentrations. Impacts included transportation disruption to/from homes, driveway washouts, downed trees, damage to structures from trees, winds and water, and electrical outages.

- **Q5 & Q7** How severe would you rate Event 1 & 2? (On an adjustable scale bar between 0-100, with 0-Not Too Bad/ 50-Bad/ 100-Worst in Memory).

Respondents provided a wide range of ratings for the events they recounted, averaging 58% on the scales.

- **Q8** In your household, has anyone recently completed any of the following preparedness or mitigation activities? Check all that apply.

Regarding mitigation and preparedness, respondents most frequently: Changed batteries in smoke or carbon monoxide detectors (77%), Removed hazardous trees at their home (61%), Installed a generator or secondary heating source (57%), Talked about what to do with household members in case of severe weather emergency or natural disaster (48%), and Kept an undisturbed, vegetated buffer on your property along ponds, streambanks, riverbanks and wetlands (46%). The lowest-rated activities selected by respondents, indicating a need for additional outreach to promote these areas, were: Researched disaster information online or obtained brochures on disaster public education (14%), Floodproofed or elevated home interior systems (12%), Attended disaster trainings or workshops (8%), Served on an emergency-related committee (8%), and None (3%).

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»» Q9 What are the best ways for you to receive essential information about storms, disasters and severe weather events in Warner? Please check your top 5:

Respondents preferred to learn about storms, disasters and severe weather by: Local Television WMUR (56%), Receive Information by Emergency Alert System or Reverse 911 (55%), National Weather Service Gray Maine (54%), Install Cellphone Apps like NH Alerts (47%), and Town Library E-Notification Newsletters (44%). The lowest-rated selections under 10% of all responses, indicating the least effective ways to receive storm notifications and updates, were: Church or Other Local Gathering (9%), Call Town Office at 603-456-2298 (8%), View Posted Notices at Town Offices (6%), School Notices/School Automated Calls & Texts (6%), Wellness Checks at Your Home (3%).

»» Q10 Please feel free to provide any other concerns or information related to severe weather, disasters, and hazard mitigation in Warner in the space below.

Only 14 of the 100 respondents added Q10 write-comments, so there were few common threads. Falling trees and tree maintenance and storm preparation were mentioned most frequently. However, each question of the survey offered additional room for write-in choices or comments. The summary of survey responses including all write-in comments are provided in **APPENDIX F COMMUNITY SURVEY**.

Public input from the **100** survey responses was used to confirm Town Department and operations priorities, and specifically informed the Town on how the public wishes to be notified during a disaster event. The natural hazards of greatest concern to the public, **High Winds, Ice Storms, Public Health, and Extreme Heat**, are being addressed in **8 MITIGATION ACTION PLAN**.

How Public and Community Input Was Incorporated into the Plan

Aside from the Community Survey responses and the Stakeholders attending the Hazard Mitigation Committee meetings, the general public showed more interest in updating the **Warner Hazard Mitigation Plan** than previous **Plan** update cycles. During periods of relatively few major weather events, emergency declarations, or disaster declarations, the public tends to not participate until they experience a significant event and want to affect change. It is difficult for New Hampshire communities including Warner to retain volunteers for their regular municipal committees. Volunteers are often available during the evening after their jobs have ended while Department staff, who hold the bulk of the update information needed for the **Plan**, are available during the daytime because their jobs require other nighttime meetings or calls. Town Department staff and others participating in the Plan update process are often Warner residents, and the participating volunteer Boards and Committee members are required to be Warner residents.

Survey responses were not directly incorporated into the Plan, but the results ran in tandem with activities underway. Although the broad prioritization of hazards from the public were slightly different than the detailed HIRA ratings in **CHAPTER 4** completed by the Committee, the Town of Warner works to combat the effects of seasonal climate variation (wind, rain, storms, ice, flood, drought, winter and

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resultant electricity losses) through staff Department and volunteer Committee work. The Survey results were used to bolster Department priorities but did not directly change the Plan’s content. For instance, the Public Works Department upgrades culverts and rehabilitates roads washed out by flooded areas. Eversource Electric maintain trees along the utility rights of way including roads to reduce the risk of tree debris during winter, ice or wind events. The Survey helped both understand the public’s perspective, solidifying the work in progress. From the Emergency Management perspective, some public education and outreach Actions were developed based on their Survey responses.

Anyone who participated in developing the **Hazard Mitigation Plan 2024**, including the members of the general public, Hazard Mitigation Committee, Town staff, Town volunteers, Stakeholders, and guests, attended meetings and worked on the following group tasks as noted in the Agendas **Table 1.1**, including: **Goals and Objectives (CHAPTER 3)**, **Hazard Identification Risk Assessment** and identification of new hazard events since the last Plan (**CHAPTER 4**), **Critical and Community Facilities Vulnerability Assessment (CHAPTER 5)**, **Capability Assessment (CHAPTER 6)**, identifying the **Status of Prior Actions (CHAPTER 7)**, developing **Mitigation Action Plan** from problem statements, new ideas, and deferred Actions, and completing the **Enhanced STAPLEE Action Prioritization (CHAPTER 8)**. These primary tasks are the basis upon which the **Hazard Mitigation Plan** is founded, about **75%** of the document. These sections are found in the **TABLE OF CONTENTS**.

COMPLETION OF THE PLAN STEPS AND DATES

On **Aug 28, 2024**, 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 **Mon xx, 2024**, 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 from FEMA, also known as conditional approval.

On **Month xx, 2024**, Warner received an **Approved Pending Adoption (APA)** notification from FEMA. 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 Select Board, is submitted.

On **Month xx, 2024**, the Select Board **adopted the Hazard Mitigation Plan Update** for the Town at a duly noticed public meeting. Copies were made available at the Town Hall 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, 2024**, Warner received a **Letter of Formal Approval** from FEMA confirming the latest Plan approval effective for the next 5 years. The next Hazard Mitigation Plan update is due five (5) years from this date of approval, on **Month xx, 2029**.

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Final Plan Dates

The following is a summary of the required dates which guide the adoption and update of the **Warner Hazard Mitigation Plan**. Included is the history of the Plan approvals and lapsing dates as shown in **Table 1.3**.

**Table 1.3
Warner’s Hazard Mitigation Plan Adoption History**

Year of FEMA-Approved Hazard Mitigation Plan	Adoption by Warner Select Board	NHHSEM/ FEMA’s Formal Approval	Plan Lapse
Original 2003	10/28/03	12/05/03	12/05/03
Update 2008	11/25/08	11/26/08	11/26/13
Update 2014	01/21/14	03/10/14	03/10/19
Update 2019	06/11/19	06/25/19	06/25/24
Update 2024	xx/xx/25	xx/xx/25	xx/xx/30

Source: Plan Adoption History

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2 COMMUNITY PROFILE

It has been over seven years since the last Plan was written, with some basic information available from the newest **2020** decennial US Census beginning in mid-2021. The best available new data has been used in this Chapter to portray the population, housing, and overall demographic picture of present-day Warner. 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**. New sections have been added on Social Vulnerability, Climate Resilience, Climate Change, and the Hazard Vulnerability section from **4 HAZARD RISK ASSESSMENT** has been moved to this chapter.

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 Warner is located in western Central New Hampshire within Merrimack County near the edges of Sullivan County and Hillsborough County. The Town is bordered by the Towns of Sutton, Wilmot, Andover, and Salisbury to the north, the Town of Webster to the east, and the Town of Bradford to the west. To the south, Warner is bordered by Hopkinton and Henniker.

State highway NH 103 bisects the Town in an east-westerly direction, following parallel to I-89. NH 114 traverses a small section of the western corner of Warner, and NH 127 in Davisville, a village of Warner and Hopkinton, does the same at the eastern edge of the community. The Town is directly accessed by I-89's three on-off ramps, Exit 7, Exit 8 and Exit 9, all of which access NH 103. A significant business center is located at Exit 9 in Warner. A corridor of the former Concord and Claremont railroad are located in Warner, along with the existing, popular Warner Rail Trail, which begins at Bagley Bridge over the **Warner River** for 0.5 miles. The West Joppa Rail Trail is another completed trail 0.3 miles long which is awaiting connection.

Warner contains the Mink Hills which is a high-elevation area shared with Bradford and Henniker, encompassing unmaintained Town roads, historical sites, conservation lands, plant and animal communities, and recreation areas. The Warner River is an essential identity to this small town and was recently admitted to the NH Rivers Management and Protection Program. The Town boasts a significant arts community and hosts the annual renowned Fall Foliage Festival along Main Street. Mount Kearsarge

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is a destination for hikers year-round. The Town is a member of the seven-Town Kearsarge Regional School District. The Town of Warner is a rural but up-and-coming growing community of about 2,937 people with distinctive New Hampshire characteristics.

Amenities such as the growing Concord - Lake Sunapee Rail Trail, Sunapee Ragged Kearsarge Regional Greenway, other recreational trails, Mount Kearsarge and Rollins State Park, the Mink Hills area, direct access to Interstate highways, the Warner River and a bustling Main Street attract residents and visitors. Interstate 89 Exit 9 area contains commercial stops, Market Basket, Dunkin' Donuts, McDonald's, NH State Liquor Store, Irving Circle K provide services to commuters. Warner's easy accessibility, excellent school system, rural character, local agriculture, forests, Warner River and business expansion attraction have made the Town a prime location for residences and businesses alike.

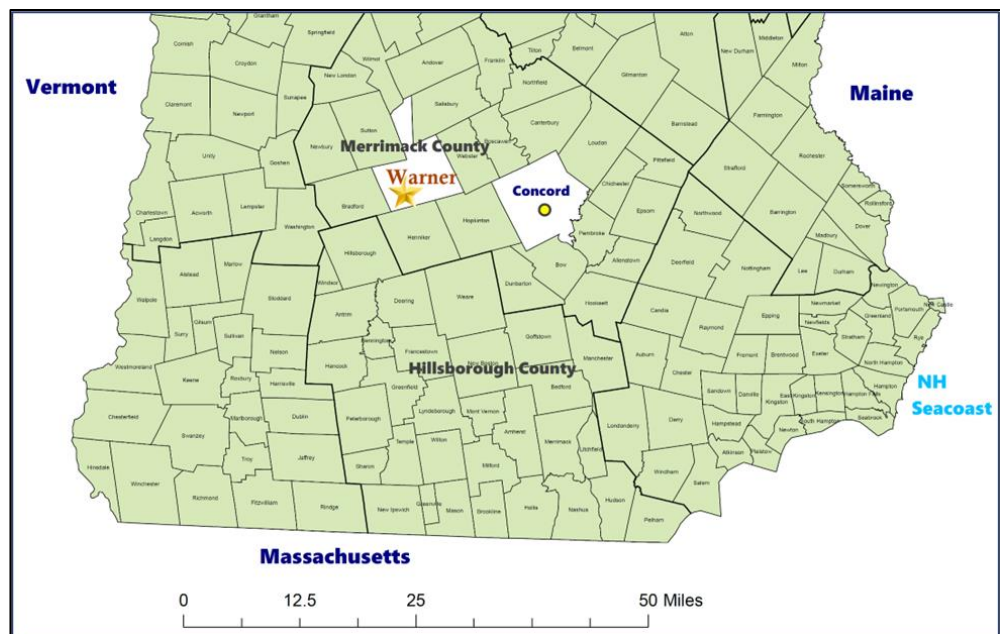
WARNER'S LOCATION IN NH

Merrimack County in which Warner resides is often referred to as a valley as its borders are higher in elevation than its middle communities. Warner with Mount Kearsarge forms the northwestern edge of the valley. Concord and Franklin are the 2 cities in the County. Merrimack County is surrounded on all sides by other NH Counties, Hillsborough, Sullivan, Belknap, Rockingham, Strafford, and Grafton. Most but not all communities in Merrimack County comprise the Central NH Planning Region along with 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 although Warner is geographically closer to Vermont than the Seacoast or Massachusetts. Warner's context within

Merrimack County and the State of New Hampshire is shown in Figure 2.A.

Figure 2.A Warner in the State



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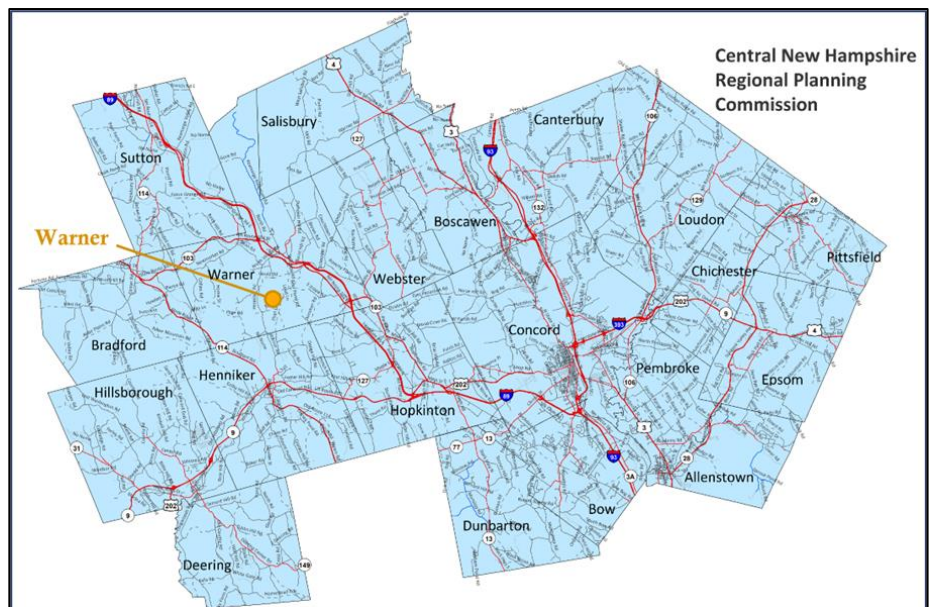
WARNER'S LOCATION IN CENTRAL NH

The Town of Warner 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 State's capital of Concord is about 17 miles from the Warner Town Hall in a straight line, or a bit further along Interstate 89. Warner's historically rural identity, commuting accessibility, available services and transportation, and river access could ensure regular future development within this lovely community. Warner is growing as a "bedroom" community to Concord and Lebanon with traffic concerns and development at Exit 9. With easy access to I-89, Vermont, Keene, I-93, Massachusetts, and the Seacoast, Warner may experience more commercial and residential expansion in the future.

The **Blackwater River** (Salisbury, Webster, Warner) 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, and Hopkinton until its confluence with the **Merrimack River** in Boscawen/Penacook (Concord). The **Contoocook River** and the **Merrimack River** effectively bisect the region into three sections. The **Soucook River** originates in Belknap County and flows south through Loudon along the Concord/Pembroke border and enters the **Merrimack River**. The **Suncook River** likewise originates in Belknap County, flowing south through Pittsfield, Chichester, Epsom, Pembroke, and Allenstown until it too converges with the **Merrimack River** in Bow/Hooksett. The large **Merrimack River**, originating in Merrimack County in Franklin at the confluence of the **Pemigewasset River** and **Winnepesaukee River**, is the Central NH Region's largest watercourse and contributes to wide, sandy floodplain areas often utilized for agriculture. The **Merrimack** flows through southern New Hampshire and northern Massachusetts and empties into the Atlantic Ocean at Newburyport, MA.

Figure 2.B
Warner in the Central NH Region

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 travels north-south and US 4/202 traverses in an east-west direction. Warner hosts NH 103, a very busy local highway used by large trucks and commuters which parallels I-89 from Hopkinton through Warner into Sutton, before veering west into



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Bradford. Dozens of State highways crisscross the entire region. Warner can be easily accessed from Exits 7, 8, and 9 off I-89. A map of the Central NH Region in which Warner is situated with the region’s major routes is displayed in **Figure 2.B**.

Population and Housing Growth

The latest *Warner Master Plan 2011* was adopted in **May 2018** and amended in **August 2018**, developed by the Planning Board with assistance from the CNHRPC. The Planning Board has the goal of rotating Chapter review and revision annually. Recent draft Chapters developed include the Housing Chapter. The Master Plan Chapters include: Demographics, Housing, Economic Development, Community Facilities, Transportation, Natural Resources, Energy Resources, Existing Land Use, Future Land Use, and Implementation. 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 Warner. The **Hazard Mitigation Plan 2024** could eventually be adopted as an Appendix or a Chapter to the *Master Plan* by the vote of the Planning Board.

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 2.1**, Warner’s population and housing boomed during the **1970-1980** decade (**+36%** people, **+25%** homes), with a slight dip into the **1980-1990** decade, and increasing again in the **1990-2000** decade (**+23%** people, **+18%** homes). Beginning with the **2000-2010** decade (**+3%** people and **+10%** homes), population and housing trends slowed dramatically; this period included a series of significant natural disasters and an economic recession. **Table 2.1** displays the population and housing growth comparisons.

Table 2.1

Overall Population and Housing Growth Trends in Warner, 1970-2020

Growth	Population	Net Change		Housing Units	Net Change	
		#	%		#	%
1970 Census	1,441	N/A	0	720	N/A	0
1980 Census	1,963	522	36.2%	899	179	24.9%
1990 Census	2,250	287	14.6%	1,039	140	15.6%
2000 Census	2,760	510	22.7%	1,228	189	18.2%
2010 Census	2,833	73	2.6%	1,358	130	10.6%
2020 Census	2,937	104	3.7%	1,360	2	0.1%
Total Change from 1970 – 2020 Census	---	1,496	103.8%	---	640	88.9%
2022 ACS	2,955	+18	---	1,387	+27	---

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 2019 Group Quarters. US Census 2020 Population, American Community Survey (ACS) 2018-2022; NH BEA 2022 Current Estimates, 2023

CHANGES IN POPULATION AND HOUSING TRENDS SINCE THE LAST PLAN (2019)

Since the **2019 Plan**, the new **2020** Census population and housing unit figures calculated growth of **+4%** people and **+<1%** housing units between **2010-2020**, the slowest housing growth period in **50** years. Similar trends are found throughout the Central NH region, although a factor of the **2020** figures could be the result of inaccurate Census taking and calculation.

Population and Housing Evaluation

Using the available Census data, in **1970** Warner had a population of **1,441** and **720** housing units. The Town grew by **+1,496** people (by **104%**) and **+640** housing units (by **89%**) using Census counts from **1970-2020** as shown in **Table 2.1**. Over this 50-year period, Warner grew steadily each decade until **2010**. Between **2010-2020**, the Town's population increased by **+104** people while during the same time housing units increased by **+2** units which is thought to be a Census error (the figure should be larger).

Overall, population growth trends are declining from the **2010-2020** decade, while the number of new housing units are similarly declining. The overall dual population and housing growth rates by percentage in Warner since **1970** are smaller than other than the similar low-population communities in the Central NH region.

Over the **1970-2020** period, the number of people living in each housing unit has low and consistent, from its high of **2.2** people per housing unit in **1980** to **2.3** people per housing unit in **2020**. Interestingly, **1970** had its lowest number of people per housing unit at **2.0**. Overall, these numbers are lower in comparison to other low-population Central NH Region towns and likely indicate an aging population living together and fewer new families living in Town.

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 Warner encompasses a total land area of **55.2** square miles (**35,352** acres), an additional **0.23** square miles (**150** acres) is water area (**35,502** total acres, or **55.5** total square miles). Over the **50-year** period between **1970-2020**, the data for population density in Warner is displayed in **Table 2.2**.

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Table 2.2
Population Density in Warner, 1970-2020

Municipality Size		Persons per Square Mile					
Land Acreage	Land Area in Square Miles	1970	1980	1990	2000	2010	2020
35,352	55.2	26	36	41	50	51	53

Sources: *Table 2.1, NH Office of Planning and Development GIS acreage calculations, 2013*

From **Table 2.2**, the overall population density between **1970** and **2020** increased from **26** people per square mile in **1970**, to an estimated high of **53** people per square mile in **2020**. Warner is a geographically moderately-sized community in the Central NH Region at **55.2** total square miles, including water acreage. Warner has a comparatively low number of people per square mile, as compared to other geographically moderately-sized Central NH Region communities, and communities statewide.

Precise changes since the last **2019 Plan** cannot be measured with the new **2020** Census figures, although as noted, comparisons between the decades can be made.

CHANGES IN DEVELOPMENT SINCE THE LAST PLAN (2019)

Warner’s development is slow, with most development occurring at the I-89 Exit 9 area on commercial real estate. New housing is expensive (about **\$420,000**) and often acquired when subdividing a single parcel into a new residential lot. This can occur anywhere supported by zoning. The ability for homeowners to construct an accessory dwelling unit (ADU) is appealing although the cost is prohibitive for most. Main Street is the community road accessed by Exit 8 and Exit 9, and where most new development, commercial or residential, is expected to occur within the next decade. This low-lying area is along the Warner River corridor and is the most populated section of Warner. Kearsarge Mountain Road is highly developed, vulnerable to downed trees and utility outages, and might also serve as a locus for future residential development with its proximity to Exit 9 and the State Park.

These are the largest new developments since the **2019 Plan**:

- Commercial – New Dunkin Donuts building at Exit 9.
- Commercial- Warner Stone landscaping at Exit 7.
- Residential - KCLT Foster Farm is a farmhouse renovation with plans to purchase more property. More than 1 family living in unit, sustainable wine growers, regenerative agriculture.
- Residential (2023) – About 6 new single family homes throughout Town, 3 on Poverty Plains Road.
- Workforce Housing - At Exit 9, a 24-unit workforce apartment building did not pass Planning Board approval in 2022.

Newly developed areas can contain businesses, restaurants, industry, services, Town of Warner services, and neighborhood roads. Residential land uses are scattered throughout the community along major

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routes like NH 103 and in the more rural areas like the Mink Hills. Technological hazards like **transportation accidents** or natural hazards like **winter storms, freezing rain, snowmelt and flash floods** may be the greatest threats to the population living along major transportation routes or backwoods Class V and VI roads or along the **Warner River**.

New Construction

Table 2.3 displays Warner’s estimated new home and new building construction permits issued by the Building Inspector between **2018-2023**. During this **6-year** period, a total of **43** new construction permits for homes and housing units have been issued, but not necessarily built. For counts of newly developed units, data on the number of certificates of occupancy issued would be helpful for future **Plans** to understand what was actually constructed.

Table 2.3
New Construction Permits Issued by Building Type, 2019-2024

Building Type	2019	2020	2021	2022	2023	2024*	2019-2024 Totals	2013-2018 Totals (Last Plan)
Single Family Homes	6	7	6	5	6	5	35	20
Multi-family Homes	0	0	0	0	0	0	0	0
Manufactured Homes	1	0	0	0	0	0	1	2
Non-Residential Buildings	0	0	0	0	1	1	2	9
Accessory Dwelling Units	0	5	0	0	0	0	5	n/a
Totals	7	12	6	5	7	6	43	31

Source: Warner Building Permit Reports *2024 YTD 07-01-24

From **Table 2.3**, **35** permits were issued for new single-family homes, with **5** permits for new accessory dwelling units, over the last **6** years. One (**1**) new construction permit for manufactured homes and **0** multi-family homes were issued during the period. Two (**2**) new commercial/ industrial/ exempt non-residential permits were issued. The most active year for new construction permits within the Town of Warner occurred in **2020**, with a total cumulative count of **12**.

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, Warner issued fewer new construction permits between **2018-2024**.

Comparing the data to the last **2019 Plan**, Warner issued more building permits between **2019-2024 (43)** than between **2013-2018**, when **31** total permits were issued. As was the case with the most recent period, there was a unique emphasis on single family permits (**20**), specifically, during the previous Plan period.

Land Use and Zoning

According to NH Office of Planning and Development’s geographic information system (GIS) calculations, Warner has a total land area of **35,352** acres, or **55.52** square land miles. In addition, **150** acres (about **0.23** square miles) is water area, to total **35,502** Town acreage (**55.5** square miles total) within Warner’s political boundaries. The GIS land acreage figure is lower than the most recent **MS-1 2024** assessing reporting calculation of **37,151** total acres for the Town. 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, Warner is considered a geographically small-sized community in terms of land area and contains low population and housing figures. Warner’s proportion of residential land is less than most towns in the Central NH Region.

CHANGES IN LAND USE SINCE THE LAST PLAN (2019)

The total number of Warner parcels is **1,980** in **2024**, up from **1,847** in **2019**, an increase of **+133** parcels from **2019**. This increase is not reflected in the number of new construction permits, so the increase might be from subdivisions not yet constructed, an inaccurate count in **2019**, or change in assessing systems.

Land Use Types and Acreage

Table 2.4 provides a snapshot of the Town’s **2024** land use acreage from the Town’s assessing database. Land use categories were combined for ease of summary. Because the Total Acres used when calculating land use are far higher than the actual Town acres – since often land is classified as more than one type – the most accurate measurement would be to compare the percentage of **Land Use Categories** in Warner.

From **Table 2.4**, Forest Land (without stewardship) is the most extensive land use type, comprising **41%** of the Town’s land area; and when combined with the acreage of Forest Land *with* stewardship, accounts for well over half of it. Residential land of all types, accounts for about **20%** of land use. Exempt land use is approximately **18%**. Smaller land uses in Warner are Industrial/commercial (**2%**), Utilities (**4%**), Farmland (**2%**), and Utilities with **0%** land use. Unproductive land and wet land (combined) comprise Less than **2%** of the total land area.

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Table 2.4
Land Use Acreage, 2024

Land Use Category 2024	Acres	% of Town 2024	% of Town 2018
Residential	3,846	10.4%	13.3%
Residential Vacant	2,584	7.0%	7.3%
Residential Mobile Home	131	0.4%	0.4%
Residential Apartments	697	1.9%	1.4%
Residential Condo	1	0.0%	---
Commercial Improved	442	1.2%	0.7%
Commercial Vacant	282	0.8%	0.8%
Utilities	5	0.0%	0.0%
Exempt	6,615	17.8%	10.0%
Farm Land	822	2.2%	2.4%
Forest Land	15,267	41.1%	43.4%
Forest Land with Stewardship	5,814	15.6%	16.1%
Unproductive	465	1.3%	1.3%
Wet	180	0.5%	3.0%
Totals	37,151	100.0%	100.0%

Source: Assessing Database, Jun 2024

The land use changes represented in **Table 2.4** between **2018** and **2024** display how land is now classified by landowners and assessing agencies. Compared with the **2018** Land Use percentages, the largest differences are an increase of Exempt land (+8%), and a decrease of Residential (-3%). Many differences are accounted for by the more accurate assessing system.

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CHANGES IN ZONING SINCE THE LAST PLAN (2019)

The Zoning Ordinance has sections amended every year at the annual March Town Meeting and is used and applied by the Planning Board and designated Building Inspector.

Warner Zoning

The perspective of the Town’s Zoning Districts offers another way to view how the land is utilized within Warner in **Table 2.5**. The Zoning Ordinance includes a Table of Uses indicating what types of facilities are permitted in which District and an Index of Permits/Officials. A Schedule of Amendments tracks the general annual revisions to the Zoning Ordinance. Several commercial, business and residential districts fall within Warner, over which floodplain and groundwater protection overlay districts apply further regulation.

Table 2.5
Warner Zoning Districts, 2024

Zoning District	Abbreviation	Acreage
Village Residential District	R-1	362
Medium Density Residential District	R-2	2,688
Low Density Residential District	R-3	7,670
Open Conservation District	OC-1	10,611
Open Recreation District	OR-1	13,177
Business District	B-1	26
Commercial District	C-1	732
	Total	35,266
Zoning Overlay District	Abbreviation	
Floodplain Development	---	
Warner Intervale Overlay District	INT	
Groundwater Protection Overlay District	GPD	
Workforce Housing Overlay District	---	
Other Zoning Ordinances pertaining to use of land		
Wireless Telecommunications Ordinance		
Sign Regulations		
Manufactured Housing		
Open Space Development		

Source: Town of Warner Zoning Ordinance, March 2024

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The content of the Warner Zoning Ordinance undertakes multiple small changes annually to revise, add new, tighten and recodify zoning regulations. Changes since 2019 include: adding a new Groundwater Protection Overlay District to the Zoning Ordinance and work to review clarify many of the existing ordinances. Many volunteer Committees are working on future changes, including the Housing Advisory Committee.

The Planning Board website at <https://warnernh.gov/departments/planning> displays the ordinances, regulations, fees, and proposed zoning amendments governing the use of land.

Town Building Codes and Regulatory Protections

More than zoning helps to keep the Town resilient to new building and (re)development. The Town has a Planning Office with staff people assigned to assist with planning, economic development, and building needs. There is a designated (volunteer) Building Inspector position overseen by the Select Board and Town Administration. Short and long-range planning documents provide guidance and activities are regulated under State Building Codes and Town Subdivision and Site Plan Review Regulations. These codes and regulations mean Warner businesses, residents and visitors are safer from the dangers of severe weather and natural disasters, including flooding, high wind, and earthquake events.

**Table 2.6
Warner Building Codes and Regulatory Protections, 2024**

Regulation	Date	Who Oversees
Master Plan	May 2011, amended 2018, Housing Chapter drafted June	Planning Board
Subdivision Regulations	Nov 2023	Planning Board
Site Plan Review Regulations	Nov 2023	Planning Board
Zoning Ordinance	Mar 2024, updated annually	Planning Board
Capital Improvements Program (CIP)	Nov 2023, CIP 2024-2029	Planning Board
State Building Code- International Building Code (IBC) 2018. Includes Residential, Commercial, Plumbing, Electrical, Energy	State adopted in 2022, so did Warner	Building Inspector
NFPA 1 Fire Inspection Code 2018	State adopted in 2022, so did Warner	Fire Department
NFPA 101 Life Safety Codes Occupancy Inspections	State adopted in 2022, so did Warner	Fire Department

Source: Capability Assessment, Chapter 6

Warner has many Town Ordinances (or Policies) that are not land-use based. Overseen by the Select Board, the ordinances and regulations include parking, plowing, sidewalks, and more that are immediately applicable to all who fall under its definitions. They can be accessed here at <https://warnernh.gov/departments/selectboard>, <https://warnernh.gov/departments/building> and other

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Department/Board pages. **6 CAPABILITY ASSESSMENT** contains the full list of plans, codes, policies, SOPs, etc.

FUTURE DEVELOPMENT IN WARNER 2025-2029

Few known residential developments will be brought before the Planning Board for review and approval in the near future, but commercial expansion of Exit 9 is occurring rapidly. This easily accessible area draws people from the area to Market Basket, Dunkin Donuts, McDonald's, Aubuchon Hardware, and the gas stations. Accessing NH 103 and Downtown Warner, commuters are seeking access to services or visiting Main Street businesses before traveling home.

According to Zillow, the **2024** cost of a home in Warner is about **\$420,000**, up nearly **7%** from **2023**, while other reports range higher or lower. Through the 2024 Warner Housing Advisory Committee Survey, people who live in Warner want to age in place but may be priced out of their homes. Residents have nowhere to go when they sell their homes because of the lack of housing stock. Interest rates are very high to purchase another home. Fixed income residents find it hard to stay in their homes with rising taxes, insurance, utilities, upkeep and associated costs. The next generation cannot afford to purchase their own homes in Warner, nor rent homes. A potential solution is accessory dwelling units (ADUs) to single family homes, formerly known as an "in-law apartment." Growing families can live on the same lot as parents and grandparents, which can have significant economic and social advantages with multiple generations. Existing homes and land cost too much to afford and property taxes are difficult to maintain.

Most of the Town's existing roads and homes are located in remote locations. Warner is accessible by I-89 and three interchanges leading to Concord, Manchester, Boston, Lebanon, Vermont and the Seacoast and NH 103. Most of the land that can be easily and affordably constructed for residential homes has already been built or is used for agriculture. Much of the future development in Town will be commercial and industrial, building on the existing base. A solid tax base is much desired by the Town.

Warner can absorb more in-migration as the economy stands with more residential development, which is an undesirable housing option according to the 2024 Housing Survey. Existing residents are aging but have few housing options. Some people in Warner work from home. Because of topography, cellular and radio communications do not cover large areas of Town and consistent internet service is difficult to receive. This again raises the need for more and better quality on internet, cellular, and VOIP services. Technological infrastructure stress requires upgrade to meet demand.

Future subdivisions are anticipated along existing Class V roads and large lots. Developers could be seeking space to build while large lot landowners look for an easy way to generate cash, perhaps because they are unable to age in their existing homes. Accessory dwelling units (ADUs) are anticipated to increase, which will naturally expand the capacity for enabling the seniors to age in place, while in time becoming rental units that will enable singles, couples or small families to live in Warner. Some ADUs are generational while others are a source of rental income for the single family homeowner.

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Since the easily developable land in Town has already been built or subdivided, future developments may occur near **wetlands** or **steep slopes**, or in-fill development between Exits 8 & 9 on Main Street. Kearsarge Mountain Road and its side roads have an extraordinary number of homes, much is served by the Village Water Precinct, and there may be room for further growth. **Floods, landslides, erosion, and fires** could occur in these potential residential areas. **Severe winter weather, storms and wind events** on hilly locations will bring trees down on roadways, interrupt **power and communication** services and will **flood** ditches and **wash out** roads.

Many remaining parcels keep 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. The existing agricultural operations should be preserved to maintain traditional beloved farming rural character. Conservation land for land trust management is preferable by the Town especially along the **Warner River** or Mink Hills and existing conservation lands.

When developments come before the Planning Board, potential hazards including **flooding, fire, traffic accidents, and evacuation** are regularly considered. A Technical Review Committee and the developers should try to solve the problems before a project is brought to the Planning Board to be 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 change, 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 community remain **wildfire, flood, wind events, winter events, 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. New (or replacement) buildings and infrastructure and potential future development appear in **APPENDIX A Critical and Community Facility Vulnerability Assessment**.

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Social Vulnerability and Equity in Warner

According to the US Census’ American Community Survey (ACS), Warner seems to contain fewer socially vulnerable or underrepresented populations as compared to Merrimack County and the State of New Hampshire as a whole yet there are many socially vulnerably populations in Town. Risk assessments can be done by reviewing Census data and ACS figures over time for median income, gender, age groups, renters, people with limited English proficiency, racial and ethnicity changes in Town.

Reviewing the NH Department of Health and Human Services’ Social Vulnerability by Town comparisons can be helpful in quite determining social risks and vulnerabilities. This examination uses existing Census and American Community Survey Data to extract comparisons for each community. Yet, social and demographic data that are not counted (like US Census population counts) are sampled – a selection of the population is invited to complete the survey and those who return the surveys have their aggregated data used. This sampling method leads to large margins of error, and the data cannot be a statistically significant accurate representation of actual conditions. Without actual count data, the ACS is considered the baseline information usable for most purposes. No newer data is available through NH WISDOM sources.

Evaluations of Warner’s social vulnerability data comparisons to the percentages of Merrimack County and New Hampshire are provided in **Table 2.7**.

Table 2.7

Warner’s Change Social Vulnerability Index by Census Tract, 2013-2021

Social Vulnerability Index Category	Census Tract Dataset	Town 2013-2017	Town 2017-2021	Merrimack Cty 2017-2021	NH 2017-2021
Household Composition/ Disability	Children under 18	19.8%	18.5%	19.1%	19.0%
	Disability age 5 and older	15.4%	15.1%	14.3%	13.3%
	Elderly age 65 and over	18.1%	20.4%	18.4%	18.2%
	Single parent, % of households with children	25.4%	39.7%	29.1%	30.3%
	Population in group quarters	5.0%	4.9%	4.2%	2.9%
Housing/ Transportation	Large apartment buildings 10+ units	0.8%	6.5%	9.7%	10.2%
	Mobile Homes, % of housing units	7.2%	4.8%	6.2%	5.4%
	No vehicle, % of households	1.3%	6.0%	5.3%	4.7%
	Renter occupied, % of housing units	23.3%	34.4%	26.8%	28.4%
	Commute time greater than 35 minutes	31.6%	38.7%	24.9%	25.7%
Race/ Ethnicity and Language	Total Black, Indigenous and Persons of Color; Hispanic or non-white race	3.7%	8.7%	8.4%	11.1%
	Limited English proficiency age 5 and over	0.2%	0.0%	0.7%	1.0%
Socioeconomic Status	Education age 25+ without high school diploma	7.4%	6.8%	6.4%	6.4%

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Social Vulnerability Index Category	Census Tract Dataset	Town 2013-2017	Town 2017-2021	Merrimack Cty 2017-2021	NH 2017-2021
	Health insurance, <65 years without	7.4%	4.1%	6.8%	7.1%
	Income per capita (inflation adjusted to most recent year of 5-year est)	\$35,308	\$37,837	\$40,054	\$43,877
	Median household income	\$75,195	\$71,346	\$82,457	\$83,449
	Population living below federal poverty level	7.0%	8.8%	7.0%	7.4%
	Household received Food stamps/SNAP in last 12 months	7.0%	8.3%	7.4%	6.1%
	Unemployed, age 16 and over seeking work	1.3%	1.6%	3.6%	3.8%

Source: [https://wisdom.dhhs.nh.gov/wisdom/dashboard.html?topic=social-determinants-of-health&subtopic=social-determinants-of-health&indicator=social-vulnerability-index-\(svi\)](https://wisdom.dhhs.nh.gov/wisdom/dashboard.html?topic=social-determinants-of-health&subtopic=social-determinants-of-health&indicator=social-vulnerability-index-(svi))

Many observations made by the Hazard Mitigation Committee do not correlate with the most recent social vulnerability ACS (sampled) figures. Some of this general observation can be due to the older data in NH WISDOM, but which is the most recent available.

By 2024, with the high cost of housing in Warner, renters, single parents and seniors can get priced out of the market. In general, Warner has much higher median household incomes, more children under 18, fewer elderly over 65, fewer renter occupied units, and far fewer single parent households than Merrimack County and the state averages. Some interesting facts from Table 2.7 and the HMC:

- There is **no public transportation in Warner**, no taxi or paid transportation available. Lyft and Uber might be available.
- The Food Pantry at the Old Graded School Building/Warner Community Center serves an average of 50-60 households from Warner annually on a weekly recurring basis.** They have seen an increase in the number of homes’ social status negatively changing due to crises such as death, divorce, abuse, fire.
- Warner is aging**, with fewer young people than previously and a larger percentage of elderly residents than the state as a whole. This could create issues with worker shortages, an increase in economic vulnerability as people grow too old to work, and the need for senior-appropriate housing and walkable neighborhoods as seniors grow too old to drive.
- Warner has a higher percentage of single-parent households** with children than the state as a whole and an increase over time, which creates demand for childcare, as well as an increase in single-earner households, vulnerability based on income, and demand for lower-cost housing and welfare services such as food.
- Warner has a higher percentage of households without cars** compared to the state and Merrimack County. and this number has gone up in recent years. The HMC does not feel the 6% is accurate, however. If true, this can lead to increases in a demand for (or interest in) walkable or bikeable neighborhoods for these households, as well as a demand for transportation services (perhaps those aimed at seniors). As the main source of groceries in Town (Market Basket) is in a commercial area distant from walkable neighborhoods, this can create issues with getting food for

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these households, and could correlate with a demand for Meals on Wheels for seniors, an interest in grocery delivery services, and the need for an alternate place to buy food within the Village (the Warner Public Market will be re-opening in the Village in April, but charges higher prices than Market Basket). This also suggests that the Food Pantry and other social services should be located within the walkable areas of the Village, rather than in an area accessible by car. The United Church of Warner has about 40 YouTube views per service, which might be indicative of changing demographic needs.

- Warner has a higher percentage of renters** compared to the state and Merrimack County. The HMC does not feel the 34% is accurate, however; there have not been any new rental units constructed other than ADUs. If true, this number has increased over time, leading to increased vulnerability when landlords require renters to move, sometimes with minimal notice. Not owning a home also makes it more difficult for people to acquire equity and build wealth over time, making it difficult for them to advance economically.
- A larger % of Warner residents have commute times greater than 35 minutes (39%)** compared to the state and Merrimack County. The HMC considers this could be true. Some form of public transportation connecting Warner to Concord and/or New London could lessen the impact should these residents lose their vehicles.
- Warner has a lower median income** compared to the state and Merrimack County. The HMC feels the median income as sampled should be closer to the County average. Fixed incomes of over 65 results in limited ability to be flexible to increased costs. The economy is in upheaval. Some residents may be more vulnerable to economic upheavals, increased housing prices, and increased taxes. This also correlates with Warner having a higher percentage of people below the poverty line, and a higher percentage on food stamps.

In addition to apartment buildings and accessory dwelling units of single family homes, some multi-family housing options are available to Warner’s socially vulnerable residents include:

Pine Rock Manor Assisted Living [~70 beds]
Pleasant Lake Estates Manufactured Homes [~33 homes]
North Ridge (Kearsarge Elderly Housing Inc) [~35 units]
Numerous 4+ unit apartment buildings

There are seasonal campgrounds/homes at Pleasant Lake, Latvia Lane/Lake Massasecum, and at Tom Pond. Vulnerable populations are particularly susceptible to **evacuation problems**, **public health** issues, **human** and **technological** hazards, as well as **all the natural hazards**. See **5 CRITICAL AND COMMUNITY FACILITY VULNERABILITY ASSESSMENT** for a more complete discussion.

EQUITABLE COMMUNITY ACTIVITIES AND RESOURCES SINCE LAST PLAN (2019)

The Town has taken many steps to become more friendly to underrepresented populations.

- ➔ The 2011 Master Plan recommends **implementing a sidewalk between the Exit 9 Intervale and the Village**, though it was voted down at the 2023 Town Meeting. This project would assist those without vehicles in getting to Market Basket for groceries, or between their homes and the Village for services, especially during the winter when snow is piled alongside the road. The Planning Board will try again.
- ➔ **Roads have been repaved and drainage upgraded**, brought up to a better quality. Schoodac Road, Kearsarge Mountain Road top repaved, Pumpkin Hill rehabilitated, Waldron Hill improvement/drainage, Melvins Road improvement/drainage. This is beneficial for those at Magdalen College, State Park, to improve traffic, improve farm access.
- ➔ **Federal funding obtained for a Rail Trail at Exit 9** from Waterloo under highway, 1/3 of a mile for a bike and pedestrian trail. Federal grant obtained for 2027. Design begins earlier, in 2024-2026.
- ➔ Economic Development Committee is encouraging **Concord Hospital to develop a satellite urgent care or pharmacy at Exit 9**. Some parcels are available for development.
- ➔ **The Housing Advisory Committee** is in charge of community engagement and data gathering around housing, including issues related to socially vulnerable populations. Large numbers of responses from a community survey indicate Town priorities for housing. An updated Housing Chapter for the Master Plan was drafted in June 2024 with recommendations.
- ➔ **Economic Development Advisory Committee (EDAC)** is still active, they need to further address senior and low-income housing solutions. The Town ordinances would also need to be involved for housing.
- ➔ 2024- Energy Committee is active but has been working for many years. Community Power – has now started and anyone who has signed up can benefit (Eversource), people needed to opt out if they didn't want it. Those with solar cannot be eligible for the program. Zoning voted it in a couple years ago.
- ➔ **Warner Community Center (Old Graded School)** is undergoing a review by the Town to determine its future – renovate or sell. This historic building on Main Street has high potential for servicing the needs of the community and currently holds the Warner Food Pantry and Boys and Girls Club and Community Action Program services.
- ➔ **Capital Area Public Health Network** – Town Health Officer looking to explore relationship to see how CAPHN can help Warner residents.

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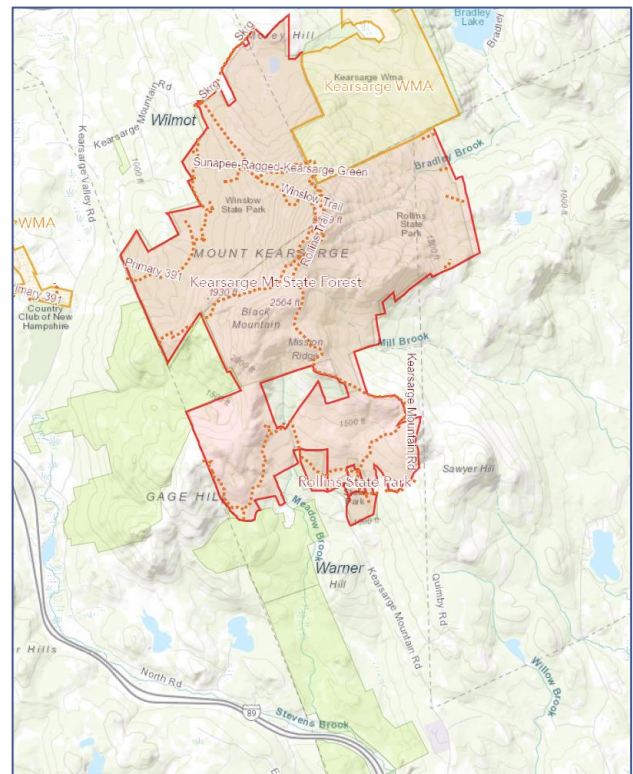
Climate Change Resilience

The Town has proven resilient to storms and climate change because the immediate needs caused by extreme weather and storms has resulted in immediate local attention to the issues.

The Town is experiencing increasing temperatures, more rain, less snow, more windstorms, and storms overall are bigger. The frequency of torrential downpours has increased which impacts the **Warner River**, brooks, and waterways often washout or erode portions of gravel roads, ditches, and drainage systems.

Current winter storms require the highway crew to use more material (sand, salt, etc) for snow plowing & maintenance, with the warmer weather temperatures resulting in more de-icing treatment during each storm. The Town budget has, with the approval of voters, increased accordingly to meet the demand. Road washouts have increased because of prolific downpours instead of gentle rain that percolates into the ground. The mud season is occurring earlier because of more snowstorms and rain during winter, warmer temperatures and fewer days of frozen ground.

Windstorm events have become more frequent and more severe, with the continuing need for clearing trees, utility lines and debris from roads. The one-egress neighborhood roads and Kearsarge Mountain Road have particular susceptibility for tree debris and utility lines down on roads during storms, inhibiting residents from accessing or leaving their homes. This problem is compounded by an uncountable number of dying trees (**biological infestations**) within the road rights of way that are particularly susceptible to these wind events, so tree removal budgets are higher each year. Fewer wildfires occurred which is fortunate with the dry, drought conditions impacting Warner over much of the last few years.



Recent temperature warming could negatively impact pond/beach congregation areas with toxic cyanobacteria blooms, aquatic invasive species, or e.coli. Warner’s Town beach is the Town’s **Silver Lake Recreation Area** on Bean Road with its small pond and owners along **Pleasant Lake** (private) use this lake for summer water recreation. **Lake Massasecum** in Bradford is commonly used by Warner residents also. The **Warner River** can be accessed from Bagley Field but there is no dedicated swimming access. With warming temperatures, public summer beaches (usually ponds) in the Central NH region have a solid history of closures due to cyanobacteria or e. coli in the last five years.

Town Department operating budgets need to continue to increase to meet Warner's growing climate change needs. Vehicle fuel allowance, road material, and tree removal budgets have required increases to accommodate the weather conditions.

See **4 HAZARD RISK ASSESSMENT** for more specific data tables and discussions on climate change, temperatures, and trends in Warner and the Central NH region area over decades.

CLIMATE RESILIENCY IN WARNER SINCE THE LAST PLAN (2019)

- ➔ **Bridge rehabilitation.** Flooding and droughts occurred annually nearly all of the last 5 years. Winter storms are icy and longer mixed precipitation storms – lots of town plow and road treatment over budget. Salt washes off regularly and this is a danger to drinking water quality. The wet snow effect on trees and power lines seems more severe. In 2025, the NH 127/NH 103 bridge over Warner River in Davisville @ Dustin Rd will be rehabilitated to improve access. Will be a complete road closure until project is concluded in 2026. A new bike and pedestrian lane will be added to the bridge, and a new dry hydrant drafting site into Warner River will be added here. The rehabilitated bridge will reduce flooding and improve traffic flow from NH 127 onto Dustin Road. Another bridge rehabilitation, the Exit 8 Northbound bridge on NH 103 was completed by NH DOT in 2023 with the second bridge to be done in 2024. Southbound is over the Warner river. Everyone benefits from better commuting.
- ➔ **Seasonal heavy rains** with subsequent flooding seem more commonplace with regular summer rain events, winter snowmelt and runoff events, even with drought conditions. The severity and frequency of events have changed. Road reconstruction and drainage improvements include increased roadwork, road maintenance culvert replacement, equates to better roadway infrastructure than in 2019. Warner continues to add funds to Capital Reserve Funds for road and culvert improvements. These improvements will better prepare the Town for future flooding events caused by seasonal heavy rains and snowmelt.
- ➔ **Emergency notifications.** Town continues to use Warner Alerts to advise residents of road closures, flooding. Efforts to get people to sign up for emergency alerts has improved. People can sign up on the new Town website. The also Pillsbury Free Library has a weekly electronic newsletter with over 1,200 recipients.
- ➔ **Emergency sheltering and notification.** Town has warming areas for people to congregate during power outages, wind, winter events. Not sure we have the capacity for bedding these individuals. Improve notification to people of availability of sheltering options.
- ➔ **Engaged a Memorandum of Understanding (MOU) with the United Church of Warner** for warming center and/or shelter. The building underwent structural improvements to strengthen and reinforce and a generator was installed since 2019. Vulnerable populations can go to the Church for assistance during storms. The Church was used as a warming center during power outages in 2023.

- ➔ **Regular wind events** are blowing over healthy and dead trees and electric utility lines onto roads throughout the Town. Warner has many one egress or ul-de-sac neighborhoods that are lined with trees, including Kearsarge Mountain Road. Residents are unable to leave their homes or access their homes for sometimes 3+ days while trees and lines are downed on the local roads. Despite as much pre-tree removal the Town or Eversource can accomplish, this situation occurs during nearly every severe wind event. Public Works takes down dead trees and limbs, they are working on updating policy for tree and limb removal, and they are planting new trees to replace the removed.
- ➔ **Eversource has replaced the high density area powerlines** so the likelihood of extended power outages has lessened for Exit 9 area to Downtown – this includes North Ridge Elderly Housing, Main Street area, Simonds School, and Warner Community Center. Eversource access to community representatives during events and the use of a website to input community information during events has improved – new Eversource Municipal Hub.
- ➔ **Town technology has been improved.** A sprinkler system at Town Hall was installed. A new telephone system (VOIP) at Town Hall and Police Department, Public Works Department was installed.
- ➔ **Groundwater Protection Committee.** This temporary Committee developed a successful Groundwater Protection Ordinance approved at the Mach 2023 Town Meeting. The ordinance provides a set of additional protections over the groundwater area between Exit 8 to north of Exit 9. The Warner Village Water District’s municipal water supply to the area will benefit from cleaner drinking water.
- ➔ **Warming temperatures.** With these climate changes, social impacts to Warner are also noted- OHRV usage on Class VI roads in the Mink Hills cause erosion and watershed pollution; tourism to Rollins State Park and Mount Kearsarge will decline, impacting the local economy; the annual October Fall Festival for autumn leaf-peeping may have fewer attendees; Motorcycle Ice Racing at Tom Pond has not been possible because of lack of pond ice. Although mosquito and tickborne notices are sent from the State for neighboring town occurrences, a few reported incidents are occurring in Warner although the potential is vast. With the forested neighborhoods, Town Forests, and surface waters, residents could be prone to these diseases.
- ➔ **Mink Hills Stewardship Committee.** This new Committee provides protection to the Mink Hills area, surrounding forest, Class VI roads, watersheds. The mission is being developed and will become essential for safe management of Warner’s resources during warming temperatures.
- ➔ **Energy Committee.** The Committee has newly enabled customer opt-in to Community Power, a reduced electrical cost. The Town was an early adopter of solar energy and now maintains two solar municipal arrays.

BARRIERS TO CLIMATE RESILIENCE IN WARNER

- ➔ **Mixed support multi-family apartments between Exits 7, 8 and 9.** A proposal is under 2024 consideration for Planning Board approval although the surrounding property owners are not supportive. This is a similar issue as the 2022 proposed 24-unit residential apartment complex at Exit 9 which was not approved after much opposition from community members. Large scale residential development is not consistent with Warner's rural and agricultural character although it may help solve the issue of affordable housing.
- ➔ **Additional property tax revenue** is highly desired by residents so they can pay their municipal tax rate bill. This revenue could be obtained by more multi-family/residential or commercial property development yet there are many social and regulatory barriers to such developments.
- ➔ The Town has a general sense of more **economically vulnerably people** today than there were in 2019. The Food Pantry serves an average of **50-60** households from Warner annually on a weekly recurring basis. This number has increased from previous years. **Fewer children** are noted, with smaller class sizes (fewer than **150**) at Simonds School K-5. There were not enough kids for Little League in 2024. This indicates fewer families are staying in or moving to Warner.
- ➔ **More people over 65 needing help.** There seems to be a rise in the number of people over 65, part of natural aging, with a higher need for financial support for everyday expenses.
- ➔ **More severe and more frequent weather events.** Back to back storms cost the Town a lot of Department budget money for cleanup. Residents are also responsible for maintaining their [property and cleaning up falling trees, blocked driveway culverts, shoveling sidewalks, and more. Wind, winter, and flooding events cause trees and limbs to block the Warner River. When flooding occurs, trees could float downstream and jam the bridge, dam, stream crossing infrastructure. Nearly Town-wide, road shoulders were impacted by the severe rain events. Parks and Recreation fields require more maintenance because of property destruction. After rainstorms, inundation flooding occurred in fields, driveways, yards. Additional time, labor, and money obligation are difficult on everyone.
- ➔ **Economic impacts on climate change-** The regular Farmer's Market is where Warner residents sell their produce. Many farmers now have greenhouses so most produce crops are not lost during extreme weather events. In 2023, local farmers were impacted by the changing weather and were unable to produce good crops – hay crops were poor, flooded fields. Frost on fruit trees killed the buds on the trees. Some places had literally no apples or pears. Maple syrup production has declined. Local food requires higher prices when there are fewer crops, since they are more expensive to grow. Warner Food Pantry will receive fewer donations when food crops are scarce.
- ➔ **Long-term droughts** are a significant concern to residents and businesses who rely on either private wells or the municipal water supply for drinking water. Recent wet rain systems temporarily eliminate low water levels, although with run-off and lack of percolation contribute to inadequate water quality. The Fire Department has been upgrading and maintaining the dry hydrants to ensure fire suppression water is available for fires. Severe droughts contributed to

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poor crops. Water restrictions were imposed by the Warner Village Water District. Residential wells were not able to produce as much water or in some cases, dried up. Some calls were to the Town Hall reporting dry wells, but this is outside the Town’s jurisdiction. Groundwater levels have been depleted in some areas.

- ➔ **Technology and public outreach.** Most socially vulnerable groups have limited or no technology, so they would most likely be vulnerable if not notified when such a problem arises. This issue is compounded by the reduced cellular communications and radio communications. Internet service is available but not reliable and satellite service is expensive.

Flooding Vulnerability in Town

Flooding can be a more easily locatable hazard since waterbodies and roadways can be used to approximate the range of future potential flooding areas. Warner has many areas particularly susceptible to flooding. Rapid pack snow melt affecting roadways and drainage, old waterline infrastructure breaking and washing out roads, culvert and bridge constriction, beaver dams, **Warner River** flooding and inundation of local roads, NH 103, NH 127 and hilly roadside drainage systems are just a few of the most likely locations to be damaged by flood events. There are many highly sloped roads in Town that could wash out during flash flooding and heavy rain events.

WATERBODIES

Warner has many areas particularly susceptible to flooding. Some key culverts need to be up-sized to address the increased water load and these are listed as Actions in **8 MITIGATION ACTION PLAN**.

These large watercourses and numerous individual brooks and ponds in Warner contribute to flooding these and other areas in Town:

🔄 **Watercourses:** **Warner River, Contoocook River.** Amey Brook, Ballard Brook, Barclay Brook, Bartlett Brook, Bradley Brook, Childrens Brook, Colby Brook, Davis Brook, Frazier Brook, French Brook, Hardy Spring Brook, Knight Meadow Brook, Meadow Brook, Mill Brook, Pleasant Pond Brook, Silver Brook, Schoodac Brook, Slaughter Brook, Stevens Brook, West Branch Warner River, Warier Brook, Willow Brook, intermittent streams, and several unnamed brooks.

🔄 **Waterbodies:** Bagley Pond, Bear Pond, Cunningham Pond, Day Pond, Mud Pond, Simmonds Pond, Tom's Pond, Silver Lake, and Pleasant Pond; several Recreation & Farm Ponds and Fire Ponds; and several unnamed ponds and wetlands.

ROAD WASHOUTS AND EROSION

Roads in Warner are vulnerable to washouts and floods and may washout during flash flooding and heavy rain events. Some of the local Town Class V maintained roads in Warner are constructed using ditching; storm drains are found along the densely developed paved roads. About **63** miles of the Town maintained (Class V) roads are located throughout Warner. Many of the potential stream crossing upgrades have been developed into Actions, with many culvert and drainage projects undertaken annually.

Many of the local Town roads in Warner are constructed using ditching instead of storm drains. Most of the Town maintained roads are gravel, enabling easier washout during future flooding events. Regular road washouts have included:

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- East Joppa Road
- Horn Street
- Collins Road
- Howe Lane
- Ladd Lane
- Bartlett Loop
- Mason Hill
- Duck Pond Lane
- Red Chimney Road
- Iron Kettle Road
- Dummer Road
- Gore Road
- Quimby Road
- Poverty Plains Road
- Route 103
- Schoodac Road
- Henniker Road
- Cunningham Pond
- Waldron Hill
- Gould Road
- West Joppa Road
- Loud Lane
- North Road
- Willaby Colby Lane
- Burnt Hill Road
- Old Pumpkin Hill Rd
- and several more

DAM BREACH SUSCEPTIBILITY

There are only a few dams in Warner with the potential for immense flooding damage *if* breached. Two **(2) Low Hazard (L)** dams are situated in Warner, the Silver Lake Dam at **Silver Brook** and the Bear Pond Dam at **Amey Brook** Tributary. Fourteen **(14) Non-Menace** dams are located throughout the community. Except for the two Silver Lake Dams, all dams in Warner are privately owned and maintained following the NH Department of Environmental Services’ (NHDES) regulations for Dam Emergency Action Plans (DEAPs).

These have been classified by the NH Department of Environmental Services as being potentially hazardous if **dam breach flooding** were to occur:

- ➔ **Low D243.04 Silver Pond Dam** (Town) on Silver Brook, 200 feet long, 15 feet high, 4 acres water.
- ➔ **Low D243.26 Bear Pond Dam** (Contoocook Village Precinct) on Amey Brook Tributary, 177 feet long, 8 feet high, 49 acres water.

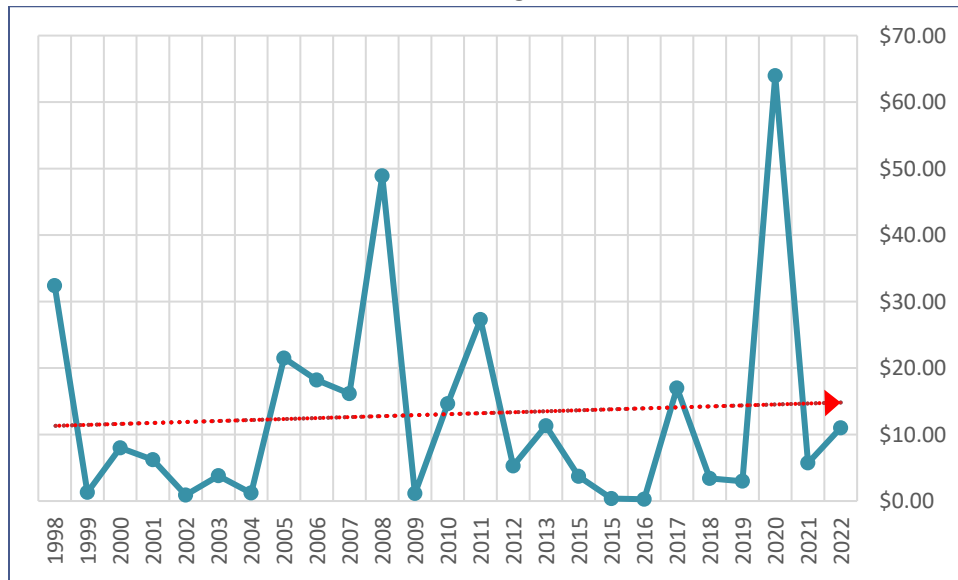
Flooding Resource Links:

- FEMA Map Center
<https://msc.fema.gov/portal/home>
- NH Department of Environmental Services Dam Safety, Maintenance and Management
<https://www.des.nh.gov/water/dam-maintenance-and-management>
- NH Department of Environmental Services Dam Pool elevations
<https://nhdes.rtiamanzi.org/stations>
- NH State Emergency Operations Center WebEOC
<https://nheoc.nh.gov/eoc9/default.aspx>

Local Climate and Extreme Weather

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 Warner can expect to see in terms of extreme weather in the future.

Figure 2.C
NOAA NH Hazardous Weather Damage Costs in \$ Millions, 1998-2022



Source: National Oceanic and Atmospheric Administration, last accessed 03/24. Adjusted for inflation [Consumer Price Index CPI]

After accounting for inflation, the costs of damages in New Hampshire have slightly increased from hazardous weather over the last 25 years according to the trendline displayed in the associated chart for Figure 2.C. The highest damage costs correlate to the 1998 (\$32m) and 2008 (\$49m) ice storms and the 2020 climate change winter/windstorms damages (\$65m). The number of injuries and fatalities have a less distinct association, with the highest casualties shown in 2015 (36), 2013 (30) and 2003 (31), often for snowstorms.

LOCAL MICROCLIMATE DATA OVER 80 YEARS

In the State, in the Central NH Region and in Warner, like in any other locales, exist our own “micro-climate” areas that can be analyzed for future susceptibility to disasters and hazard events. Micro-climate areas can be identified when neighboring towns, or even sections of a community, experience slightly different weather impacts because of varying topography, elevation, watershed, river basin, interstate, built environment situations, and other reliable geographic or atmospheric factors.

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The Central NH Region’s weather history is summarized to provide a view of the trends around the Concord area where weather measurements have been taken at the Concord Airport since 1868. Warner is geographically close to the City of Concord and Concord Municipal Airport; the Warner Town Hall is situated about 17 miles to the northwest of Concord Airport. These weather measurements should have some reasonable basis in Warner, although small unique microsystems are found throughout the Town. As the closest large and longest active weather station, and for CNHRPC Region continuity, the Concord measurements will be used for Warner.

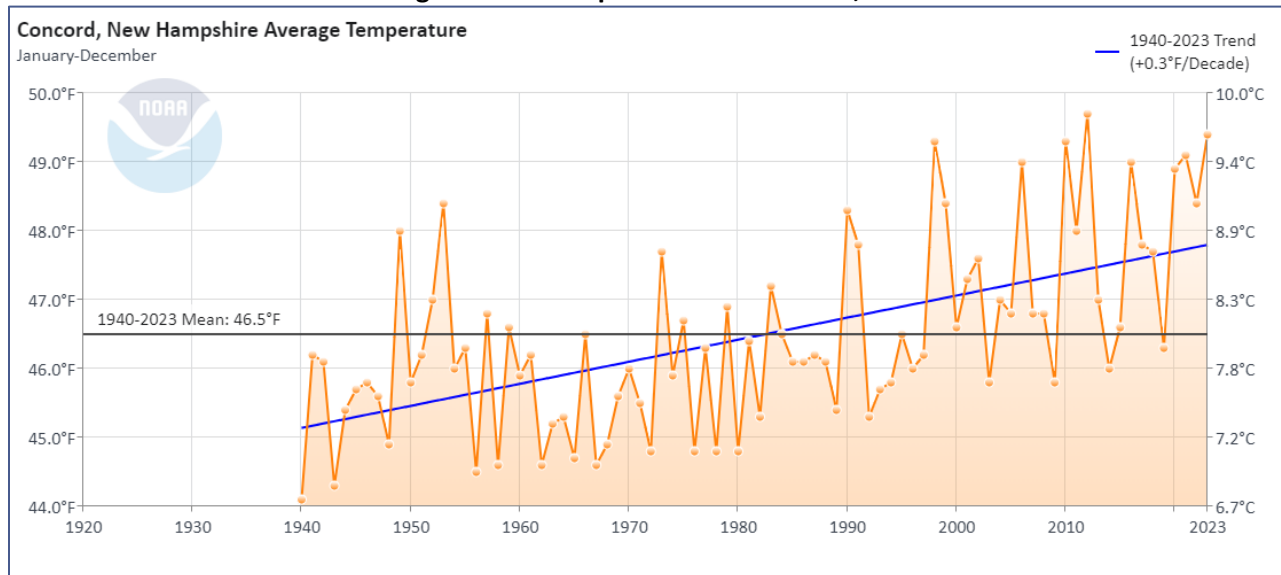
Annual Average Temperature

Figure 2.D displays Concord’s average annual temperature (Jan-Dec) between 1940 (44.1°F) and 2023 (49.4°F) with a mean (normal) temperature over the 1940-2023 period of 46.5°F. The warmest years during this 83-year period are all after 1998: 2012 (49.7°F) with a +3.2°F departure from normal, 2023 (49.4°F) with a +2.9°F departure from normal, and 2010 and 1998 (49.3°F) at +2.8°F departure from the normal mean 46.5°F.

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 1940 at 44.1°F, 1943 at 44.3°F, 1956 at 44.5°F, and 1958 and 1962 at 44.6°F. The displayed trend line allows a definitive way of averaging all temperatures and illustrates an average +0.3°F temperature increase trend per decade. This annual average increase is about +2.6°F total during this 83-year period in Concord.

Figure 2.D

NOAA Average Annual Temperature for Concord, 1940-2023



Source: National Oceanic and Atmospheric Administration, last accessed online 03-29-24

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Annual Average Minimum Temperature

Another way to evaluate temperatures change is to measure how much 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 Warner.

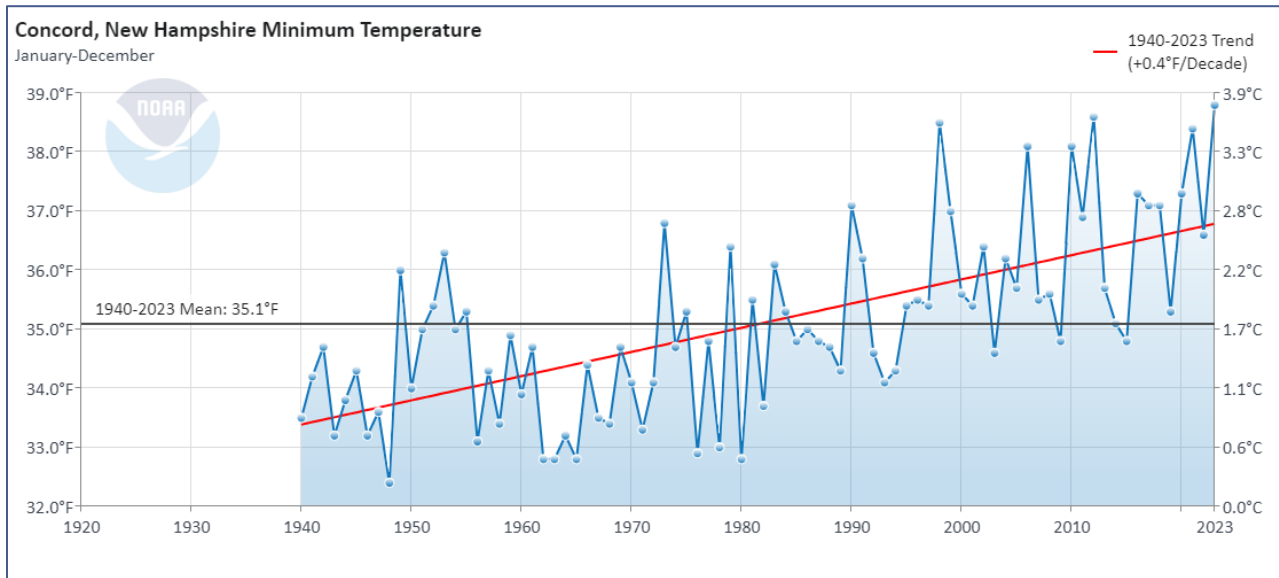
Figure 2.E displays the *minimum* average temperatures for Concord, with a mean (average) of **35.1° F** for **1940-2023**. In **2023**, the *minimum* average temperature was **38.8° F**, as compared to the **1940** *minimum* average temperature of **33.5° F**. Within this **83**-year period, the *lowest* minimum was **32.4° F** in **1948**, followed by **32.8° F** (1962, 1963, 1965, 1980), **32.9° F** (1976).

The *highest* minimums were in **2023** (**38.8° F**), in **2012** (**38.6° F**), **1998** (**38.5° F**), tied in **2006** and **2010** (**38.2° F**), followed **2021** (**38.4° F**). In fact, the top **10** highest *minimums* have occurred since **1990** during the **83**-year data span, indicating the coldest temperatures are growing warmer. The trend line indicates a **+0.4° F** increase per decade between **1940-2023**, about a **+3.2° F** increase in *minimum average* temperatures as shown in Figure 2.E.

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Figure 2.E

NOAA Minimum Average Temperatures for Concord, 1940-2023



One future data set the Town of Warner could compare is these temperature trends (by year) with average wind speed changes between 1940-2020. Do the wind and temperature variations correlate? Wind data was not available using this NOAA resource: NOAA National Centers for Environmental information, Climate at a Glance: City Time Series, published December 2023, retrieved March 2024.

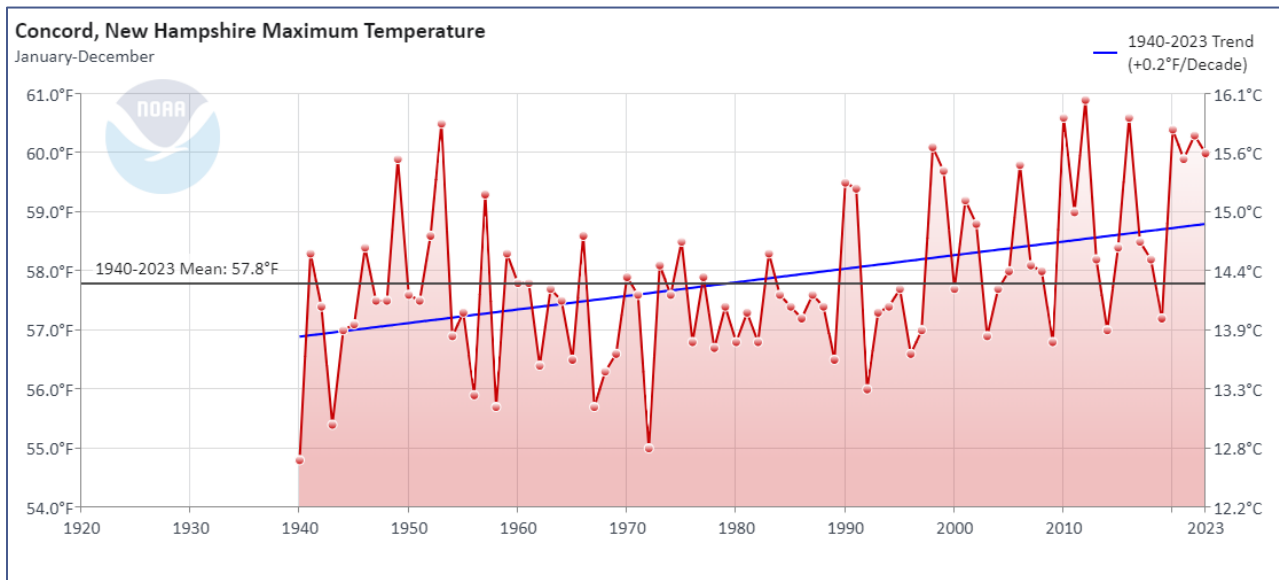
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Annual Average Maximum Temperature

Figure 2.F displays the *maximum* average temperatures between 1940-2023, with a mean (average) of 57.8° F annually. In 1940, highest *maximum* average temperature was 54.8° F while in 2023 the highest *maximum* was 60.0° F.

The lowest *maximums* were 54.8° F in 1940, 55.0° F in 1972, 55.4° F in 1943, 55.7° F in 1958, 55.7° F. The highest *maximums* in Concord were 60.9° F in 2012, 60.6° F in 2010 & 2016, 60.5° F in 1953 followed by 60.4° F in 2020. Eight (8) of the top 10 highest *maximums* have occurred since 1990 during the 83-year data span. These numbers indicate the hottest temperatures in the Central NH Region are growing warmer. The +0.2° F trendline per decade results in a +1.8° F increase in the *maximum* average temperatures as shown in Figure 2.F.

Figure 2.F
NOAA Maximum Average Temperatures for Concord, 1940-2023



Annual Average Precipitation

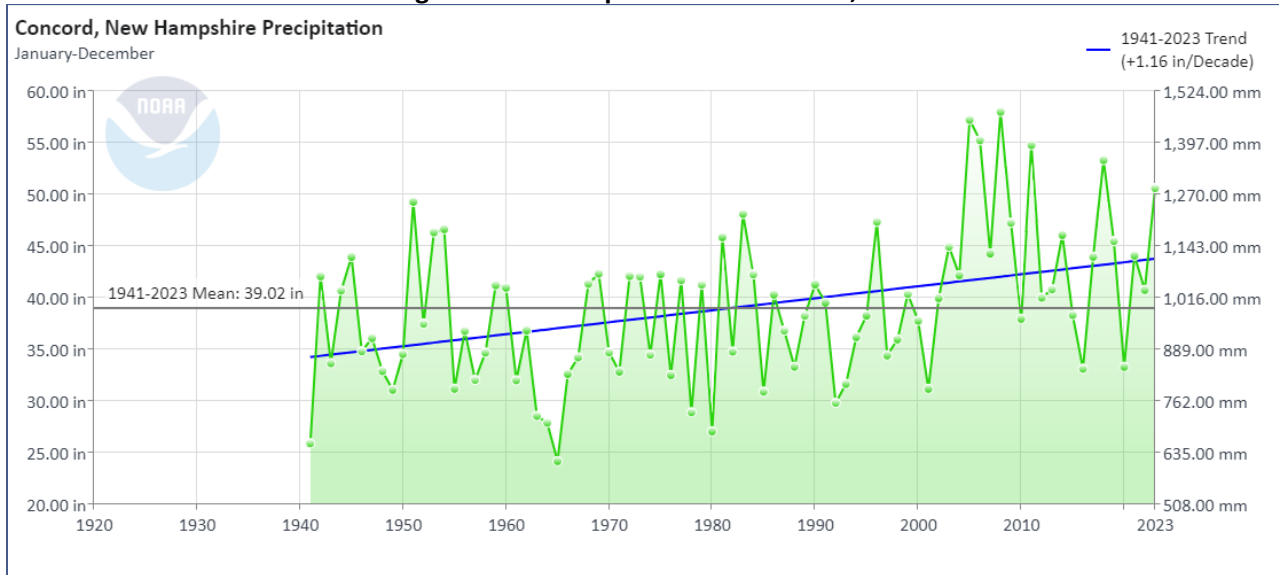
For precipitation (rain) changes, Figure 2.G displays Concord’s *average* annual inches between 1941 and 2023. Varying seasonal rainfall amounts continue over the decades. The *mean* annual precipitation during this period is 39.02” annually. In 1941, the amount of precipitation was 25.91” while in 2023 the precipitation totaled 50.61”.

The wettest year in Concord was 2008 at 58.00”, 2005 at 57.22”, 2006 at 55.24”, 2011 at 54.78”, 2018 at 53.33”, followed by 2023 at 50.61”. The years with the least amount of rainfall were 1965 at 24.19”, 1941 at 25.91”, 1980 at 27.07”, 1964 at 27.90”, 1963 at 28.56”, followed by 1978 at 28.91”. The trend

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line serves the same purpose to illustrate an increase of **1.16"** in precipitation per decade, or about a **+10"** increase in the annual average precipitation during this **80+-year** period from **1941-2023** in Concord. Warner will have experienced similar conditions as shown in **Figure 2.G**.

Figure 2.G
NOAA Average Annual Precipitation for Concord, 1941-2023

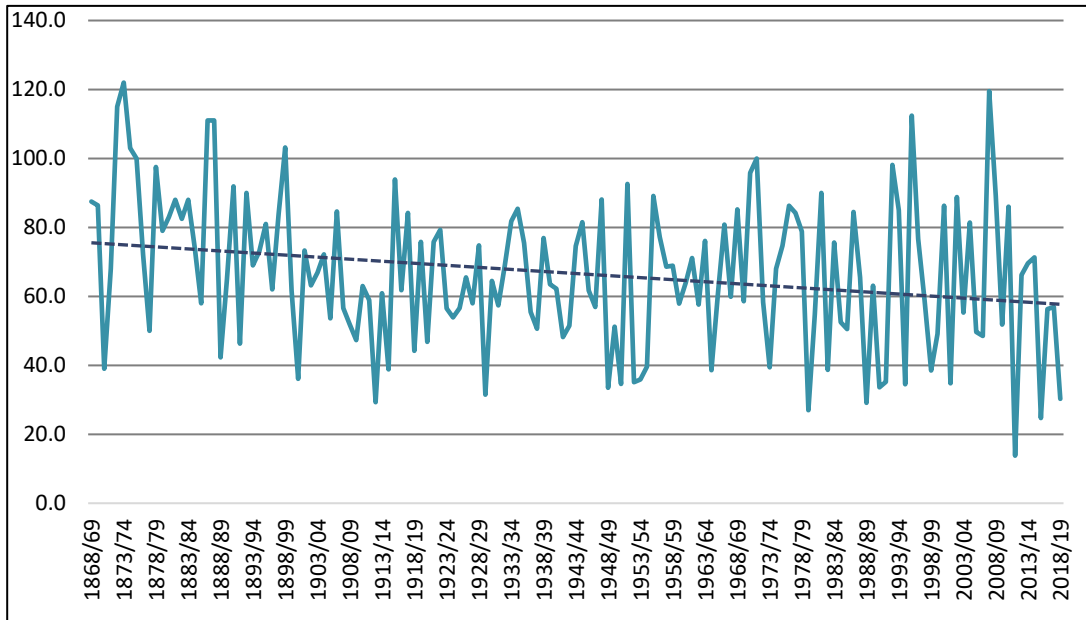


Annual Average Snowfall

The National Oceanic and Atmospheric Administration (NOAA) seasonal snowfall totals were compiled by CNHRPC for Concord, where snowfall data gathering began in **1868**. **Figure 2.H** 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")**.

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Figure 2.H
Seasonal Snowfall Totals for Concord, 1868-2019



Source: National Oceanic and Atmospheric Administration Data as compiled by CNHRPC

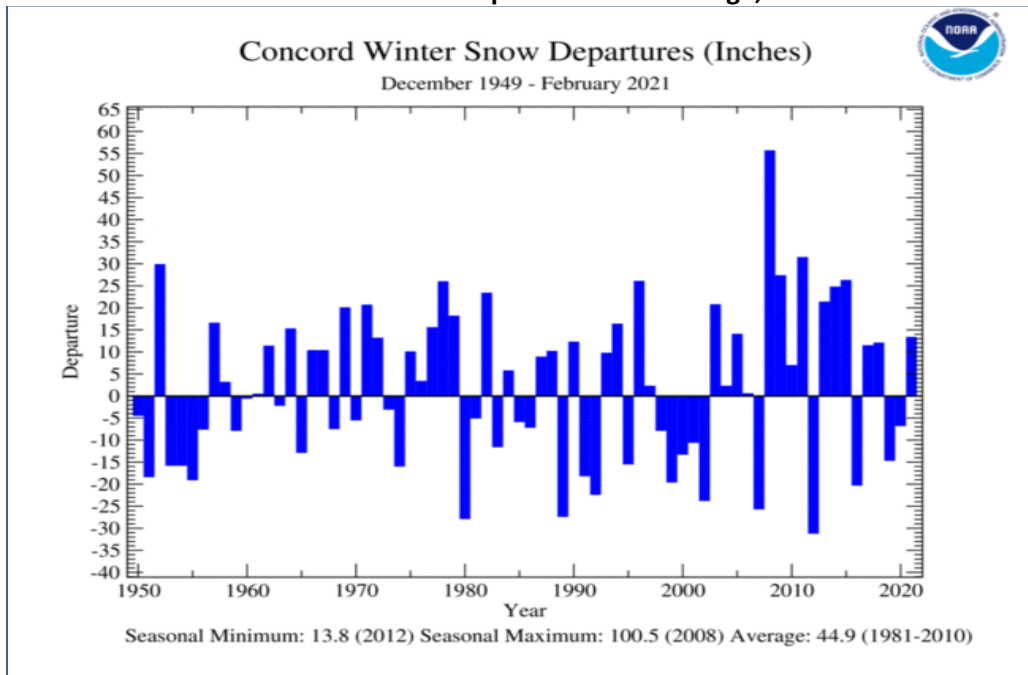
Five (5) of the top 10 lowest snow accumulations occurred since 1990. The 2018/19 season ended with 30.3”, ranking 6th out of 151 years of records. Warner is geographically close to Concord (17 miles) and likely shares similar snowfall accumulation trends over time.

Annual Snowfall Departure from Normal

Displayed in Figure 2.I 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 2020, 58.2” of snowfall occurred, which is 13.3” higher than what normally falls (44.9”). Since 1949, the year with the highest amount of snowfall was 2008 with 100.5” and the lowest snowfall was 13.8” in 2012.

Figure 2.I
Concord Winter Snowfall Departure from Average, 1949-2021



Source: National Oceanic and Atmospheric Administration, National Climate Report February 2021 last accessed 03-31-21

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 Warner. 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.

Originally developed in **2014**, the updated *New Hampshire Climate Assessment June 2022* by University of New Hampshire’s Sustainability Institute reviewed current climate conditions and projected future conditions of New Hampshire’s weather stations under potential low and high emission scenarios. The Central NH Region and the Town of Warner are within southern New Hampshire. The past and future Southern NH climate overview is illustrated in **Figure 2.J**.

As a result of anticipated extreme weather continuing and climate changes in Central NH and Warner, 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, which may

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result from climate change. For more information on these topics, refer to the [Central NH Regional Plan 2015](#).

More Human Health Emergency Events

- ☞ Illnesses such as heatstroke, fainting, and heat exhaustion.
- ☞ Excess heat is 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, potentially 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.

Figure 2.J

Southern NH Climate Assessment Projections

Past Data and Future Climate Overview

2014 SOUTHERN NH CLIMATE ASSESSMENT Projections

TEMPERATURE

What have we seen since 1970?

- Average maximum temperatures have warmed by 2.0°F (spring, fall and summer) and 2.9°F (winter)
- Average minimum temperatures have warmed by 3.2°F (spring, fall and summer) and 6.1°F (winter)

What can we expect in the future?

- Summers will be hotter: 16-47 days above 90°F
- Winters will be warmer: 20-45 fewer days below 32°F

RAINFALL

What have we seen since 1970?

- Annual precipitation has increased by 8-22%
- Frequency and magnitude of extreme events

What can we expect in the future?

- Precipitation annual average will increase: 15-20%
- More frequent and severe flooding

SNOW

What have we seen since 1970?

- Fewer days with snow cover
- Lake ice-out dates occurring earlier

What can we expect in the future?

- Significant decrease of 20-50% in number of snow covered days

Source: UNH Climate Solutions of New England, 2015

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.
- ☞ Trees can become susceptible to invasive species and diseases such as the Hemlock Woolly Adelgid, Emerald Ash Borer, Red Pine Scale, Beech Leaf disease. Lantern Moth has nearly reached Merrimack County.
- ☞ 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 from 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. Dam operators may quickly release water without notification to municipalities.

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, potentially 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 intensified 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 (Warner has few agricultural operations)

- ☞ 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 Warner. 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**.

Climate Change Resource Links:

- National Oceanic and Atmospheric Administration (NOAA) Hazard Stats by State and Year
<https://www.weather.gov/hazstat>
- NH Climate Assessment 2021
<https://scholars.unh.edu/sustainability/71/>
- NOAA Weather Data in Concord NH
https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/city/time-series/USW00014745/tavg/12/12/1920-2023?base_prd=true&begbaseyear=1920&endbaseyear=2023&trend=true&trend_base=10&begtrendyear=1920&endtrendyear=2023
- NOAA National Centers for Environmental information, Climate at a Glance: City Time Series, published December 2023, retrieved March 2024
<https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/city/time-series>
- NOAA National Climate Report 2021 Snowfall Departure from Normal
<https://www.ncdc.noaa.gov/sotc/national/202102/supplemental/page-5>
<https://www.ncdc.noaa.gov/monitoring-content/sotc/national/2021/feb/Concord.gif>
- US Climate Resilience Toolkit
<https://toolkit.climate.gov/>
<https://toolkit.climate.gov/tools>

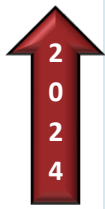
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Warner’s Hazard Vulnerability Changes Since the 2019 Plan

The following statements are the Hazard Mitigation Committee’s overall assessment of the Town’s change in vulnerability to disasters since the 2019 Plan. Natural disasters are the focus of discussion in the Warner Hazard Mitigation Plan Update 2024, but acknowledgements of the potential for human and technological disasters to occur in Warner are provided.



Natural Disasters Vulnerability The Town’s overall vulnerability to natural disasters is believed to have INCREASED over the last 5 years because of more storms, more severe storms and their economic cost. Factors considered include the Town’s aging population, the costly climate and severe weather impacts, tree fall on major roads during wind or winter events, warming winters, continuing disasters and hazard events, and fewer Town emergency and response personnel since 2019. More regular and severe storms have been experienced, resulting in higher costs, more damages from road flooding, more debris and slower damage repairs, yet better response to events. The population has increased and there is slightly higher population density. Regular infrastructure improvements and bridge and culvert upgrades, better traffic flow, more attention to energy efficiency and community, consistent training and drills, and good preparation and mitigation to date help to offset greater damages.



Human and Technological Disasters Vulnerability 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 technological escalation in the future. The Town is better protected than in the past through partnerships and best practices, updated SOPs to combat human hazards, regular Information Technology (IT) improvements tightened the digital informational services. Yet, the Town has an ongoing struggle to contain the many facets of human and technological hazards. Interstate 89 Exits (southbound and northbound) and Downtown/Main Street are concentrated, highly traveled areas where crashes can cause ecological disasters or very large traffic jams and detours. Traffic is increasing, cyberattacks are increasing. Internet availability will continue to be a premium service while cellular coverage is not available consistently over the entire Town. The Town must stay in a mainly reactive position due to costs and staffing, although training and response to human and technological incidents improved. With necessary but costly infrastructure to upkeep, it will remain difficult to stay ahead of technological disasters.

3 GOALS AND OBJECTIVES

The overall purpose of this Plan is to reduce future losses to life and property from potential hazard events by identifying appropriate **Actions** to implement during the five-year span of this Plan.

Inspired by early *State of New Hampshire Hazard Mitigation Plans*, the Warner’s **Goals** were initially developed in the previous **Warner Hazard Mitigation Plans**. To conform with the latest state and federal guidance while attending to the Town’s needs, the **Goals** and **Objectives** were reviewed and updated as applicable by the Hazard Mitigation Committee during a public meeting for the **2024 Plan**. Lastly, with the most recent change in hazard types utilized in the *State of New Hampshire Multi-Hazard Mitigation Plan 2023*, 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. Their relationship is displayed in **Figure 3.A**.

The overall **Goals** 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**.



HAZARD CATEGORIES

From the **Hazard Identification and Risk Assessment**, the individual natural hazards under consideration have been grouped into similar event types for simplification of determining Objectives. These *Main Hazard Categories* in **Table 3.1. Objectives** begin to narrow down the focus of the overall **Goals** into hazard minimization statements and will use these categories.

Finally, **Actions** are the specific activities or projects which can be undertaken to accomplish an **Objective**. The **Action** is the target to reach to help mitigate hazards in the community. The completed **Action** fulfills the associated **Objectives**. Actions will be listed and reviewed later in **8 MITIGATION ACTION PLAN**.

**Table 3.1
Updated Hazards for Objectives 2024**

Main Hazard Category	Specific Hazards Included	Hazard Type
Drought	Drought	Hydrologic
High Wind/ Tropical/ Storms	Thunderstorms, Downbursts, High Winds, Tornadoes, Tropical and Post-Tropical Cyclones, Hail	Atmospheric
Wildfire /Fire/ Lightning	Wildfire, Lightning, Fire	Hydrologic/Atmospheric
Flood/ River	Dam Failure, Inland Flooding, River Hazards	Hydrologic
Winter	Winter Storms, Blizzard, Ice Storm	Atmospheric
Extreme Temperatures	Cold Wave, Heat Wave	Atmospheric
Earthquake/ Landslide	Earthquake, Landslide	Geologic
Public Health/ Biological	Swimming Water Quality, Air Quality, Drinking & Surface Water Quality, Infectious Diseases, Arboviral Diseases, Tickborne Diseases	Biologic
Solar	Geomagnetic Storms, Solar Radiation, Radio Blackout	Space Weather
Hazardous Materials/	Hazardous Materials, Radiological	Haz Mat
Human Hazard	Crash, Mass Casualty Incident, Cyber Event, Terrorism/ Violence	Human
Technological	Aging Infrastructure, Conflagration (Fire), Long Term Utility, Outage	Technological

The Warner Hazard Mitigation Committee aimed to develop at least one Plan **Objective** for each of the *Main Hazard Categories* noted.

Overall Hazard Mitigation Plan Goals

Natural hazards are the focus of this **Hazard Mitigation Plan 2024**. Because Human and Technological hazards are also a concern for emergency responders, they have appeared in prior Plan versions and are demoted in importance, but are still considered, in each section of this **2024 Plan**. The following **Goals** for the **Hazard Mitigation Plan 2024** 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 slightly revised from the **2019 Plan** to accommodate consistent grammar and to reflect updated hazards. The **Hazard Mitigation Goals** are displayed in **Figure 3.B**.

Figure 3.B

Hazard Mitigation GOALS

- 1** To reduce the risk of injury and loss of life in the Town from the impacts of natural hazards, severe weather, disasters, and human and technological hazards.
- 2** To reduce the risk of potential damage in Town to public and private property, infrastructure, critical facilities, historic resources and the natural environment from the impacts of natural hazards, severe weather, disasters, and human and technological hazards.
- 3** To enhance communication, public outreach and input, provide educational programs and promote enforcement activities related to hazard mitigation planning to help protect the community from the impacts of natural hazards, severe weather, disasters, and human and technological hazards.

Source: Warner Hazard Mitigation Committee

General Hazard Mitigation Objectives

Main natural hazard event categories of Drought, High Wind/Tropical, Wildfire/Fire/Lightning, Flood/River, Winter, Extreme Temperatures, Earthquake/Landslide, Public Health/Biological, Solar are intended to encompass their respective full sub-hazards range described in this Plan. The non-natural hazard categories of Hazardous Materials/Radiological, Human, and Technological are secondary to the natural hazards but also receive Objectives. Many of the hazards included in the 2019 Plan did not have an Objective, which is now rectified in the 2024 Plan. The General Objectives are developed by addressing the primary hazard events that could impact Warner. 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. General Hazard Mitigation Objectives were crafted for the Warner Hazard Mitigation Plan 2024 as displayed in Figure 3.C.

Figure 3.C

Hazard Mitigation OBJECTIVES

1	Drought	Minimize the impact of drought events to agricultural areas, private and municipal wells, and other locations.
2	High Wind/ Tropical	Minimize the damage to life, property, and infrastructure from severe wind events, including thunderstorms, hail, downbursts, tornadoes, hurricanes and tropical storms, and damage resulting from tree debris, especially along one-egress roads.
3	Wildfire/ Fire/ Lightning	Minimize the damage to life, property, and infrastructure, including the Kearsarge, Davisville, and other State Forests; Harriman Chandler Reservation Town Forest and other Town Forests; Town-owned property, agricultural operations, and all telecommunications towers from wildfires, brushfires, other outdoor fires, and lightning.
4	Flood/ River	Minimize the damage to life, property, and infrastructure from floodwaters or erosion from the Warner River and its tributaries, Amey Brook, Ballard Brook, Bartlett Brook, Davis Brook, Frazier

		Brook, French Brook, Meadow Brook, Silver Brook, Schoodac Brook, Slaughter Brook, Stevens Brook, Willow Brook; Tom Pond, Pleasant Pond; and from other wetlands, floodplains, water bodies and streams in Town.
5	Flood/ River	Minimize the damage to life, property and infrastructure caused by snowmelt, precipitation, river scouring, ice jams or debris (tree limbs, leafy material/sediment), resulting in erosion, flooded roads, and culvert washouts; bridge damage; small dam failures or beaver dam breakage.
6	Winter	Minimize the damage to life, property and infrastructure from winter weather events, including storms, snow, ice; and minimize damage from utility failure, tree fall, blocked transportation routes including one-egress roads, and roof collapses.
7	Extreme Temperatures	Minimize the damage to life, property and infrastructure due to temperature fluctuation resulting from climate change, including extreme heat/cold events, heat waves, wind chill and excess energy consumption.
8	Earthquake/ Landslide	Minimize the threat of potential landslide or rockslide areas along I-89, Route 103, local roads and excavation areas; engage in public awareness of local earthquake activity and safety precautions.
9	Public Health/ Biological	Minimize the threat or impact of public health events to the public, including infectious diseases (coronavirus, influenza, hepatitis, meningitis, and other viruses and bacterial diseases); air and water quality decline; biological infestations (milfoil, emerald ash borer); arboviral (mosquito) and tick-borne diseases; and substance misuse.
10	Solar	Minimize the impact to life, property and infrastructure from solar storms and space weather, including solar winds, geomagnetic storms, solar radiation, and radio blackout.

11	Hazardous Materials/ Radiological	Minimize the damage to life, property, and infrastructure from hazardous materials exposure, chemical spills, trucking accidents, and radiological materials incidents, including impacts and exposures caused by brownfields sites, leaking underground storage tanks, and occupational sites.
12	Human	Minimize the damage to life, property and infrastructure from human threats such as transportation crashes, sabotage/vandalism, terrorism, hostage situations, arson, mass casualty, civil disturbance, and cyber events.
13	Technological	Minimize the damage from multiple hazards to the aging infrastructure of the community, including bridges, culverts, dams, local roads, underground water and sewer lines, State roads (I-89, NH 127, NH 103, NH 114, and Exits 7, 8, 9 and their ramps) and seek to maintain operational efficiency.
14	Technological	Minimize the impact to life, property and infrastructure from the risks of utility outages, such as live wire dangers and long-term outages in electrical power, internet and telecommunications services; and damages from fire conflagration and explosion, especially near densely populated areas or buildings like the Business District.

Source: Warner Hazard Mitigation Committee

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4 HAZARD RISK ASSESSMENT

Natural disasters, severe weather events and technological, and human hazards that *previously* occurred in Warner 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. Included in this assessment are a **Change in Intensity** and **Highest Magnitude** of each natural hazard. The major disasters declarations covering the Central NH Region (Hillsborough County and Merrimack County) were inventoried and additional hazard events occurring in Warner and the surrounding area have been described. FEMA Public Assistance funding to the Town is detailed for each disaster declaration. A review of climate variations is described for the region to provide perspective on how the weather may change over time. All information was updated for the **2024 Plan**.

As noted in **3 GOALS AND OBJECTIVES**, the natural hazards and Natural Hazard Categories themselves have slightly altered to better fit with the *State of New Hampshire Multi-Hazard Mitigation Plan 2024* and federal guidelines. No hazards were removed. Natural hazards such as **Avalanche, Tsunami, Volcanic Activity**, and **Coastal Flooding** were not discussed in Warner’s **2024 Plan** because they have no ascertained relevance to the Town. While there is a distinct emphasis on natural hazards, **Hazardous Materials/ Radiological, Human, and Technological** hazard events are described if a notable impact was found on the Town.

Main Hazard Category	Specific Hazards Included
Drought	Drought
High Wind/Tropical/Storms	Thunderstorms, Downbursts, High Winds, Tornadoes, Tropical and Post-Tropical Cyclones, Hail
Wildfire/Fire/Lightning	Wildfire, Lightning, Fire
Flood/River/Dam	Dam Failure, Inland Flooding, River Hazards
Winter/Ice	Winter Storms, Blizzard, Ice Storm
Extreme Temperatures	Cold Wave, Heat Wave
Earthquake/Landslide	Earthquake, Landslide
Public Health/Biological	Swimming Water Quality, Air Quality, Drinking & Surface Water Quality, Infectious Diseases, Arboviral Diseases, Tickborne Diseases
Solar	Geomagnetic Storms, Solar Radiation, Radio Blackout
Hazardous Materials/Radiological	Hazardous Materials, Radiological
Human Hazard	Crash, Mass Casualty Incident, Cyber Event, Terrorism/ Violence
Technological	Aging Infrastructure, Conflagration (Fire), Long Term Utility, Outage

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Within these *Main Hazard Categories* are numerous related *Specific Hazards*, most 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**, and **Overall Risk, Change in Intensity**, and **Highest Hazard Magnitude**, 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 natural hazards 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 Warner 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-two (22) natural, technological, and human hazards are evaluated within this Plan. The 14 natural hazards are ranked within the **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 Warner 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 2023 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 two **Hazard Mitigation Plan** cycles) to **Highly Likely/4** (76-100% chance in 10 years) as shown below.

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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 must 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 2024**. However, **Dam Failure** was promoted to a natural hazard and was rated because of its close correlation to **Flooding**.

Severity of Impact to the Town

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

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 an **EXTREME**, **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.

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Numeric Probability and Severity	NATURAL HAZARD CONCERN SUMMARY	Numeric Overall Risk Score
1	LOW	1.0 – 4.9
2	MEDIUM	5.0 – 7.9
3	HIGH	8.0 – 11.9
4	EXTREME	12.0 – 16.0

HAZARD IDENTIFICATION AND RISK ASSESSMENT SCORES

The highest possible **Overall Risk** score a natural hazard could be ranked using this **Hazard Identification Risk Assessment (HIRA)** system is **16.0** while the lowest score a hazard could be ranked is **1.0**. 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 the **Probability of Occurrence in 10 Years** and the average of the three **Severity of Impact to the Town** figures.

Out of the ranked natural hazards, Warner’s **Overall Risk** scored between **1.0 – 16.0** out of a possible Risk score of **16**, as displayed with calculated decimals in **Table 4.1**. Most hazards were ranked **MED-HIGH** Few were ranked **LOW** or **EXTREME**. Comparing the natural hazards broadly since **2019**, significant increases in **Overall Risks** were seen in **Public Health** (now **13.3**, was **8.0**), **River Hazards**, **Inland Flooding**, and **Solar Storms**, but most hazard scores decreased. All of the new hazards in **2024** were included in **2019** under combined categories, so none are considered new.

Table 4.1
Highest Overall Risk Hazards and Hazard Events Since the Last Plan

Natural Hazard Event	HIRA Overall Risk 1-16	NATURAL HAZARD CONCERN SUMMARY	Notable Hazard Events Within the Last 5 Years? (See Table 4.5)	Mitigation Actions Developed (see Ch 8)	Comparison to 2019 HIRA Overall Risk 1-16*
Drought	8.0	HIGH	Yes	Yes	8.0
Wildfire	6.0	MED	Yes	Yes	6.0
Winter Storms	8.0	HIGH	Yes	Yes	12.0
Ice Storm	9.3	HIGH	Yes	Yes	incl
Cold Wave	6.7	MED	Yes	Yes	9.3
Heat Wave	5.3	MED	Yes	Yes	9.3
Dam Failure	4.0	LOW	No	Yes	n/r
Inland Flooding	10.7	HIGH	Yes	Yes	7.0
River Hazards	10.7	HIGH	Yes	Yes	6.7

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Natural Hazard Event	HIRA Overall Risk 1-16	NATURAL HAZARD CONCERN SUMMARY	Notable Hazard Events Within the Last 5 Years? (See Table 4.5)	Mitigation Actions Developed (see Ch 8)	Comparison to 2019 HIRA Overall Risk 1-16*
Earthquake	1.0	LOW	Yes	Yes	4.0
Landslide	1.0	LOW	Yes	Yes	1.0
Public Health/Biologic	13.3	EXTR	Yes	Yes	8.0
Solar Storms	12.0	EXTR	Yes	Yes	2.0
High Winds	6.7	MED	Yes	Yes	10.7
Thunderstorms	5.3	MED	Yes	Yes	Incl
Downbursts	5.3	MED	No	Yes	Incl
Lightning	4.0	LOW	Yes	Yes	6.7
Tornados	6.7	MED	No	Yes	Incl
Hail	4.0	LOW	Yes	Yes	incl
Tropical and Post Tropical Cyclones	5.0	MED	No	Yes	7.0
No = No notable impacts since the last Plan. Yes = Notable impact events added to Table 4.5. Annual = Annual occurrence with variable impacts; any notable impacts added to Table 4.5.					*Or equivalent hazard to 2024 Plan

Source: Compilation of Warner HMC Data

INTENSITY CHANGE AND HIGHEST MAGNITUDE SCORES

In the HIRA, a Change in Intensity of each rated natural hazard over the next 10 Years was expressed by the Committee on a 25% scale, with 0% No Change in 10 Years, -100% Extreme Decrease, and +100% Extreme Increase in 10 Years. Each natural hazard’s Intensity Change was based on the evaluation of past and current weather changes and an overall feel for how the climate could change in Warner over the next 10 years.

Natural Hazard Intensity Change in Next 10 Years								
-100%	-75%	-50%	-25%	0%	25%	50%	75%	100%
Extreme Decrease	High Decrease	Moderate Decrease	Slight Decrease	No Change	Slight Increase	Moderate Increase	High Increase	Extreme Increase

Identification of the Highest Magnitude or Extent of each natural hazard in the HIRA could reach in 10 Years was determined by using the most common scientific scales. Extent is defined by a geographic area or dimension while magnitude is defined by the representative strength of an event. Sometimes, a natural hazards’ Highest Magnitude or Extent was rated by more than one scale.

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Table 4.2
Predictions for Future Natural Hazard Events Over Next 10 Years

Natural Hazard Event	Intensity Change %	Highest Magnitude of Hazard	Scale Range	Scientific Scales Used
Drought	+25%	D3 Exceptional Drought	D0 Abnormally Dry to D4 Exceptional Drought	US Drought (D-scale) Monitor Intensity Scale
Wildfire	+25%	Very High Fire Danger (Orange)	Low (Green) to Extreme (Red) Fire Danger	National Fire Danger Rating System
Winter Storms	0%	3 Major Snowfall	1 Notable to 5 Extreme Snowfall	Northeast Snowfall Impact Scale (NESIS)
		Moderate Impacts (Orange)	No Impacts to Extreme Winter Impacts	NWS Winter Storm Severity Index (WSSI)
Ice Storm	+50%	4 Prolonged (Purple), 5-10 days no electricity	0 Damage to 5 Ice Damage	Sperry-Piltz Ice Accumulation Index
Cold Wave	+25%	<=10 minutes (Dark Blue)	<5 minutes to > 2 hours for Frostbite Times	NOAA Wind Chill Temperature Index
Heat Wave	+25%	Danger (Dark Orange)	Likelihood of Heat Disorders, Caution (Yellow) - Extreme Danger (Red)	NOAA Heat Index
Dam Failure	0%	Low Hazard Dam Breach	Non-Menace to High Hazard Dam Class	NHDES Dam Hazard Classifications
Inland Flooding	+50%	500 Year Flood	100 Year to 500 Year Flooding	Special Flood Hazard Areas (SFHAs) on 2010 & Preliminary Digital 2023 Flood Rate Insurance Maps (for Zones A, AE, X)
		Moderate >40% (Red)	>5% Marginal to >70% High Rainfall Risk	NOAA Excessive Rainfall Risk Categories
River Hazards	+50%	Much Above Normal Stream Flow (Dark Blue)	Much Below Normal Flow (Red) to Much Above Normal Stream Flow (Blue)	National Water Dashboard (USGS Stream Gages, Groundwater Monitors)
		12' Major Flood Stage (Purple)	6' Action Stage to 12' Major Flood Stage Warner River Davisville	USGS Warner River Flood Stage at Davisville (River Gage #01086000)
Earthquake	0%	IV Light (Cyan)	I Not Felt to X Extreme Shaking Intensity	USGS Modified Mercalli Intensity Scale
		3.5 MM	<1.5 Magnitude to 8> Magnitude	KGS Earthquake Moment Magnitude (Size) Scale, formerly Richter Magnitude
Landslide	0%	Relatively Moderate (Yellow)	Very Low Risk (Blue) to Very High Risk (Red)	No widely-used scale; FEMA National Risk Index Map
Public Health/ Biologic	+50%			
Swimming Water Quality		E Coli Warning (Silver Lake), No Cyanobacteria	Bacteria Advisory to Bacteria Warning	NHDES Cyanobacteria/Public

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Natural Hazard Event	Intensity Change %	Highest Magnitude of Hazard	Scale Range	Scientific Scales Used
				Beach Bacterial Warning Levels
Air Quality		Very Unhealthy (Purple)	Good (Green) to Hazardous (Maroon) Air Quality	NHDES Air Quality Index
Drinking & Surface Water Quality		Green (Water Precinct) - Good, Orange - Poor	Good Water Quality (Green) to Severe Water Quality (Red)	NHDES Watershed 305(b)Assessment Summary Reports by Watershed 2020-2022
Infectious Diseases		Very High (Red)	Minimal (White) to Very High (Red)	NHDHHS Acute Respiratory Activity by County (weekly map)
Arboviral Diseases		Moderate Risk (Orange)	No Risk (Yellow) to Very High Risk (Red)	NHDHHS Arboviral Risk Map by Town (annual)
Tickborne Diseases		>500 cases per year (Merr Cty)	Rate Per 100,000 persons - Latest 2017-2021 (4 years) = 131 (Merr Cty), 101 (Hills Cty)	NH DHHS Reported Cases of Lyme Disease by County 2017-2021
Substance Misuse		1-25 EMS Drug Overdose/Abuse Incidents/ year	NH DHHS Drug Monitoring Initiative (Map) Monthly and YTD	NH DHHS Drug Monitoring Initiative
Solar Storms/ Space Weather	+25%			
Geomagnetic Storms		G3 Strong	G1 Minor to G5 Extreme Geomagnetic Storm	NOAA Geomagnetic Storms Scale
Solar Ration		S3 Strong	S1 Minor to S5 Extreme Solar Radiation	NOAA Solar Radiation Storms Scale
Radio Blackout		R3 Strong	R1 Minor to R5 Extreme Radio Blackouts	NOAA Radio Blackouts Scale
High Winds	+25%	11 Storm Force 64 to 75 mph	0 Calm to 12 Hurricane Force Wind	Beaufort Wind Scale (Land)
Thunderstorms	+25%	5 High Risk (Pink)	1 Marginal (Lt Green) to 5 High Thunderstorm Risk (Pink)	NOAA Severe Thunderstorm Risk Categories
Downbursts	+25%	Microburst <2.5 miles	<2.5 miles wide Microburst to >2.5 miles wide Macroburst	NOAA Downbursts
Lightning	+25%	LAL 5 Numerous T-storms	LAL 1 No Thunderstorms to LAL 6 Dry Lightning Activity	NWS Lightning Activity Level (LAL)
Tornados	+25%	EF1 86-100 mph	EF0 65-85 mph to EF5 >200 mph	NOAA Enhanced Fujita Scale
Hail	+25%	1.75" Golf Ball	1/4" Pea Size to 4.5" Grapefruit Size Hail Stones	NOAA Hail Size
		H4 Severe 25-40 mm	H0 5mm Hard Hailstorm to H10 >100mm Super Hailstorm	TORRO Hailstorm Intensity Scale Adapted
Tropical and Post Tropical Cyclones	25%	Category 2 96-110 mph Extremely Dangerous	Category 1 74-95 mph Minimal to Category 5 >157 mph Catastrophic Winds	NOAA Saffir-Simpson Hurricane Wind Scale

Source: Warner Hazard Mitigation Committee 2023

HAZARD IDENTIFICATION AND RISK ASSESSMENT RATINGS AND POTENTIAL HAZARD EXTENT

Included with the **Table 4.3 Hazard Identification Risk Assessment (HIRA)** are the final figures and a description of the potential locations or extent such a hazard might impact Warner. Dates and descriptions of the new hazard impacts within the last 5 years are provided in a later table, **Table 4.5 Local and Area Hazard Event and Disaster History (Sequential)**.

Table 4.3

Natural Hazard Identification and Risk Assessment (HIRA) and Potential Extent (Present and Future)

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury	Essential Services or Infrastructure	Property Damage or Economic		
	1 Unlikely 2 Possible 3 Likely 4 Highly Likely	1 Limited 2 Significant 3 Critical 4 Catastrophic	1 Limited 2 Significant 3 Critical 4 Catastrophic	1 Limited 2 Significant 3 Critical 4 Catastrophic		
HYDROLOGIC Hazards						
DROUGHT	4	1	2	3	8.0	Entire Town. Areas susceptible to drought and dry conditions include farms and orchards, nurseries, and maple sugar operations. Water Supplies: residences with private dug wells and Town water supplies (Warner Village Water District wells). Drought means increased risk of brush fire with dry vegetation (see Wildfire). Gravel roads are affected because Town can't grade them when water is low. Fire ponds/dry hydrant supplies can run dangerously low; see APPENDIX A for a list. When fire ponds or dry hydrants are low, response time increases as the Department needs to draw from the Warner River.
WILDFIRE Brushfire, Outdoor Fires, Accidental, etc	3	3	2	1	6.0	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. 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: entire Mink Hills Area and its trail system and Mount Kearsarge and its trail system, Sunapee Ragged Kearsarge Regional Greenway trails. Much of the Town is wooded and forested and sections would be difficult to access in case

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Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
						of wildfire. Mount Kearsarge has about 116 homes/600 people, Waldron Hill Road (40 homes), Collins Road (16 homes), West Roby Road (14 homes), Chemical Lane (13 homes), and many more are one-egress roads could be difficult to evacuate should wildfire encroach. Most remote roads/areas of Town include those listed under High Wind. Inaccessible locations are more vulnerable to wildfire impacts because fire crews and emergency personnel have greater difficulty responding quickly to fires in these locations. Slash and brush are found on the ground on Kearsarge Mountain (State-owned). The Mink Hills area and the Mason Hill/Couchtown Road area are potential wildfires waiting to happen.
Cold Weather Storms (ATMOSPHERIC Hazards)						
WINTER STORMS, BLIZZARD (winds >35 mph, visibility <0.25 mile, >3 hours), NOR'EASTER (tropical pattern, low pressure, follows East Coast)	4	2	2	2	8.0	Entire Town. Particular areas of concern during winter weather include high density areas and vulnerable populations. The entire road network is susceptible to winter conditions, including the state roads. Local Town roads are also often difficult to travel. Many accidents occur on I-89 during storms. Many local roads, especially in the Mink Hills or along Mount Kearsarge have sharp incline/decline and cars have trouble traveling the road during winter conditions. The interstate I-89 and Exit 7, Exit 8 & Exit 9 ramps are major travel ways for residents and commuters through the Town as is NH 103. Wooded and forested sections of Town are vulnerable to snow, ice effects and power failure. Much of the Town is wooded and forested and sections are difficult to access with trees and power lines down on the residential roads. Mount Kearsarge has about 116 homes, Waldron Hill Road (40 homes), Collins Road (16 homes), West Roby Road (14 homes), Chemical Lane (13 homes), and many more are one-egress roads where roads are often blocked by trees or powerlines. Local government operations [Warner Town Hall, Public Works Department, Police Department, Fire & Rescue Department, and Emergency Management] 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.

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
ICE STORM	4	2	3	2	9.3	Entire Town. See also Winter Storms. Telecomm towers on North Road, Route 103 East, Kelly Hill Road, Kearsarge Mountain Road and Mount Kearsarge Tower as well as Department antennas could have high impacts from snow, ice, and blizzards . Residences on Mt. Kearsarge can become isolated. Electric and Utility lines: On Town roads, the ice can weigh down trees and branches, causing breakage and downed power lines. Ice storms historically create more damage than snowstorms. Eversource is Warner’s electricity provider). The Department of Public Works keeps up with the snowfall, but ice storms require more time and resources to keep the roads safe. Warming shelters can be opened.
Extreme Temperatures (ATMOSPHERIC Hazards)						
COLD WAVE Wind Chill, Freezing	4	2	2	1	6.7	Entire Town. The socially vulnerable populations of Warner will be more vulnerable to cold waves and power outages. Age restricted communities like Pine Rock Manor and North Ridge Estates have higher concentrations of people who may require assistance during extreme cold. See also Winter Storms and Ice Storms .
HEAT WAVE Excessive Heat	4	2	1	1	5.3	Entire Town. Groups most susceptible to extreme heat or cold include: Simonds School, Pine Rock Manor Assisted Living, Pleasant Lake Estates Manufactured Homes, Community Action Program Building, North Ridge Estates 55+, other senior homes or housing facilities. Elder residences or those without air conditioning are especially vulnerable to high heat events and should be moved to air conditioned (cooling) or warming facilities such as the Town Hall or the Pillsbury Free Library. 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.
Flooding (HYDROLOGIC Hazards)						
DAM FAILURE Water Overtop, Breach, Beaver, etc.	2	1	4	1	4.0	There are no High Hazard (H) dams in the community, nor are there Significant (S) Hazard dams. Two dams are Low Hazard (L) , Silver Lake Dam (Town-owned) and Bear Pond Dam (Contoocook Village Precinct). The Silver Lake gate valves need to be replaced because they cannot close. Other active Non-Menace (NM) dams are in Town could be more likely to experience dam failure (See APPENDIX A for list)

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
						<p>Beaver dams carry a high probability of flooding and potential for breakage. Mink Hills, North Road (French Brook), Mason Hill (Bagley Pond), Poverty Plains Road (wetland culvert), Schoodac Road (Schoodac Brook), Pumpkin Hill Road (Childrens Brook), and Silver Lake all have beaver dams that could wash out roads.</p> <p>Dams in other Towns could have a downstream impact should they fail or release too much water. Dams at Lake Todd and Blaisdell Lake flow into Lake Massasecum which flows into the Warner River.</p>
<p>INLAND FLOODING Rain, Snow Melt, Flash Floods- Cause Ditch Erosion, Washouts, Pond Overtop, etc</p>	4	2	3	3	10.7	<p>Entire Town, Floodplains of Warner River. Major watercourses include Amey Brook, Ballard Brook, Barclay Brook, Bartlett Brook, Bradley Brook, Childrens Brook, Colby Brook, Davis Brook, Frazier Brook, French Brook, Hardy Spring Brook, Knight Meadow Brook, Meadow Brook, Silver Brook, Schoodac Brook, Slaughter Brook, Stevens Brook, Willow Brook. Water Bodies include Tom’s Pond, Silver Lake, and Pleasant Pond. Low Hazard Dams Silver Pond Dam and Bear Pond Dam are unlikely to flood. Other recreation ponds and several dams can flood. Any of these waters could flood local roads, homes, buildings and sites such as Bagley Park and Riverside Park.</p> <p>Runoff from roadways or heavy rain or snowmelt can cause floods and washouts over the Entire Town. Regular washout locations include Schoolhouse Lane, Cummingsham Pond Road, Harriman Lane, Howe Lane, Burnt Hill Rd, Old Pumpkin Road, Brown Road, Red Chimney Road, Waterloo Street, Pumpkin Hill Rd, East Joppa Road, Connors Mill Rd, Retreat Road, and several more. (See also Aging Infrastructure) Roads, bridges, drainage systems and areas of past, repaired, or existing. Horne Street, West Joppa Road and Mason Hill Road have been recently repaired with FEMA funding. With I-89, Exits 7-8-9 ramps, and NH 103 running through Town, motorists need to be wary of potential flooded infrastructure.</p>
<p>RIVER HAZARDS Flood, Ice Jams, Scouring, Erosion, Channel Movement, Debris, etc</p>	4	2	3	3	10.7	<p>Warner River and its Floodplains. Also the major Brooks (see list in Inland Flooding), especially Schoodac Brook (seasonal), Childrens Brook, Stevens Brook, Tom’s Pond. Because of the high volumes and swift moving Rivers, bank erosion, scouring and channel movement are hazards of potential concern.</p>

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
						<p>Erosion of banks is presently occurring include Warner River bank in the area of East Roby District Road, Slaughter Brook at Horne Street, and at Retreat Road.</p> <p>Ice jams could endanger the dams and nearby facilities and have the potential to recur. Areas of the Warner River at West Joppa Road covered bridge, Waterloo Road covered bridge, Morse Lane, and the Tom Pond area are regularly experiencing winter ice jams. Floating debris down the Rivers and Brooks can accumulate at bridges and dams.</p>
GEOLOGIC Hazards						
EARTHQUAKE >4.0MM	1	1	1	1	1.0	<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: Simonds Elementary School, Kearsarge Mountain, Main Street Area, Pine Rock Manor, Churches, Pillsbury Free Library.</p> <p>Damage to utility poles and wires, roadways and infrastructure could be significant.</p> <p>Areas with underground utilities (water and sewer) on Main Street, community water systems, and the old, historic buildings are particularly susceptible to earthquake.</p>
LANDSLIDE Soil, Rockslide, Excavation Areas, etc	1	1	1	1	1.0	<p>Slopes greater than 25%, including roads with steep ditching or embankments are most vulnerable to landslide. Roads with steep ditching or embankments are most vulnerable to landslide include the Mink Hills. Landslide is a fairly uncommon hazard but one that can have devastating effects, including property damage and in some cases, loss of life.</p> <p>The excavation sites in Town are potential sites of landslide. In Warner, they are well maintained and reclaimed: Pleasant Lake (Town owned), Poverty Plains Road, Flea Market Route 103E, Schoodac Road (private)</p>
Public Health (BIOLOGIC) Hazards	4	3	4	3	13.3	
Swimming Water Quality						<p>Entire Town. Congregate populations more vulnerable to infectious diseases: Simonds Elementary School, Boys and Girls Club, North Ridge Estates 55+, Pine Rock Manor Assisted Living.</p>

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
						<p>Local stores and eateries along Main Street, the Farmer’s Market, farms, Foothills Restaurant, Market Basket increase the risk of exposure to and transfer of food-borne illness, causing potential public health concerns. See also sites listed in APPENDIX A.</p> <p>The Town’s local Point of Dispensing (POD) is located at the Hopkinton High School.</p> <p>The many forests, conservation areas, agriculture, wooded areas, and ponds can host ticks (Lyme, Anaplasmosis, Leptospirosis) and mosquitos (Arboviral) can host many bacteria (West Nile, EEE, Equine Infectious Anemia, etc) which carry diseases. The Mink Hills, conservation lands, Sunapee Kearsarge Ragged Greenway Trail, Mount Kearsarge, Warner River which attract people can also enable transmission.</p> <p>Waters and beaches susceptible to high bacteria counts in the summer include Silver Lake. Silver Lake Pond beach and Pleasant Lake are the most likely locations to be influenced by swimming water quality. Cyanobacteria is a less likely summer occurrence than e. coli.</p>
Air Quality						<p>Entire Town. Air quality is generally good but can be influenced from wildfires in Canada and in the mid-west. Vulnerable populations include the youngest and elderly. I-89 vehicular traffic contributes to local air quality decline.</p> <p>Regionally, Wheelabrator in Penacook and the Merrimack Power Station are considered the largest source of local air pollution, as is vehicular traffic of I-93 and other highways.</p>
Drinking & Surface Water Quality						<p>Aquifers and surface water. Water is treated for municipal Warner Village Water District customers but most residents obtain their water from private wells or community water systems (25+ users). A large aquifer runs underneath the Warner Rive and I-89 and is now better protected by a new Groundwater Protection Ordinance.</p>
Infectious Diseases						<p>Most susceptible transfer sites: Schools/daycares, health clinics, eating establishments, populated areas, large employers, senior apartments, stores and public assembly venues (see Appendix A),</p>
Arboviral Diseases						<p>Entire Town. The Town is completely forested except for the I-89 and Nh 103 corridors. The Town has many intermittent brooks, streams, and wetlands. Mosquitos have countless locations to breed.</p>

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
Tickborne Diseases						Entire Town. With much of the Town forested and available for recreational usage, there is ample opportunity for ticks to thrive and transmit disease to humans. Large animals including deer, moose, and bear are found throughout Warner.
Substance Misuse						Entire Town. All populations are vulnerable to the misuse of substances, illegal drugs, prescription drugs, OTC drugs, alcohol, and other substances.
SOLAR STORMS AND SPACE WEATHER Hazards						
GEOMAGNETIC STORMS Aurora Borealis	4	4	2	3	12.0	Entire Town. Emergency dispatch would be greatly impacted by any solar storm events. Communications failure would be worse with antenna disruption at the Mount Kearsarge Tower communications antenna array. Locally, the Emergency Management, Fire, Police Depts and Public Works Department communications equipment could be subject to solar storms. If high tension transmission lines were disrupted regionally, the community could lack electricity until the grid is restored. 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: Warner Town Hall, Highway Department, Police Department, and Fire Department. The aurora borealis is regularly seen on Mount Kearsarge, indicating geomagnetic storms are present without effects. The Town's technology is most vulnerable to space weather, especially communications systems and electrical grid. Telecommunications Towers on North Road, Route 103 East, Kelly Hill Road, Kearsarge Mountain Road and Mount Kearsarge Tower as well as Department antennas, TDS Switching stations, Warner Village Water District pump stations and wells serve residents. Eversource electricity (powerlines & substation) may be interrupted.
SOLAR RADIATION	4	4	2	3	12.0	
RADIO BLACKOUT	4	4	2	3	12.0	
Warm Weather Storms (ATMOSPHERIC Hazards)						
HIGH WINDS	4	2	2	1	6.7	Entire Town. Most high wind -vulnerable areas include populated buildings, high-density locations, and utilities serving residents and

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
						<p>businesses: 5 Telecomm towers- North Road, Route 103 East, Kelly Hill Road, Kearsarge Mountain Road and Mount Kearsarge Tower; Antennas on Highway Department, Police Station, and Fire Station; and TDS Telecom Remote Stations all over Town.</p> <p>High Density Areas can have greater impacts: Main Street Village area, Tom’s Pond, and the Pleasant Lake Estates Manufactured Homes, Northeast Catholic College.</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 high wind events. The most remote subdivisions include Cunningham Pond in the Mink Hills, the Kearsarge Mountain, Collins District, Horne Street and Howe Lane.</p> <p>A large number of one-egress or cul-de sac roads could be cut off from the rest of the Town from downed trees and power lines: Kearsarge Mtn Road, Lang Bridge, Collins District, Horne Street, Howe Lane, Bagley Hill, Apple Tree Lane, Tom’s Pond Road, West Joppa Road, Kelly Hill Road, Loud Lane, Old Denny Hill Road, Old Pumpkin Hill Road, Duck Pond, Willoughby Colby Road, Mink Hill, Waldron Hill.</p> <p>Agricultural areas are vulnerable to damage from High Winds (see list above in Drought)</p> <p>Older, or historical buildings are vulnerable to high wind damage: Warner Village/Main Street Area, Museums, Historic Society Buildings. Floods are also possible with severe windstorm events (see Inland Flooding).</p>
THUNDERSTORMS	4	2	1	1	5.3	<p>Entire Town. Areas of particular concern include dams, bridges, vulnerable populations, Schools, assisted living or over age 55+ communities. Roadways (fallen trees), electrical power utilities, communications network, local government operations are susceptible to damage to debris impacted infrastructure.</p> <p>See also High Winds.</p>

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
DOWNBURSTS	4	2	1	1	5.3	Entire Town. Most high wind -vulnerable areas include populated buildings, high-density locations, and utilities serving residents and businesses: Kearsarge Mountain Road, Main Street Village area, Tom’s Pond, and the Pleasant Lake Estates Manufactured Homes. 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 downburst events. See also High Wind events.
LIGHTNING	4	1	1	1	4.0	Entire Town. Areas of particular concern to lightning include critical facilities, high density areas, high elevation such as the Main Street Village area, Tom’s Pond, the Pleasant Lake Estates Manufactured Homes, Northeast Catholic College. Town Facilities such as Fire Station, Highway Garage, Police Department and Transfer Station would be vulnerable to lightning . Telecommunications Towers on North Road, Route 103 East, Kelly Hill Road, Kearsarge Mountain Road and Mount Kearsarge Tower as well as Department antennas would have high impacts should lightning strike. 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. Kearsarge Indian Museum Telephone Museum, Old Meetinghouse, Old Fire Station, Old Odd Fellows could be vulnerable. 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 : entire Mink Hills Area and its trail system and Mount Kearsarge and its trail system, Sunapee Ragged Kearsarge Regional Greenway trails. Other aboveground utilities, transformers, water towers are vulnerable to lightning : TDS Telecom switching stations, Warner Village Water District pump stations and wells.

Natural Hazard Categories with Technological, Human Hazard Categories	Probability of Occurrence in 10 Years 1 Unlikely 2 Possible 3 Likely 4 Highly Likely	Severity of Impact to			OVERALL RISK 1.0 -16.0	Potential Locations /Extent in Town (Present and Future)
		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
TORNADOES	4	2	2	1	6.7	Entire Town. Most high wind -vulnerable areas include populated buildings, high-density locations, and utilities serving residents and businesses: Kearsarge Mountain Road, Main Street Village area, Tom’s Pond, and the Pleasant Lake Estates Manufactured Homes. 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 tornado events. See also High Wind events.
HAIL	4	1	1	1	4.0	Entire Town. Areas of particular concern include damage to traveling vehicles on I-89 or NH 103, vulnerable populations, Schools, assisted living or over age 55+ communities. Roadways (fallen trees), electrical power utilities, communications network, local government operations are susceptible to damage to debris impacted infrastructure. See also High Winds .
TROPICAL AND POST-TROPICAL CYCLONES Hurricanes, Tropical Storms, Tree Debris	3	1	2	2	5.0	Entire Town. Most high wind -vulnerable areas include populated buildings, high-density locations, and utilities serving residents and businesses: 5 Telecomm towers- North Road, Route 103 East, Kelly Hill Road, Kearsarge Mountain Road and Mount Kearsarge Tower; Antennas on Highway Department, Police Station, and Fire Station; and TDS Telecom Remote Stations all over Town. High Density Areas can have greater impacts: Main Street Village area, Tom’s Pond, and the Pleasant Lake Estates Manufactured Homes, Northeast Catholic College. 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. The most remote subdivisions include Cunningham Pond in the Mink Hills, the Kearsarge Mountain, Collins District, Horne Street and Howe Lane. A large number of one-egress or cul-de sac roads could be cut off from the rest of the Town from downed trees and power lines : Kearsarge Mtn Road, Lang Bridge, Collins District, Horne Street, Howe Lane, Bagley Hill, Apple Tree Lane, Tom’s Pond Road, West Joppa Road, Kelly

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		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
						Hill Road, Loud Lane, Old Denny Hill Road, Old Pumpkin Hill Road, Duck Pond, Willoughby Colby Road, Mink Hill, Waldron Hill. Agricultural areas are vulnerable to damage from High Winds (see list above in Drought) Older, or historical buildings are vulnerable to high wind damage: Warner Village/Main Street Area, Museums, Historic Society Buildings. Floods are also possible with severe windstorm events (see Inland Flooding).
NOT APPLICABLE TO TOWN & REGION						
COASTAL FLOODING (Hydrologic Hazard)	n/a	n/a	n/a	n/a	n/a	
AVALANCHE (Geologic Hazard)	n/a	n/a	n/a	n/a	n/a	
TSUNAMI (Geologic Hazard)	n/a	n/a	n/a	n/a	n/a	
VOLCANIC ACTIVITY (Geologic Hazard)	n/a	n/a	n/a	n/a	n/a	
Technological and Human Hazards						
AGING INFRASTRUCTURE Bridges, Roads, Stormwater, Water Treatment, Wastewater	not scored	not scored	not scored	not scored	N/A	<p>◆ Entire Town. Most dams, culverts, and bridges could experience impacts of aging infrastructure. West Joppa Road Covered Bridge has been damaged by high water debris in the past. Waterloo Covered Bridge is aging. Some bridges are red-listed by the state and will be replaced. Many undersized culverts remain vulnerable to flooding. The Town's roads are becoming more difficult to maintain and rehabilitate because of lack of funding and miles of roads.</p> <p>◆ Underground line or pipes are often old and subject to breakage during earthquake or aging materials, including some Warner Village Water District water lines and sewer lines.</p>

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		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
CONFLAGRATION (FIRE)	not scored	not scored	not scored	not scored	N/A	<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 on farms, 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. The Main Street/Village Area could be subject to conflagration. The Exit 9 business area is densely situated. A haz mat fire on one-egress Chemical Lane could be devastating to residents. Numerous businesses utilize hazardous materials. See for APPENDIX A hazardous materials and Main Street business lists.</p> <p>Vehicle fires could occur anywhere, parking lots, driveways, roadways. Interstate I-89 and Exit 7, 8 & 9 ramps along with NH 103 are highly traveled. See also APPENDIX A.</p> <p>Human-started fires could occur in the Town Forest and other wooded or popular conservation areas. See Lightning and High Wind for remote area lists.</p>
HAZARDOUS MATERIALS Haz Mat Spills, Brownfields, Trucking, etc	not scored	not scored	not scored	not scored	N/A	<p>Most likely routes of vehicular traffic transport of hazardous materials include I-89, NH 103, and the heavily-traveled Exit 9 area with roundabout and gasoline filling stations. Exit 7 and Exit 8 also lead to NH 103 and NH 127. Other local roads could have serious transportation accidents involving hazardous materials.</p>
RADIOLOGICAL Trucking, Stationary Sites, etc (Not within a 10-mile Emergency Planning Zone (EPZ))	not scored	not scored	not scored	not scored	N/A	<p>Vulnerable areas for targeted evacuation include Warner Main Street/Village Area, Simonds Elementary School and Community Center all along NH 103, Pine Rock Assisted Living and for sale college campus (Kearsarge Mountain Rd).</p> <p>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 Kearsarge Heating Oils, Rymes Propane, Aubuchon Hardware, Warner Power, Circle K Irving, Evans Fuel Mart, Madgetech, Chemical Lane.</p>

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		Human Injury	Essential Services or Infrastructure	Property Damage or Economic		
	1 Unlikely 2 Possible 3 Likely 4 Highly Likely	1 Limited 2 Significant 3 Critical 4 Catastrophic	1 Limited 2 Significant 3 Critical 4 Catastrophic	1 Limited 2 Significant 3 Critical 4 Catastrophic		Possible brownfields sites to be aware of include: No brownfields sites have been identified in Warner, although the probability is high in some historic industrial locations along the Warner River. Radiological Unlikely. Warner is outside of the Seabrook Nuclear Power Plant's 10-mile Emergency Planning Zone (EPZ). I-89, the Exits 7-8-9 ramps, and NH 103 are the main highways through Town which would be most likely driven by either those seeking refuge from Seabrook or offline Vermont Yankee accidents or by trucks carrying radiological waste. Rerouting traffic can be dangerous with potentially severe transportation accidents. Warner commuters also use nearby NH 114 and NH 127. See also Transportation Crash . Occupational facilities such as hospitals, clinics, school laboratories, industries could use radiological materials and equipment.
LONG TERM UTILITY OUTAGE Power, Water, Sewer, Gas, Internet, Communications, Live Wire Danger, etc	not scored	not scored	not scored	not scored	N/A	Entire Town. Electrical outages are often town wide, but high density areas or vulnerable populations are of greatest concern: Simonds School, Pine Rock Manor, Pleasant Lake Estates 55+. Lutheran Latvian Camps, and on Kearsarge Mountain Road. Melvin Mills is considered a communication dead zone. Power outages (Eversource) may last for several days before service is restored from a large event. Systems failures could affect Town businesses and local government on an isolated scale. The internet (TDS Telecom) 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. Telecommunications towers are located on North Road, Route 103 East, Kelly Hill Road, Kearsarge Mountain Road and Mount Kearsarge Tower. Antennas are located on Highway Department, Police Station, and Fire Station; and TDS Telecom Remote Stations all over Town. Mount Kearsarge Tower with County/ State/federal repeaters is an important tower in Town. The primary source of electricity for the Main Street Village area is the substation on School Street.

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		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
						<p>The Town is serviced by the Capital Area Mutual Aid Compact, which does all the emergency medical service and Fire dispatching. They have redundant capabilities and are regularly upgrading their systems. The Town has water and sewer systems within Warner Village Water District infrastructure, including the Wastewater treatment facility, water pumping stations, and 2 water tanks (Old Denny Hill and Latting Lane). These systems are located in the Main Street Village Area and Kearsarge Mountain Road. Other utility systems, such as LP gas, water wells, sewer systems, tanks and more are available. Rymes Propane is a local option for LP gas and deliveries. See also Aging Infrastructure and APPENDIX A.</p> <p>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 one-egress roads and remote areas). The agricultural farms (feeding or dairy animals) should be monitored (See Drought)</p>
TRANSPORTATION CRASH Vehicle, Airplane, Helicopter, Rail, Interstate, Pedestrian, Bicycle,	not scored	not scored	not scored	not scored	N/A	<p>I-89 and its Exit 7, Exit 8, Exit 9 ramps, NH 103 are the main highways through Town and have the most crashes. Rerouting traffic can be dangerous resulting in other potentially severe crashes. Warner commuters also use nearby NH 114 and NH 127. Dangerous locations and intersections include areas of steep slopes.</p> <p>Crashes also occur throughout the community at rural intersections, along hills and s-curves. See also MAPS 1-4.</p> <p>Crashes increase during hazard events, winter weather, spring snow melt (washouts) and windstorms. High density areas, such as Main Street Village area, encourage bicycling and pedestrians and but also have the potential for serious crashes.</p> <p>The Town may have alternative crash potential, such as airplanes. In Warner, small-engine planes have crashed in the Mink Hills. Mount Kearsarge represents a high elevation challenge.</p>
MASS CASUALTY INCIDENT As a result of any hazard event	not scored	not scored	not scored	not scored	N/A	<p>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.</p>

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		Human Injury 1 Limited 2 Significant 3 Critical 4 Catastrophic	Essential Services or Infrastructure 1 Limited 2 Significant 3 Critical 4 Catastrophic	Property Damage or Economic 1 Limited 2 Significant 3 Critical 4 Catastrophic		
						Any mass casualty event could be localized to a certain event. Locations and occasions of potential public unrest include: Town & School Meetings, voting day, local board meetings, during visits from political candidates, large events such as Old Home Day, Veteran's Parade, School sports events, Fall Foliage Festival, political rallies. The Town shelter is located at the Town Hall (75 capacity) and the Pillsbury Free Library is available as a warming/cooling shelter. Warner is a member of the Capital Area NH Public Health Network and other regional emergency groups. Warner Fire and Rescue could provide EMS and transport to a larger facility such as Concord Hospital in 20 minutes.
TERRORISM/ VIOLENCE Active Shooter, Hostage, Public Harm, Civil Disturbance/ Unrest, Politically Motivated Attacks, Incendiary Devices, Sabotage, Vandalism, etc	not scored	not scored	not scored	not scored	N/A	Unlikely, but Possible. Terrorism/ violence could possibly occur anywhere in Entire Town and could result in mass casualty . Most susceptible sites could include: Town Hall, Bagley Park, Pillsbury Free Library, Simonds Elementary School, CAP Senior Building, Northeast Catholic College, Post Office, Market Basket, NH State Liquor Store, Main Street Book-Ends, United Church of Warner, Sugar River Bank, McDonalds, Masonic Hall, Evans Expressmart (gas), or Circle K (gas). All other governmental or state facilities in Town Hall, Police Station, Fire Station, Highway Garage, Transfer Station, Warner Village Water District, the 5 telecomm towers. Private manufacturing or industrial businesses with large quantities of hazardous materials, like Madgetech, Brayshaw Printing, Rymes Propane or Kearsarge Heating Oil could be possible terrorism targets. Sabotage would be most likely to occur at Town or Governmental Facilities to halt operations or computer systems: Town Hall, Police Station, Fire Station, Highway Garage, Transfer Station, Warner Village Water District, Simonds School, TDS Telecom. Vandalism could occur at dams, under bridges, other public water supplies or towers, cemeteries, vacant buildings, beaver dams, recreation areas, etc. Hostage and active shooter situations could most likely occur domestically anywhere in the Town or in buildings and schools: Town Hall, Simonds School, Sugar River Bank. Sites of local significance, such as key bridges, historical sites or monuments, dams, or other public places etc could become potential

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		Human Injury	Essential Services or Infrastructure	Property Damage or Economic		
	1 Unlikely 2 Possible 3 Likely 4 Highly Likely	1 Limited 2 Significant 3 Critical 4 Catastrophic	1 Limited 2 Significant 3 Critical 4 Catastrophic	1 Limited 2 Significant 3 Critical 4 Catastrophic		
						sites of Terrorism/ Violence : Covered Bridges, Bagley Park, Silver Lake beach, Rollins State Park. Entire Town, but isolated incident. Hostage situations are isolated events. Locations where hostages could be taken include: Municipal Building and other public buildings, Schools, banks, Post Office, workplaces, grocery and convenience stores, restaurants, high density population areas, domestic home situations. None , locations where civil disturbance could occur should be limited. Occasions include Town Meetings, voting day, during visits from political candidates, sporting events, large events such as Old Home Day or veteran's parades, school graduation. Locations include Schools, recreational fields, Municipal Building, stores, restaurants, establishments serving alcohol, high density population areas (Warner Junction), one egress neighborhoods, Police and Fire stations.
CYBER EVENT Computer Systems Attack, Website Overtake, Cloud Data Breach, Telephone Rerouting, Identity Theft, Phishing, Ransomware, Virus, Phone Scams, etc	not scored	not scored	not scored	not scored	N/A	Town fileserver or cloud, School District fileserver or cloud. A cyber event could occur in any digital location with no warning. Entire Town. Cyberattack could target Town websites, computer systems, cloud data systems, archival records, email phishing, etc. Town Hall, Police Department, Fire Department, Warner Water Village Precinct, Transfer Station, Highway Department, Pillsbury Free Library, or Historical Society. mail scams and identity theft are likely regular problems for residents and businesses. Towns often post known attempts on websites. Sugar River Bank, Madgetech, other large businesses (See APPENDIX A).

Source: Warner Hazard Mitigation Committee

Central NH Region Major Disaster Declarations, 1973-2024

The Central NH region, which encompasses parts of Merrimack County (**18** communities) and Hillsborough County (**2** communities), has been damaged by **31** presidentially-declared major disasters [DR-] and presidentially-declared emergencies [EM-] in the last **50** years between **1973-2024**. Some of these are double-counted by being designated both EM- and DR- in the same county. Yet storms that qualify as a disaster in one community, like Warner, may not yield the same damages in surrounding towns. When the Pre-Damage Assessment (PDA) figures are provided to FEMA after a storm, sometimes they are not high enough on a County basis to be declared a disaster.

Although a natural disaster typically befalls multiple counties in New Hampshire, only those major disaster (DR-) or emergency declarations (EM-) within either Hillsborough County or Merrimack County were identified in this Plan.

Disaster declarations [DR-] within a county enable 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. EM- declarations typically open Hazard Mitigation Grant Program (HMGP) plan and project funding for communities with an active **Hazard Mitigation Plan**.

Over the last **20** years (**2005-2024**), the Central NH region containing communities within Merrimack and Hillsborough Counties experienced **18** presidentially- declared natural major disasters [DR-] or presidentially- declared emergency declarations [EM-] which differ between DR- or EM- depending on which county was declared. The earliest Central NH region declarations spanned **1973** to **2004** (**32** years) and yielded total **13** disasters of both [DR-] and [EM-].

PUBLIC ASSISTANCE GRANT FUNDING

For the global COVID-19 pandemic DR-4516 from **2020-2022**, the Town received **\$348k** in COVID-related funding from multiple programs. The last weather disaster declared in Merrimack County in which Warner is located was the **October 2017** Wind and Rainstorm (Tropical Storm Phillippe). The last weather event for which Warner applied for and received federal Public Assistance funding (**\$11k**) was this same storm. Details of Central NH region declared disasters and emergency declarations since **1973** and federal funding provided to the Town of Warner are displayed in **Table 4.4**. Most of these disasters will be described within the following **Past Disasters and Severe Weather Events** section.

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Table 4.4

Central NH Region (Merrimack & Hillsborough Cty) Major Disaster Declarations, 1973 to 2024

FEMA DR- or EM-	Year	Local Disaster Name	Incident Period	DR-MER	DR-HIL	DR- Other Cty	\$ FEMA Public Assistance (PA) Funding to TOWN
Next DR							
4516 EM-3445	2020	(COVID-19 Pandemic) Novel Coronavirus Public Health Pandemic	Jan 20, 2020-April 2022	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$0*
4355	2017	Severe Rain and Wind Storm from Tropical Storm Phillippe	Oct 28-30	MER	---	BEL-CAR-COO-GRA-SUL	\$10,515
4209	2015	Severe Winter Storm and Snowstorm	Jan 26-28	---	HIL	ROC-STR	\$0
4105	2013	Severe Winter Storm and Snowstorm	Feb 8-10	MER	HIL	BEL-CAR-CHE-STR-SUL-ROC	\$15,858
4095 EM-3360	2012	Hurricane Sandy	Oct 26-Nov 8	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$2,359
4049	2011	(Halloween) Severe Storm and Snowstorm	Oct 29-30	---	HIL	ROC	\$0
EM-3344	2011	(Halloween) Severe Storm and Snowstorm	Oct 29-30	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$0
4026	2011	Tropical Storm Irene	Aug 26-Sep 6	MER	---	BEL-COO-CAR-GRA-STR-AUL	\$11,248
EM-3333	2011	Tropical Storm Irene	Aug 26-Sep 6	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$0
1913	2010	Severe Storms and Flooding	Mar 14-31	---	HIL	ROC	\$0
1892	2010	High Winds, Rain, Snow	Feb 23-Mar 3	MER	HIL	GRA-ROC-SUL-STR	\$11,849
1812	2008	(Ice Storm) Severe Winter Storm	Dec 11-23	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$16,438
EM-3297	2008	(Ice Storm) Severe Winter Storm	Dec 11-23	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$0
1799	2008	Severe Storms and Flooding	Sep 6-7	MER	HIL	---	\$0
1782	2008	Tornado, Severe Winds, Heavy Rains	24-Jul	MER	---	BEL-CAR-ROC-STR	\$13,805
1695	2007	Severe Storms and Flooding	Apr 15-23	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$131,514
1643	2006	(Mother's Day) Severe Storms and Flooding	May 12-23	MER	HIL	BEL-CAR-GRA-ROC-STR	\$286,312
1610	2005	(Columbus Day) Severe Storms and Flooding	Oct 7-18	MER	HIL	BEL-CHE-SUL	\$75,357
EM-3258	2005	Hurricane Katrina Evacuation	Aug 29-Oct 1	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$0
EM-3211	2005	Snowstorm	March 11-12	---	HIL	CAR-CHE-ROC-SUL	\$0

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FEMA DR- or EM-	Year	Local Disaster Name	Incident Period	DR-MER	DR-HIL	DR- Other Cty	\$ FEMA Public Assistance (PA) Funding to TOWN
EM-3207	2005	Snowstorm	Jan 22-23	MER	HIL	BEL-CAR-CHE-GRA-ROC-STR-SUL	\$9,136
EM-3193	2003	Snowstorm	Dec 6-7	MER	HIL	BEL-CAR-CHE-COO-GRA-SUL	\$9,409
EM-3177	2003	Snowstorm	Feb 17-18	MER	HIL	CHE-ROC-STR	\$5,974
EM-3166	2001	Snowstorm	Mar 5-7	MER	HIL	CHE-COO-GRA-ROC-STR	\$7,587
1231	1998	Severe Storms and Flooding	Jun 12-Jul 2	MER	HIL	BEL-CAR-GRA-ROC-SUL	\$0
1199	1998	Ice Storms	Jan 7-25	MER	HIL	BEL-CAR-CHE-COO-GRA-STR-SUL	\$0
1144	1996	Severe Storms and Flooding	Oct 20-23	MER	HIL	GRA-ROC-STR-SUL	\$0
1077	1995	Storms and Floods	Oct 20-Nov 15	MER	---	CAR-CHE-COO-GRA-SUL	\$0
EM-3101	1993	Blizzards, High Winds and Record Snowfall	Mar 13-17	MER	HIL	BEL-CAR-CHE-COO-GRA-ROC-STR-SUL	\$4,406
917	1991	Hurricane Bob, Severe Storm	Aug 18-20	---	HIL	CAR-ROC-STR	N/A
876	1990	Flooding and Severe Storm	Aug 7-11	MER	HIL	BEL-CAR-CHE-COO-GRA-SUL	N/A
789	1987	Severe Storms, Flooding	Mar 30-Apr 11	MER	HIL	CAR-CHE-GRA-ROC-SUL	N/A
771	1986	Severe Storms, Flooding	Jul 29-Aug 10	---	HIL	CHE-SUL	N/A
399	1973	Severe Storms, Flooding	Jul 11	MER	HIL	BEL-CAR-CHE-COO-GRA-STR-SUL	N/A
Weather Disasters DR- & EM-Pandemic Funds DR-4516*			Total Public Assistance to TOWN 1993-2023**				\$611,766
			Total GOFERR Assistance to TOWN 2020-2022*				\$347,573
* CARES Act/NH Governor's Office for Emergency Relief and Recovery (GOFERR) 2020-2022 https://www.goferr.nh.gov/welcome			Total Federal Disaster Funding to TOWN 1993-2023**				\$959,339

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 and include only PA and HMGP. PA dataset available at <https://www.fema.gov/openfema-dataset-public-assistance-funded-projects-details-v1> July 2023

To help reclaim some of the costs these disasters wrought on town property and infrastructure and for additional staff time, Warner 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 (**2023**). Warner in Merrimack County was eligible for reimbursement for up to a total of **28** disasters and emergency declarations. This detail is displayed previously in **Table 4.4** and is summarized to rounded in the forthcoming **Table 4.5** for each disaster. The most weather expensive disaster for Warner in terms of FEMA Public Assistance (PA) funds received for recovery was the **DR-1643 May 2006 Flood** after which Warner received **\$286k** for project funding to help repair local Town roads and several culverts, and for waterborne debris clean up and emergency services. Total PA funding to Warner to date totals over **\$611k**.

2020 GOVERNOR'S OFFICE FOR EMERGENCY RELIEF AND RECOVERY (GOFERR)

The NH Governor's Office for Emergency Relief and Recovery (GOFERR) at <https://www.goferr.nh.gov/> provides transparent review and access to the state's CARES Act - Coronavirus Relief Fund allocations for the DR-4516 COVID-19 Pandemic. The US HR 748 Coronavirus Aid, Recovery, and Economic Security (CARES) Act enacted 3/27/20 provided **\$1.25b** to the state and was one of several relief bills and funding sources for the COVID-19 disaster. The GOFERR is making these funds available through various programs. Municipalities, businesses, and individuals were to apply to several funding programs through GOFERR.

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Warner’s Past Disasters and Severe Weather Events

The Town of Warner 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 Warner and its residents. Public Assistance disaster funding opportunities open to communities when a disaster is declared within a county. The Town of Warner applied for and received this funding for several recently declared disasters.

Although New Hampshire experienced more disasters than those shown in **Table 4.5**, 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 proximity to Warner, will be included. Refer to the *State of New Hampshire Multi-Hazard Mitigation Plan 2023* 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 4.5 Local and Area Hazard Event and Disaster History (Sequential)**. 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 Warner in the last **5** years, this means the Hazard Mitigation Committee did not recall an event of significance since the **2019 Plan**.

COLOR KEY for **Table 4.5**:

Declared Disasters (DR-) or Emergency Declaration (EM-) in Merrimack County or Hillsborough County in Central NH Region NOT ELIGIBLE FOR PA Funding in Warner	DR- or EM- County ELIGIBLE FOR PA FUNDING PA \$ Received by Warner	Other Warner Local Hazard or Severe Weather Event	Regional Hazard Event with Warner Impacts
---	--	---	---

This breakdown of hazards is identical to the list of natural disaster categorizations found also in **3 GOALS AND OBJECTIVES**.

Table 4.5

Local and Area Hazard Event and Disaster History (Sequential- Lastest to Earliest)

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
TOWN TO ADD NEW EVENT ROWS HERE																			
TOWN TO ADD NEW EVENT ROWS HERE																			
Hazard Events 2024-2019 (Since Last Plan)																			
TOWN TO ADD NEW EVENT ROWS HERE																			
Regional Geomagnetic Storms (G), Solar Storms (S), and Radio Blackout Storms (R) in Solar Cycle 25	2024	Feb-July	No	N/A	No known local impacts, but regular after incident Space Outlook notifications, warnings, and watches for solar storms were released by NOAA to public. Events included: June 28 G4 warning, May 10-11, a G4 watch, June 10 S3, G2 and R2 scale warnings, Feb 26 R3 warnings, Mar 25 G3 S3 warnings, and more. Potential for widescale electrical disturbances or Capital Area emergency communications disruptions.	No known impacts were felt in Warner although the aurora borealis is observable on Mt. Kearsarge. This solar cycle is stronger than expected, yet milder than the previous cycle. In early May, largest aurora borealis was seen using phone cameras, kp9 level (max possible). Seen down through Florida.	CNHRPC, Warner Hazard Mitigation Committee, Space Weather Prediction Center (NOAA)										+		+
Regional Extreme Heat and Air Quality	2024	ANNUAL	No	N/A	Several Gray Maine NWS notifications of extreme heat events with several days over 90 degrees or heat indices with	In Concord, July 2024 had over 12 consecutive days 90 degrees F, with heat indices reaching into the	Warner Hazard Mitigation Committee,		+				+		+				+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/ Dam	Winter/ Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
Events, Thunderstorms					temperature and humidity over 90 degrees were sent over the summer, including June 18-20. NH DES sent out Air Quality Action Day notifications for Merrimack County on several occasions, including May 21-22. Thunderstorms typically occur during these extreme heat, humidity and air quality (smog) days. These heat, humidity, smog, and thunderstorm events are related to each other and to New England’s changing climate.	100s for some days. Warner populations have adapted their activities accordingly. Cooling is available at the Library – people of all ages have been hanging out more.	CNHRPC, National Weather Service, NH HSEM												
Warner & Regional Rain and Thunderstorms	2024	Jul 9, Jul 16	No	N/A	These recurrent summer thunderstorms occurred throughout New Hampshire and the Central NH region. Trees and powerlines down were the most common result. Lightning, wind and rainstorms are becoming commonplace.	Jul 9-11 – wind and heavy rain took out several large trees (no powerlines) on Kearsarge Mountain Road lower section. Power outages experienced on Pumpkin Hill Rd, Horne Street. July 16- wind and heavy rain, scattered power outages. About 1.5” of rainwater in 20 minutes in some places.	Warner Hazard Mitigation Committee, CNHRPC		+	+	+								+
Warner Lightning Strikes	2024	May 21	No	N/A	Likely these strikes occurred during regional thunderstorms.	Big storm around Warner. Thunder and lightning storm, moderate rain in Contoocook & north Concord.	Warner Hazard Mitigation Committee, CNHRPC			+	+								+
Warner Cyberattack (Fraud) of Town of Warner Accounts at	2024	April	---	N/A	It’s possible other branches or institutions were impacted by the cyberattack.	Town of Warner’s checking account was compromised at a local Town workstation in early 2024. Fund payout from online banking in the account was over	Warner Hazard Mitigation Committee, CNHRPC												+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/ Dam	Winter/ Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
Sugar River Bank																			
Warner Lightning Strikes	2024	Apr 30	No	N/A	Likely these strikes occurred during regional thunderstorms.	Thunderstorm with lightning strike Downtown West Main Street. Tripped fire alarm at Fire Station and surge protector at Town Hall East tripped, protected equipment but destroyed surge protector.	Warner Hazard Mitigation Committee, CNHRPC			+									+
DR-4799 Severe Winter Storms and Flooding	2024	Apr 3-4	DR-4799	N/A for Merr or Hills County	After a winter season of an extreme variation of temperatures and storms - wet snow dumps and melting- during winter 2023-2024, this early April N'oreaster walloped New Hampshire with 220,000 customers without electricity within one week after Eversource and NH Electric Cooperative cleaned up after the previous storm. Between 10-20" fell on the state, with wind gusts up to 50 mph. Not declared for Merrimack or Hillsborough Counties.	Apr 3/4, 2024 Nor'easter, impacted Warner and I-89 travelers. Utility outages, school closure, EOC on standby.	Warner Hazard Mitigation Committee, CNHRPC		+			+	+						+
Regional N'oreaster Winter Storm	2024	Mar 23-24	No	N/A	The entire state, Merrimack County and Central NH region experienced this winter storm event. Power was lost, trees downed, traffic delayed.	Multiple road closures – Schoodac, Poverty Plains, Farrell Loop south, Farrell Loop with Red Chimney intersection, NH 103 East, warming center opened at United Church of Warner, power out for 3-	Warner Hazard Mitigation Committee, CNHRPC, NHPR		+			+	+						+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
						4 days. Someone drove over Schoodac road closure and caused significant fiber optic outage (line was down).													
Warner Snow Melt/Mud Season Erosion	2024	Jan-Mar	No	N/A	The rest of Central NH experienced many snowfall, rainfall, and snowmelt conditions in late winter 2024. These conditions could freeze one night and cause dangerous muddy conditions in the morning.	Early snowmelt encouraged OHRV use on Class VI road, which caused problems along streams. Creating siltation issues on Lake Massasecum in Bradford, Town can't do much because of maintenance of Davis Class VI Rd. May have to turn into fire lane. Potential fire event is possible because of drought conditions, need fire lane access.	CNHRPC, Warner Hazard Mitigation Committee					+	+	+					
DR-4771 Severe Storms and Flooding Extreme Cold	2024	Jan 9 - 14	DR-4771	N/A for Merr or Hills County	About 7,500 total customers were without electricity during this wet snow, high temps, rain, and severe wind event across the state. Major coastal flooding was experienced with wind gusts exceeding 60 mph. Hampton was flooded by several feet of water and seafoam and opened its warming shelter through high tide. In Warner, the earlier Jan 6-8 snowfall ranges between 7-12" Warner depending on where located. During the second storm, About 16,000 total customers, 2/3 NH Electric Co-op customers and 1/3 Eversource customers, were	The Central NH region fared much better with snowfall between 6-10" with subsequent rain and high temps to melt the snow. During the second storm, snowfall between 3-6" with subsequent rain and high temps to melt the snow. Localized flooding. High winds were the greatest problem. The rain melted most of the remaining snow, resulting in ponding and mild flooding. This period was followed by extreme cold. On Jan 20, Extreme cold	CNHRPC, WebEOC, Warner Hazard Mitigation Committee		+		+	+	+						+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/ Dam	Winter/ Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					without electricity during this second wet snow, high temps, rain, and severe windstorm event across the state. Major coastal flooding was experienced with wind gusts exceeding 60 mph along the seacoast and in northern NH. Hampton was again inundated by several feet of water and seafoam, opened its warming shelter through high tide.	temp at -20 degrees. EMS was prepped but there were no issued.													
Regional Earthquake Loudon Epicenter 2.0M	2024	Jan 3	No	N/A	The Central NH Region is situated on deep fault lines that span northeast into the Lakes Region. Although the Central NH Region experiences several earthquakes annually, they are usually <3.0M. For perspective, usually around a dozen earthquakes are recorded in NH annually. For the stronger earthquakes, the Mercalli Intensity ratings are provided as a result of aggregated self-reporting to the USGS.	On Jan 3, a 2.0M earthquake in Loudon, its epicenter between Old Shaker Road and Pine Island Brook was recorded. Its depth was 5.0km and the Mercalli Intensity was rated a III. Local Warner residents may well have felt and reported these earthquakes.	USGS Earthquake Hazards Map, CNHRPC							+					
Regional Earthquake Concord Epicenter 2.7M	2023	Dec 22	No	N/A	The Central NH Region is situated on deep fault lines that span northeast into the Lakes Region. Although the Central NH Region experiences several earthquakes annually, they are usually <3.0M. For perspective, usually around a dozen earthquakes are recorded in NH annually. For the stronger earthquakes, the Mercalli Intensity ratings are provided as	On Dec 22, a 2.7M earthquake in Concord was recorded with the epicenter between the Steeplegate Mall and the Soucook River. Its depth was 5.0km and the Mercalli Intensity was rated a V (Very Light). Local Warner residents may well have felt and reported these	USGS Earthquake Hazards Map, CNHRPC							+					

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological	
					a result of aggregated self-reporting to the USGS.	earthquakes. Local reports indicate a loud boom and small rattling was felt.														
DR- 4761 Severe Storms and Flooding	2023	Dec 17-21	DR-4761	N/A for Merr or Hills County	A heavy rain and wind event caused over 50,000 electric outages in the state, mostly within Eversource and Unutil areas. Extensive wind, downed trees and powerlines, and flooding on local Central NH roadways as identified in Loudon, Pembroke, Dunbarton, and Salisbury in the Central NH region. Coastal storm surge and localized river flooding reported. Not declared a disaster in Merrimack or Hillsborough Counties.	Warner likely experienced localized flooding on roadways and temporary power outages.	CNHRPC, WebEOC		+		+	+	+							+
DR- 4740 Severe Storms and Flooding	2023	Jul 9-17	DR-4740	N/A for Merr or Hills County	New Hampshire experienced severe flooding, resulting in many bridge and road washouts. Nearby Hillsboro NH lost sections of major connecting roads. Many croplands, property, and roads were damaged throughout the state.	Warner experienced moderate-severe flooding in this time and the days after. Heavy rains resulted in localized flooding on the Warner River and on state & town roads. NH 103 near Exit 8 ditches overflowed and the side of the road collapsed.	Warner Hazard Mitigation Committee, Pine Farm Lane, CNHRPC				+									
Warner & Regional Thunderstorm and Hailstorm	2023	June 2 - 14	No	No	This June 2023 storm is representative of the multiple hailstorms New Hampshire communities are subjected to annually. In Central NH, there are 2-3 storms in which hail of notable size occurs each year. Whenever hail occurs, a possibility for power outages	Thunder, hail, rain, wind. Not much of an impact in Warner, mostly bypassed the Town.	Warner Hazard Mitigation Committee, hailpoint.com, CNHRPC		+	+	+		+							+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					and downed trees onto roadways exists. Hail was reported up to 1.5" in diameter across the Central NH region, with higher diameter hail in Hooksett (also in Merrimack County) and Manchester.														
Regional Extreme Cold Temperatures	2023	May 18	No	N/A	All across the Northeast, cold temperatures records were broken. Montpelier fell to 25 degrees, Lebanon NH fell to 23 degrees. New Hampshire temperatures fell into the low 20s on this night bringing a late frost to newly planted crops or overwintering orchards. This event continued to threaten crops this late in the season.	Oak tree coverage was frozen in May 2023, and became extra dry with less vegetation. In mid-June 2023, finally rained and downgraded the risk (about 2 months high) for now.	CNHRPC., NOAA National Climate Report, Warner Hazard Mitigation Committee			+			+						
Warner & Regional Thunderstorm and High Winds and Microburst Season	2023	April - Nov ANNUAL	No	N/A	Numerous notable thunderstorms, with rain, lightning, wind, flooding, and erosion/washout occurred in the Central NH region in 2023. These storms include Apr 18-19- Heavy rainstorm and winds caused treefall. July 12- thunderstorm, wind. Nov 29- Heavy winds caused treefall on utility lines. Dec 26- storm described under DR- 4693	During these more common thunderstorms, Warner typically experiences localized flooding in several low areas sections. Those sections of road with culvert washouts and erosion are reconstructed to higher storm standards- Schoolhouse Lane, Cummingham Pond Road, Harriman Lane, Howe Lane, Burnt Hill Rd, Old Pumpkin Road, Brown Road, Red Chimney Road, Waterloo Street, Pumpkin Hill Rd, East Joppa Road, Connors Mill Rd, Retreat Road. Kearsarge Mtn	Warner Hazard Mitigation Committee, CNHRPC		+	+	+								+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
						Road experiences drainage ditch flooding and erosion across from Mt. Kearsarge Indian Museum on Highlawn Rd. Many gravel driveways or roads experience some extent of washout. If winds are high enough, treefall on roads and utility lines, and therefore power outages, is a regular outcome.													
Warner & Regional Snowstorm	2023	Mar 14	No	N/A	Likely, most Merrimack County and Central NH region towns experienced similar impacts during this Town Meeting week.	Wet snow resulted in downed tree and power lines several roads blocked – Rt 103 East, Iron Kettle Rd, Newmarket Rd, Pleasant Lake area. Warming Center opened for 1 day.	Warner Hazard Mitigation Committee, CNHRPC					+	+						+
Regional Extreme Cold Temperatures	2023	Feb 3-4	No	N/A	Most communities in Central NH including Warner experienced negative temperatures (-10 to -19 degrees F) plus windchill, ranging as low as -45 degrees for a 36-hour period.	Most local produce is grown in Warner greenhouses, and there are few orchard crops. However, it's likely residences experienced some pipe bursting and power outages.	Warner Hazard Mitigation Committee, CNHRPC						+		+			+	+
Regional ANNUAL Earthquakes 1.0M - 3.0M	2023	ANNUAL	No	N/A	The Central NH Region is situated on deep fault lines that span northeast into the Lakes Region. Although the Central NH Region experiences several earthquakes annually, they are usually <3.0M. Between January-July 2023, two earthquakes were recorded in	On Jan 25, a 1.9M earthquake struck Bow off Bog Road at Allen Road. Its depth was 8.9km and the Mercalli Intensity was rated a III. On Feb 24, a 2.1M earthquake was recorded in Warner on East Chimney Road at	USGS Earthquake Hazards Map, CNHRPC							+					

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					the Central NH Region. For perspective, usually around a dozen earthquakes are recorded in NH annually. For the stronger earthquakes, the Mercalli Intensity ratings are provided as a result of aggregated self-reporting to the USGS.	5.0km in depth. This quake also had a Mercalli Intensity rating of III. Warner residents may likely felt and reported these earthquakes. Local news reports indicate a loud boom and small rattling was felt for the Warner quake.													
Warner ANNUAL 2017-2022 Drought Conditions	2017-2022	ANNUAL	No	N/A	Merrimack County and portions of Hillsborough County have experienced light to moderate drought conditions for much of the last 5 years, except for most of 2023.	Summer Water Restrictions placed by Water Precinct for outside watering (2021, 2022). Warner should continue to assume annual drought conditions will occur in sections of town each year. Wells may be going dry but are not all reported to the Town. Fire suppression is a big issue.	CNHRPC, Warner Hazard Mitigation Committee	+											
DR- Severe Storms and Flooding	2022	Dec 26	DR-4693	N/A for Merr or Hills County	Pembroke Plasawa tower came down in the last wind event, day after Christmas. CAMAFC equipment on the ground, diverted to another tower for simulcast and microwave system. Pembroke has rehabilitation cost on their most recent FEMA claim. Central NH region experienced heavy rain and a wintry mix. The combination of snowmelt and precipitation caused many towns to experience flooding. A recent snowstorm on Dec 16	Ice Jam off NH 103 West (Warner River) near Sutton border, Laine Bridge Lane. Localized flooding and icy roads in Warner.	Warner Hazard Mitigation Committee, CNHRPC, NOAA web		+		+	+	+					+	+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological	
					caused snow accumulation, which contributed to the later flooding.															
Warner & Regional Thunderstorm and High Winds	2022	Nov 29	No	N/A	The Central NH region experienced severe thunderstorms with high winds, rain, and lightning.	Heavy winds caused treefall on utility lines. Flash flooding conditions especially along roadsides may have also been met in some Warner locations.	Warner Hazard Mitigation Committee, CNHRPC		+	+	+							+		+
Warner Lightning Strikes	2022	May-July	No	N/A	Likely these strikes occurred during regional thunderstorms.	Regular lightning strikes occur at Main Street and Newmarket Road.	Warner Hazard Mitigation Committee, CNHRPC			+										
Warner & Regional Geomagnetic Storms	2022	Apr 4	No	N/A	Many towns utilized the CAFMAC antennas for emergency communication. The geomagnetic storm would have impacted any of these towns as well.	Geomagnetic storm impacted CAFMAC microwave antennas on Mount Kearsarge, Oak Hill, Plausawa Hill, and towers on Pat's Peak. Some of the damaged antennas needed to be replaced. The impact of the storm on the antennas disrupted 911 communications which had to be rerouted through the Lakes Region dispatch. Fort Mountain has a significant antenna, went out during one of the last solar events. NH State Police and County, insurance covered. Town had to ensure road was passable. Mt. Kearsarge seemed to be operational.	CNHRPC, Warner Hazard Mitigation Committee									+				+

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
Regional Thunderstorm and High Winds	2022	Apr	No	N/A	The Central NH region experienced severe thunderstorms with high winds, rain, and lightning.	Heavy winds caused treefall on utility lines. Flash flooding conditions especially along roadsides may have been met in some Warner locations.	Warner Hazard Mitigation Committee, CNHRPC		+	+	+								
Warner Extreme Heat/ Heat Wave Events	2022	Summer	No	N/A	Similar temperatures and impacts were likely experienced across the Central NH region and Merrimack County.	Three heat waves of 3 days over 90 degrees were noted. Many welfare calls conducted to check on vulnerable. Confirmed heat exhaustion cases by Fire & Rescue.	Warner Hazard Mitigation Committee, CNHRPC						+		+			+	
Regional ANNUAL Earthquakes 1.0M - 3.0M	2022	ANNUAL	No	N/A	The Central NH Region is situated on deep fault lines that span northeast into the Lakes Region. Although the Central NH Region experiences several earthquakes annually, they are usually <3.0M. In 2022, 3 earthquakes were recorded in the Central NH Region. This year, 12 earthquakes were recorded in NH. For the stronger earthquakes, the Mercalli Intensity ratings are provided as a result of aggregated self-reporting to the USGS.	On Feb 17, a 1.8M earthquake was recorded in Loudon west of Clough Sanborn hill, depth 5.0km. On Aug 6, a 1.2M earthquake was recorded in Salisbury on a hill west of Little Hill Road at 5.0km in depth. On Aug 7, a larger 2.3M quake was recorded in Antrim, West of Concord St at a 5.0km depth. This quake had a Mercalli Intensity rating of IV. Warner residents may well have felt and reported these earthquakes.	USGS Earthquake Hazards Map, CNHRPC							+					
Regional G3 Geomagnetic Storms	2021	Oct 30-31	No	N/A	NOAA issued a G3 "strong" geomagnetic storm watch. A storm of this capacity can cause voltage irregularities on protection devices, potentially harmful currents in power grids,	There were no known impacts in the Town, but predictions had noted potential radio interference, potential harmful currents in the	CNHRPC, NOAA, CNN									+			+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					disruptions in global positioning systems (GPS), as well as the potential to cause high frequency radio blackouts. Visible effects of a geomagnetic storm include enhancing the visibility of the aurora borealis across large parts of the United States and Europe. A geomagnetic storm of this size likely reaches large portions of the earth, including the entire northeast of the United States and the Central NH Region	power grid, and potential disruptions to global positioning systems (GPS).													
Seabrook Nuclear Unusual Events Alerts	2021	Oct 22-23	No	N/A	Site Area Emergency only. Although most Central NH towns are just outside the 50-mile EPZ, situational awareness is preferred	Warner outside the 50-mile EPZ, although situational awareness is preferred.	CNHRPC, WebEOC										+		
Regional Arboviral Risk	2021	SEASON	No	N/A	Towns in Merrimack County experienced higher arboviral risk levels than other counties.	Warner may have had unreported positive cases of Jamestown Canyon Virus, EEE or West Nile from mosquitos. Pockets of cases in Central NH are observed in subsequent years.	CNHRPC, WebEOC, NHDHHS								+				
New Hampshire Statehouse Vaccine Protest	2021	Sep 14	No	N/A	Protest at New Hampshire State House in Warner. Rally against vaccine mandates. Surrounding town response authorities were likely notified in the event additional aid was required.	Civil Disturbance as a protest at the NH State House against Vaccine mandates. No known damage or violence occurred. Town personnel and resources were likely directed towards ensuring safety during the protest. No known Warner	CNHRPC, WebEOC, Warner Monitor											+	

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological	
						exposure, but mutual aid may have been called.														
Regional Tropical Storm Henri	2021	Aug 19-27	No	N/A	Strong tropical storm with flash flooding, high winds 30-40 mph, power outages, tree damage, heavy rain between 2 and 4 inches in NH.	Warner likely felt similar effects as the rest of the state including heavy rain, high winds, potential flooding, tree damage, and power outages	CNHRPC, WebEOC, NH HSEM		+		+									+
Regional Air Quality Advisory	2021	Aug 12-13	No	N/A	NHDES expected ground-level ozone concentrations to rise to levels that are unhealthy for those who are sensitive.	Warner potentially had the same increased concentrations of fine particle air pollution that could be harmful.	CNHRPC, WebEOC, NHDES									+				
Regional Air Quality Advisory	2021	Jul 26-27	No	N/A	NHDES expected concentration of fine particle air pollution to reach unhealth levels for those who are sensitive throughout the entire state.	Warner likely had increased concentrations of fine particle air pollution that could be harmful.	CNHRPC, WebEOC, NHDES									+				
Regional Wildfire Smoke Advisory	2021	Jul 20	No	N/A	NHDES declared smoke advisory expecting concentrations of fine particle air pollution from smoke to reach levels that could cause respiratory health effects for those who are sensitive throughout the state.	Warner likely experienced degraded air quality which would have had a greater impact on the young, elders, and those with breathing problems.	CNHRPC, WebEOC, NHDES									+				
DR- 4624 Severe Storms and Flooding	2021	Jul 29-Aug 2	DR-4624	N/A for Merr or Hills County	Heavy rainfall 0.5-2 inches in areas throughout the state sufficient to produce flooding. This was not a declared disaster in Merrimack or Hillsborough Counties	Warner experienced heavy rainfall and likely flooding, especially along roads, leading to washouts.	CNHRPC, WebEOC, NH HSEM		+		+									
DR- 4622 Severe Storms and Flooding	2021	Jul 18	DR-4622	N/A for Merr or Hills County	Heavy rainfall 0.5-2 inches in areas throughout the state sufficient to produce flooding. This was not a declared disaster	Warner experienced heavy rainfall and likely flooding, especially along	CNHRPC, WebEOC, NH HSEM		+		+									

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					in Merrimack or Hillsborough Counties	roads, leading to washouts.													
Regional Extreme Hot Temperatures	2021	Jun 29	No	N/A	Heatwave experienced throughout the state. Extreme temperatures from 90-100 degrees were recorded at various times throughout the summer.	Warner experienced extreme temperatures with high heat and humidity.	CNHRPC, WebEOC, NH WMUR						+						
Warner & Region Thunderstorms and High Winds	2021	Spring-Summer	No	N/A	This was two seasons of thunder and rainstorms in the Central NH region.	Windstorms in Warner were reported on 3/2 and 3/29 of 2021. No major damage reported in the Town. Thunderstorms and high winds reported on 5/26, 7/21, and 7/23.	Warner Hazard Mitigation Committee, CNHRPC, NOAA web		+	+	+								
Regional Drought	2021	May	No	N/A	Much of Merrimack and Hillsborough counties experienced moderate levels of drought.	Warner likely experienced moderate drought conditions.	CNHRPC, WebEOC, NCEI/NOAA	+											
Regional Geomagnetic Storms	2021	Apr 4	No	N/A	The geomagnetic storm impacted multiple CAFMAC microwave antennas throughout the region. Many regional towns utilize these antennas, and their communications were disrupted including for 911 calls.	A geomagnetic storm impacted CAFMAC microwave antennas on Mount Kearsarge, Oak Hill, Plausawa Hill, and Pat's Peak Towers some needed replacing. The impact from the storm disrupted 911 communications in Warner	CNHRPC, Local Hazard Mitigation Committees									+			+
Regional Snowstorm	2021	Feb 1-2	No	N/A	Severe snowstorm impacting the state resulting in 3-16 inches of snow.	Warner likely experienced several inches of snow and potential tree damage, and power outages. Town Public	CNHRPC, WebEOC, NH WMUR					+	+						+

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
						Works Dept handled as a typical storm.													
Warner Wildfires	2021	Seasonal	No	N/A	N/A, although mutual aid could have responded.	Warner had several small wildfires during this dry time. Woods fire caused by downed high voltage line off Rt 103 West in area of Laine Bridge Lane. Woods fire in field behind Buffalo Farm on Rt 103 East.	CNHRPC, Warner Hazard Mitigation Committees	+		+									
Regional ANNUAL Earthquakes 1.0M - 3.0M	2021	ANNUAL	No	N/A	The Central NH Region is situated on deep fault lines that span northeast into the Lakes Region. Although the Central NH Region experiences several earthquakes annually, they are usually <3.0M. In 2021, 3 earthquakes were recorded in the Central NH Region. This year, 7 earthquakes were recorded in NH. For the stronger earthquakes, the Mercalli Intensity ratings are provided as a result of aggregated self-reporting to the USGS.	On Mar 6, a 1.7M earthquake was recorded on Fire Pond Drive at a depth 5.0km. This quake had a Mercalli Intensity rating of III. On Aug 1, a 1.8M earthquake was recorded in Canterbury south of Boyce Road at 2.8km in depth. This quake also had a Mercalli Intensity rating of III. On Nov 30, a 1.9M quake was recorded in Canterbury on Hayward Brook north of Hoit Road at a 4.7km depth. Warner residents may well have felt and reported these earthquakes.	USGS Earthquake Hazards Map, CNHRPC							+					
Regional Christmas Rain and Windstorm	2020	Dec 25	No	N/A	Heavy rain and strong winds throughout the state. 1.5-2.5 inches of rain and gusts of wind from 45-55mph. Combined with	Warner likely felt strong winds and heavy rains potentially causing flooding, tree damage, and road closures.	CNHRPC, WebEOC, NH WMUR		+		+		+						

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					snowmelt the storm caused flooding.														
Regional Snowstorm	2020	Dec 17	No	N/A	Severe snowstorm impacting the state resulting in 5-25 inches of snow.	Warner likely received several inches of snow, causing tree damage and potential power outages.	CNHRPC, WebEOC, NH HSEM, manchesterinklink.com					+							
Regional Drought	2020	Jul, Sep, Oct, Dec	No	N/A	Drought conditions in Merrimack and Hillsborough counties ranging from D1 Moderate Drought to, D2 Severe Drought, and further east D3 Extreme Drought. Very high fire danger declared.	Warner likely experienced moderate or severe drought conditions.	CNHRPC, WebEOC, NCEI/NOAA	+		+			+						
State General Election Security	2020	Nov 3	No	N/A	The NH general election occurred hosted at 307 polling locations across the state, involving 185 town police departments and state police.	Warner hosted their local election sites and town authorities were required for logistics and security.	CNHRPC, WebEOC, NH State Police											+	
Warner & Regional Tropical Storm Isaias	2020	Aug 3-6, Aug 17	No	N/A	Tropical storm with extreme wind gusts, flash flooding, high rainfall, tree damage, and power outages.	Warner experienced the same storm effects including high wind, flooding, rainfall, tree damage, and power outages.	Warner Hazard Mitigation Committee, CNHRPC, WebEOC, NH SEOC, NHPR.org		+		+								+
COVID-19 Pandemic	2020-2022	Mar-Apr	DR-4516	\$0*	The NH Governor issued social activities restrictions, minimal public meetings, remote meetings held, social distance practices in April 2020 for all counties. Cases closely tracked by NH Division of Health and	Warner applied for and received *\$0 in PA funding but about \$348k in funds from a variety of funding programs. The Town followed the Governor's order and CDC advisories on meetings,	CNHRPC, NH HSEM, NH DHHS, WMUR								+				

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					Human Services and NH HSEM. The State EOC was activated.	masks, social distancing. Hand sanitizing/masking station is available, signs are posted, front door is often locked. Multiple funding programs were applied for. Warner had difficulty keeping enough PPE, masks, sanitizer in stock.													
Regional Extreme Cold Temperatures and Snowfall	2020	Feb 13	No	N/A	Wind Chill advisory with temperatures of 15-25 below zero during the night. Snow showers also occurred throughout the state.	Warner likely experienced extreme cold temperatures and windchill as well as snowfall.	CNHRPC, WebEOC, NH WMUR						+						
Warner & Regional Snowstorm	2020	Feb 7-8	No	N/A	Regional storm with many hours of snow, freezing rain, sleet, and rain across the state. Resulting in ice accumulation. Just under 27,000 power outages were reported.	Warner experienced heavy snow, freezing rain, sleet, and rain causing many power outages. The ice accumulation caused many power outages and tree fall.	Warner Hazard Mitigation Committee, CNHRPC, WebEOC, NH WMUR				+	+	+						+
Regional Air Quality Advisory	2020	Jan 22	No	N/A	NHDES expected concentration of fine particle air pollution to reach unhealth levels for those who are sensitive. Especially in the southwestern region of NH.	Warner potentially had increased concentrations of fine particle air pollution that could be harmful.	CNHRPC, WebEOC, NHDES								+				
Regional ANNUAL Earthquakes 1.0M - 3.0M	2020	ANNUAL	No	N/A	The Central NH Region is situated on deep fault lines that span northeast into the Lakes Region. Although the Central NH Region experiences several earthquakes annually, they are usually <3.0M. In 2020, 3 earthquakes were recorded in the Central NH Region while 9 total earthquakes were recorded in NH. For the stronger	On Jan 6, a 2.1M earthquake was recorded in Northfield (also in Merrimack County) at I-93 south of railroad track at a 5.0km depth. This quake had a Mercalli Intensity rating of III. On Mar 8, a 1.9M earthquake was recorded at Dunbarton/Weare	USGS Earthquake Hazards Map, CNHRPC						+						

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					earthquakes, the Mercalli Intensity ratings are provided as a result of aggregated self-reporting to the USGS.	Townline, south of Clough Park Rd at 5.0km in depth. This quake also had a Mercalli Intensity rating of III. On Mar 15, a large 2.1M earthquake was recorded in Tillton on Lowes Drive (also in Merrimack County) at 4.5km in depth. This quake was strongly felt, a Mercalli Intensity rating of V. Warner residents may have felt and reported these earthquakes.													
Regional Snowstorm	2019	Dec 29	No	N/A	Severe snowstorm impacting the state resulting in 6-10 inches of snow mixed with rain in the central part of the state.	Warner experienced heavy snow, ice, tree damage, and power outages.	CNHRPC, WebEOC, NH HSEM, NH SEOC				+	+	+						+
Regional Merrimack Station Coal Plant Protect (Bow)	2019	Dec 8	No	N/A	Protest at Merrimack Station in Bow. Rally against the functions of the station for environmental reasons. This was just one of several protests through 2024.	Warner is located about 25 miles to the northwest of the station. Mutual aid personnel and resources were required to safely manage or arrest the protestors who were on private property and caused minor vandalism.	CNHRPC, Bow Hazard Mitigation Committee											+	+
Regional Snowstorm	2019	Dec 2	No	N/A	Severe snowstorm impacting the state resulting in 1-12 inches of snow.	Warner experienced heavy snow likely causing tree damage and power outages.	CNHRPC, WebEOC, NH HSEM, WMUR					+							+
Regional Drought	2019	Winter	No	N/A	Drought conditions experienced in many areas of NH during the winter of 2019.	Warner experienced moderate drought levels.	CNHRPC, Warner Hazard Mitigation Committee	+					+						

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/ Dam	Winter/ Snow/ Ice	Extreme Heat/ Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
Regional Snowstorm	2019	Oct 16-17	No	N/A	Regional Nor'easter with snow, freezing rain, and high winds caused tree damage and power outages. Early in the season.	Warner experienced snow, freezing rain, and heavy winds likely resulting in multiple road closures due to tree and utility pole damage, power outages occurred.	CNHRPC, WebEOC					+	+						+
Regional Extreme Hot Temperatures	2019	Jul 19	No	N/A	High heat and humidity temperatures ranging from 90-100 degrees Fahrenheit	Warner likely experienced the same high temperatures as the rest of the state.	CNHRPC, WebEOC						+						
DR- 4457 Severe Storms and Flooding	2019	Jul 11-12	DR-4457	N/A for Merr or Hills County	Repeated severe thunderstorms resulted in flash flooding throughout regions of New Hampshire. This was not a declared disaster in Merrimack or Hillsborough Counties.	Warner likely experienced storms producing heavy rain causing the potential of flooding. Hail occurred.	CNHRPC, WebEOC, FEMA, Boston Globe		+	+	+								
Regional Hepatitis A Outbreak	2019	May	No	N/A	A significant increase in the number of people in the state diagnosed with Hep A. 10 Cases diagnosed in Merrimack County including one death. 36 Cases in Hillsborough County.	No impact on Warner, although some residents may have been impacted.	CNHRPC, WebEOC, DHHS								+				
Regional Spring Flooding	2019	Apr 19-22	No	N/A	Warmer weather, snowmelt, and heavy rain causes regional spring flooding.	Warner likely experienced flood conditions from the rain and its rivers.	CNHRPC, WebEOC, NBC Boston, NHDOT Twitter				+	+	+						
Regional Snowstorm	2019	Feb 12-13	No	N/A	Snow and wintery mix storm throughout the state. 6-12 inches of snow mixing with sleet, freezing rain, and rain throughout the storm	Warner likely experienced heavy snow and other precipitation causing potential for tree damage and power outages.	CNHRPC, WebEOC, WMUR		+		+	+	+						+
Regional Snowstorm	2019	Jan 20	No	N/A	Severe snowstorm impacting the state resulting in 4-12 inches of snow.	Warner likely experienced 4.5 inches of snow, freezing rain, high wind, tree damage, and power outages.	CNHRPC, WebEOC NH HSEM, NOAA, WMUR		+			+							+

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/ Dam	Winter/ Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
Regional ANNUAL Earthquakes 1.0M - 3.0M	2019	ANNUAL	No	N/A	The Central NH Region is situated on deep fault lines that span northeast into the Lakes Region. Although the Central NH Region experiences several earthquakes annually, they are usually <3.0M. In 2019, 2 earthquakes were recorded in the Central NH Region while 11 total earthquakes were recorded in NH. For the stronger earthquakes, the Mercalli Intensity ratings are provided as a result of aggregated self-reporting to the USGS.	On Mar 16, a 2.3M earthquake was recorded in Canterbury on Bryant Brook east of Intervale Road at a 4.1km depth. This quake had a Mercalli Intensity rating of III. On Sep 28, a 0.8M earthquake was recorded in Henniker, west of Peasely Road and south of Bear Road at a 5.2km depth. Warner residents may well have felt and reported these earthquakes.	USGS Earthquake Hazards Map, CNHRPC							+					
Hazard Events 2019-2003																			
Canterbury Epicenter Earthquake 2.3M (Mercalli III) Mar 2019	2019	Mar 16	No	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.	Warner residents felt shaking. Quake was discussed at Town Meeting. No reports of damage.	Warner Hazard Mitigation Committee, CNHRPC, wmur.com, unionleader.com, earthquake.usgs.gov												
Warner Interstate Transportation Crash Sep 2018	2018	Sep 22	No	N/A	Interstate 89 runs through Warner and is an essential highway for New Hampshire and Vermont	Single vehicle crash on I-89 South closed the road for several hours. A truck had self-destructed on ramp Exit 8, resulting in a fatality.	Warner Hazard Mitigation Committee, CNHRPC												+

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Warner Silver Lake Cyanobacteria Aug 2018	2018	Aug 22-23	No	N/A	This condition was localized to Warner although other NH Lakes received similar notifications.	Silver Lake Town beach closed from Aug 22-23 for High Bacteria counts.	CNHRPC, NH Dept of Environmental Services						+		+				
Warner Active Shooter Incident May or Jun 2018	2018	May or Jun	No	N/A	Interstate 89 runs through Warner and is an essential highway for New Hampshire and Vermont	Warner responders assisted with handling a shooter on I-89 with other local police, State police and Merrimack County Sheriff's Department. There were no fatalities.	Warner Hazard Mitigation Committee, CNHRPC											+	
Regional Thunderstorm, Severe Winds, Tornado and Debris May 2018	2018	May 3-5	No	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 structure damage. The National Weather Service determined an EF-1 tornado blew 36 miles, about 300 yards across, through Warner, 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.	In Warner, an EF-1 tornado with winds 80-100 mph traveled through the Town and knocked down trees and over a dozen power line poles, blocked roads, and caused short-term power outages. Trees along Couchtown Road were extensively damaged. The tornado entered Warner in the area of Route 103 West and extended to the Mason Hill Road area. The tornado resulted in extensive damage to trees on Mason Hill, the Lane, and Schoodac Rd. Several poles were replaced. An unknown amount of Board Feet of timber was damaged as a result of the wind. There were no injuries reported in Warner. See Appendix E for relevant photo.	Warner Hazard Mitigation Committee, CNHRPC, wmur.com, Concord Monitor		+										+

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Concord/Hopkinton Epicenter Earthquake 2.4M (Mercalli IV) Mar 2018	2018	Mar 7	No	N/A	A significant 2.4M earthquake was recorded by the USGS in March 2018. 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, Henniker, 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.	This 2.4 earthquake occurred on the Contoocook River in Concord a little after 5:00am. Shaking was felt at Pumpkin Hill Road in Warner but there were no apparent damages. Concord is two towns away from Warner to the east.	Warner Hazard Mitigation Committee, Earthquake rack.com, CNHRPC, concordmonitor.com, earthquake.usgs.gov							+						
Regional Flooding, Ice Storms, Snow Melts and Ice Jams Jan 2018	2018	Jan 13-23	No	N/A	During the month of January 2018 with several snowfall and melt periods, the region experienced high snow totals, flooding, and temperature fluctuations.	Multiple storms in a row brought cold then warm weather to Warner. Extremely cold temperatures caused ice jams along the Warner River resulting in flooding in the area of Lang Bridge, which was damaged. Riverside Park & Bagley Field sustained damages. Ice and flooding caused fence damage at Riverside and soccer goals, ice rink walls and lighting posts were destroyed at Bagley Field. Residents on West Roby District Road and some on	Warner Hazard Mitigation Committee, CNHRPC				+		+							

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological	
						residents on Morse Loop were stranded. Highway Crew blocked the road until the water receded, then had to clear the ice buildup on the roadway. When the Warner River flooded there were many ice jams, including at Lang Bridge which also had flooding (water went around each end of the bridge over the banks, 16' deep) due to ice jam and tree debris. West Joppa Road/Dalton Covered Bridge had closed access to road (2 feet of water and ice floes.) West Roby District Road was closed - (2-3 feet of water). There were power outages and accidents. Many other roads like West Roby District Road flooded as a result of this weather event.														
Warner Extreme Cold Jan 2018	2018	Jan	No	N/A	Likely other Central NH Region towns experienced similar temperatures and conditions.	The Town provided fuel assistance for cold emergencies, but oil deliveries were not available in timely fashion. As a result, the Wood Bank fuel was provided by the Town and depleted the supply.	Warner Hazard Mitigation Committee, CNHRPC						+							

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Warner Winter School Closures Jan-Dec 2018	2018	Jan-Dec	No	N/A	The Kearsarge Regional School District has several communities – Sutton, Warner, New London, Bradford, Newbury.	2018 Snow Days (School out) 7 days + 2 delays: 1/2 (2 hour delay), 1/4, 1/12 (ice), 1/16, 2/7, 2/20 (2 hour delay), 3/8, 3/13, 3/14, 4/5.	Warner Hazard Mitigation Committee, CNHRPC						+						
Warner Vehicle Fires 2018	2018	Misc	No	N/A	Interstate 89 runs through Warner and is an essential highway for New Hampshire and Vermont	At the I-89 Exit 9 Park and Ride, there was a vehicle fire with no injuries. Another vehicle fire occurred at Evans Fuel Mart on NH 103. A third vehicle fire was identified at Exit 7 Davisville.	Warner Hazard Mitigation Committee, CNHRPC			+									
Warner Active Shooter Incident Nov 2017	2017	Nov 20	No	N/A	Interstate 89 runs through Warner and is an essential highway for New Hampshire and Vermont	Warner responders assisted in handling a shooter on the highway at Exit 10 in Sutton. Exit 10 is within 0.25 mile of the Kearsarge Middle School, High School, and Sutton Elementary School.	Warner Hazard Mitigation Committee, CNHRPC											+	
Warner Local Terrorism Incident Oct 2017	2017	Oct 31	No	N/A	N/A, although Simonds School is part of the Kearsarge Regional School District	Simonds Elementary School cancelled a day of school because of an extreme domestic dispute that had the potential to threaten students	Warner Hazard Mitigation Committee, CNHRPC											+	
Severe Wind Storm and Flood Oct 2017	2017	Oct 28-30	4355	\$10,515	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. Nearby Newbury lost	Warner received \$10,515 in FEMA Public Assistance funding for debris removal, roads and bridges, and state road management. Six road washouts occurred. The Schools were closed 10/30, 10/31, 11/1 from	Warner Hazard Mitigation Committee, Newbury and New London Emergency Management		+		+								+

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					power for 4-5 days and New London is considered remote and does not have power restored quickly.	flooding and power outages. High winds blew trees down, several power outage were experienced. Business was affected due to town wide internet loss experienced by local provider (TDS Telecom). This was a declared disaster for emergency services here in Warner. Downed trees took out power and phone service to over 300 residents.													
Severe Storms and Flooding Jul 2017	2017	Jul 1-2	4329	N/A for Warner	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.	Warner could not apply for or receive federal PA funds. Warner conducted debris clean up along roads but noted the storm was not out of the ordinary in Town.	Warner Hazard Mitigation Committee, FEMA CNHRPC, WMUR, NOAA		+	+	+								
Geomagnetic Storm May 2017	2017	May	No	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. See Appendix E for relevant photo.	Warner Hazard Mitigation Committee, CNHRPC									+			
April Fool's Snowstorm Apr 2017	2017	Apr 1	No	N/A	A spring snowstorm impacted New England, with 50,000 without power in NH alone and 180,000 in the NE. Massachusetts was buried in nearly 2 feet of snow. The Central NH Region experienced more snowfall than the rest of	Warner likely had power failures because of snow and trees down on roadways.	wmur.com, CNHRPC, USA Today					+	+						

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					the state, with Henniker at 15", Deering and Concord at 13", and Pembroke at 12".														
Severe Snowstorm-Town Meeting Blizzard Mar 2017	2017	Mar 14-15	4316	N/A for Warner	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.	Warner could not apply for or receive federal PA funds. A state-wide blizzard occurred during Town Meeting, (Election Day Storm). Warner did not delay their Town Meeting. During this storm, a Fire Department engine rolled over on I-89 due to the weather conditions. There were no injuries. Several other accidents occurred on I-89, so the highway was closed until treated. See Appendix E for related photo.	Warner Hazard Mitigation Committee, CNHRPC					+	+						
Webster Epicenter Earthquake 1.9M (Mercalli III) Feb 2017	2017	Feb 27	No	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 Clothespin Bridge Road at a depth of 8.9km.	It is likely Warner residents felt this earthquake and made local calls to the Fire and Police Departments. Webster abuts Warner to the east.	Warner Hazard Mitigation Committee, Earthquake track.com, CNHRPC, earthquake.usgs.gov							+					
Warner Winter School Closures Jan-Dec 2017	2017	Jan-Dec	No	N/A	The Kearsarge Regional School District has several communities – Sutton, Warner, New London, Bradford, Newbury.	2017 Snow Days (School out) 7 days in + 6 delays: 7: 1/4 (2 hour delay), 1/11 (2 hour delay), 1/24, 2/1 (2	Warner Hazard Mitigation					+	+						

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						hour delay), 2/8 (2 hour delay), 2/9, 2/13, 2/16 (2 hour delay), 3/14, 3/15 (2 hour delay), 3/27, 12/12, 12/22.	Committee, CNHRPC													
Central NH Region and Warner Excessive Heat 2016-2017	2016	-2017	No	N/A	NH and the Central NH region experienced high heat records throughout 2016 and 2017.	Many people don't have air conditioning, lots of 90 degree humid days. Many aging and elderly people in live in private homes in Warner that require welfare checks, and many go to the CAP Building for social activities and A/C.	Warner Hazard Mitigation Committee, CNHRPC						+							
Warner Extreme Cold and Snowstorm Dec 2016	2016	Dec	No	N/A	Likely other Central NH Region towns experienced similar temperatures and conditions.	In Warner, an elderly person using a GPS drove their car onto a snowmobile trail instead of a road. The vehicle became stuck and the elderly person got out to walk during a snowstorm. The situation ended in a fatality.	Warner Hazard Mitigation Committee, CNHRPC						+							
Warner Beaver Dam Failure Fall 2016	2016	Fall	No	N/A	N/A, localized situation in Warner	On Poverty Plains Road, the Public Works Dept removed a beaver dam to stop potential flooding. In 2008 at this location, water came to the top of the dam but did not overtop.	Warner Hazard Mitigation Committee, CNHRPC				+									
Salisbury Epicenter Triple Earthquakes 1.8M/1.6M/1.3M	2016	Oct 31	No	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.	Reports were likely made to USGS from Warner and local calls may have been made to the Fire and Police Departments. Andover abuts Warner to	Warner Hazard Mitigation Committee, Earthquaketra ck.com,							+						

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Oct 2016					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.	the north, in Merrimack County too.	CNHRPC, earthquake.usgs.gov												
NH Severe Wind Rain & Thunder Storm Jul 2016	2016	Jul 23	No	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.	Warner was also affected by these storms. Lightning was spectacular, and was captured on photo at North Road. See Appendix E for relevant photo.	Warner Hazard Mitigation Committee Concord Patch, CNHRPC, WMUR, NOAA		+	+									
Warner Plane Crash May 2016	2016	May 30	No	N/A	Planes flying over Warner are regional, often from Manchester, Boston, or points west. Many that crash are small single-engine planes from Concord Airport or from any number of private airports in New England.	In the higher elevation Mink Hills on Memorial Day a private 2-seater plane crashed. The occupants were injuries but there were no fatalities. It was difficult for responders to reach the remote location where the plane went down.	Warner Hazard Mitigation Committee, CNHRPC												+
Warner Epicenter Earthquake 2.8M (Mercalli IV) Mar 2016	2017	Mar 21	No	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, Henniker, Warner, Webster, Salisbury, Franklin, Webster, Concord, and Hillsborough	This local quake is believed to have caused significant municipal damage – it may have disrupted or fractured one of the two Warner Village Water District well. More of a snap sound was heard in Davisville.	Warner Hazard Mitigation Committee, Earthquakeck.com, CNHRPC, earthquake.usgs.gov							+					

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Warner Extreme Cold Feb 2016	2016	Feb	No	N/A	Likely other Central NH Region towns experienced similar temperatures and conditions.	Water service pipes froze in CAP Building, several private residences, and Masonic Hall, although the CAP Building had a second source of water for residents. Broken pipes may have been in Water Precinct area. Delayed openings for school so children did not have to wait at bus stops in extreme cold.	Warner Hazard Mitigation Committee, CNHRPC					+	+						+
Warner Winter School Closures Jan-Dec 2016	2016	Jan-Dec	No	N/A	The Kearsarge Regional School District has several communities – Sutton, Warner, New London, Bradford, Newbury.	2016 Snow Days (School out) 3 days + 3 delays: 2/9 (2 hour delay), 2/16, 3/2, 3/25 (2 hour delay), 12/7 (2 hour delay), 12/12	Warner Hazard Mitigation Committee, CNHRPC					+	+						
Boscawen Epicenter Earthquake 2.3M (Mercalli III) May 2015	2015	May 24	No	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.	Warner residents felt shaking and heard rumbling throughout the Town. There seemed to be no damages.	Warner Hazard Mitigation Committee Earthquake track.com, CNHRPC, earthquake.usgs.gov							+					
Tornado, Severe Thunderstorms Jul 2015	2015	Jul 31	No	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.	This EF-0 Tornado with 75 MPH winds formed in the area of Exit 9 and State Route 103. The Tornado uprooted a pine tree on West Main St then proceeded into the woods. It then touched down and took off a metal roof at 139 Kearsarge Mountain Rd.	Warner Hazard Mitigation Committee, WMUR, CNHRPC		+										

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						The roof landed approximately 400-600 feet above in the woods. There were no injuries reported in Warner. See Appendix E for relevant photos.													
NH Geomagnetic Storm June 2015	2015	Jun	No	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. See Appendix E for relevant photo.	Warner Hazard Mitigation Committee, CNHRPC												
Severe Winter Storm and Snowstorm - January Blizzard 2015	2015	Jan 26-28	4209	N/A for Warner	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 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>	Warner could not apply for or receive PA funding. The storm was not particularly notable by the Town. No recollections of anything other than a typical winter storm.	Warner Hazard Mitigation Committee, fema.gov, Boston Globe					+	+						
Warner Winter School Closures Jan-Dec 2015	2015	Jan-Dec	No	N/A	The Kearsarge Regional School District has several communities – Sutton, Warner, New London, Bradford, Newbury.	2015 Snow Days (School out) 4 days: 1/8, 1/27, 2/2, 2/9.	Warner Hazard Mitigation Committee, CNHRPC					+	+						+

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Warner/Merrimack County Drought Severe Emergency 2015-2018	2015	-2017	No	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 as of 09/17 caused some problems in Warner. From May to Nov (2015 and 2018), the Water Precinct applied water restrictions to its customers because drought conditions seemed to have impacted one of the Town wells.	Warner Hazard Mitigation Committee, US Drought Monitor NH, NH DES, CNHRPC	+					+							
Thanksgiving Day Snowstorm Nov 2014	2014	Nov 27	No	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.	This quick, heavy accumulation snowstorm occurred on the holiday when traveling is substantial. Warner lost power throughout the Town and took several days to repair. Main transmission line 3,000 volts was down behind Simonds School, Schoodac Road, School Street, Denny Hill East Sutton Road. Power lines were also across 89 down Route 103 West.	Warner Hazard Mitigation Committee, Concord Monitor, CNHRPC					+	+							
Regional Communications Failure by Lightning	2014	Summer	No	N/A	Regional event- Plausawa Hill (Pembroke) Lightning Strike - affected Capital Area Fire Compact Dispatch. Fairpoint	Warner, as part of the Central NH Dispatch, likely experienced both the lightning effects in	Concord Hazard Mitigation			+										+

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2014					went down due to equipment failure so Merrimack County dispatch went down.	Town and the emergency response problems with the main tower down.	Committee, CNHRPC												
Warner Winter School Closures Jan-Dec 2014	2014	Jan-Dec	No	N/A	The Kearsarge Regional School District has several communities – Sutton, Warner, New London, Bradford, Newbury.	2014 Snow Days (School out) 6 days: 1/6, 2/5, 2/13, 2/14, 2/18, 2/21, 12/9.	Warner Hazard Mitigation Committee, CNHRPC					+	+						
Warner Lyme Disease Epidemic 2014 - 2018	2014-	2018	No	N/A	Likely experienced by other Central NH region communities during the same time period.	Residents have been known to have been subjected to and tested for Lyme Disease; many are positive. Spring is particularly bad. Warner is a rural, forested town and is used for outdoor recreation. The problem may become worse.	CNHRPC, NH Dept of Environmental Services						+		+				
Warner Epicenter Earthquake 2.6M (Mercalli IV) Oct 2013	2013	Oct 11	No	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 in Hopkinton, Henniker, Bradford, Warner, Concord, Salisbury, Franklin. 124 citizen reports made to the USGS.	Warner residents heard a sonic boom. The Town received a call from State asking about damage, but there did not seem to be any.	Warner Hazard Mitigation Committee, CNHRPC, earthquake.usgs.gov							+					
Warner Silver Lake Cyanobacteria Jul-Aug 2013	2013	Jul 10-16 & Aug 27	No	N/A	This condition was localized to Warner although other NH Lakes received similar notifications.	Silver Lake Town beach closed from July 10-16 for High Bacteria counts. The beach closed August 27 and remained closed for the remainder of the season for High Bacteria.	CNHRPC, NH Dept of Environmental Services						+		+				

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NH Severe Storms, Flooding and Landslide Jun-Jul 2013	2013	Jun 26 – Jul 3	4139	N/A for Warner	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>	Warner could not apply for or receive PA funding. Severe rain storms washed out the Bartlett Loop Road Fish & Game culvert. The road was closed and the culvert replaced with a new structure.	FEMA, CNHRPC, Warner Hazard Mitigation Committee				+			+						
Severe Winter Storm and Snowstorm - Winter Storm NEMO 2013	2013	Feb 8-10	4105	\$15,858	Winter Storm "Nemo". FEMA-3360-DR. Blizzard conditions with winds gust of 50-60 MPH and over 20 inches snow hit New Hampshire and the New England area. Disaster declaration received for emergency protective measures in eight counties of the State.	Warner received \$15,858 in FEMA Public Assistance funding for snow removal and for protective measures. Heavy snow with 50-60 MPH wind (blizzard conditions) resulted in 20-22 inches of snow. There were some downed trees associated with this storm.	FEMA, Warner Hazard Mitigation Committee, CNHRPC		+			+	+							+
Warner Hazardous Materials Spill Feb 2013	2013	Feb	No	N/A	Interstate 89 travels east-west from Concord to the Canadian border from Vermont. Many vehicles are believed to carry hazardous materials through Warner.	A truck carrying kitchen waste overturned at Exit 9 off Interstate 89 South resulting in the spillage of several gallons of liquid waste onto the ground off Route 103.	Warner Hazard Mitigation Committee, CNHRPC								+		+	+		
Warner River Hazard and Erosion/ Washout Spring 2013	2013	Unk	No	N/A	N/A, although the State of NH owned the land and timber	The State had a timber harvest on Kearsarge Mountain Road in 2012. The following Spring in 2013, French Brook	Warner Hazard Mitigation Committee, CNHRPC				+			+						

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Hurricane Sandy Oct 2012	2012	Oct 26-Nov 8	4095-EM-3360	\$2,359	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.	Warner received \$2,359 in FEMA Public Assistance funding for protective measures. High winds blew trees down, minor power outage for 2-3 days were experienced. Business was affected due to town wide internet loss experienced by local provider (TDS Telecom) – they had to close or use manual systems. Downed trees took out power and phone service to over 100 residents.	Warner Hazard Mitigation Committee, FEMA, Nashua Telegraph, CNHRPC		+		+								+
Earthquake 4.0M Hollis ME Epicenter Oct 2012	2012	16-Oct	No	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 Warner with an earthquake of this magnitude as it was felt around the Central NH Region. It was felt in Warner but there were no apparent damages.	Concord Monitor, Earthquake--track.com, CNHRPC, Warner Hazard Mitigation Committee							+					
NH Severe Storm and Flooding May 2012	2012	May 29-31	4065	N/A for Warner	This declared disaster for Cheshire County. Public Assistance (PA) was available and Hazard Mitigation	Warner could not apply for or receive PA funding.. There were no specific issues in Town	FEMA, CNHRPC		+		+								

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					Assistance (HMA) became available statewide. Damage per capita was high – Cheshire (\$26.04). <u>Not declared in Merrimack or Hillsborough Counties.</u>	noted. Any flooding, tree fall or other problems were handled as normal response.													
Tropical Storm- Irene Aug-Sep 2011	2011	Aug 26-Sep 6	4026	\$11,248	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.	Warner received \$11,248 in FEMA Public Assistance funding for protective measures, debris removal and roads and bridges. Bartlett Loop Road, Cunningham Pond Rd, Parade Ground Cemetery Rd Intersection, Schoodac Rd, New Market Rd damages. The Fire Station was staffed in anticipation of a significant event. Wind and rain impacts were experienced in Town with some road washouts. Branches came down, and people pumped out basements. Residents lost power during this storm due to trees taking down wires. Damage was minimal in comparison to other areas of the State.	FEMA, Warner Hazard Mitigation Committee, CNHRPC, NH State Climate Office 8/11 Summary		+		+								+
April Fool's Snowstorm Apr 2011	2011	Apr 1	No	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	The first April Fool's (2011) snowstorm with heavy, wet snow brought down trees and powerlines. Power outages ensued.	Warner Hazard Mitigation Committee, wmur.com, CNHRPC, cbsnews					+	+						

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					were reported, no serious injuries were reported.														
Warner Home Invasion & Terrorism Jan 2011	2011	Jan	No	N/A	N/A, although mutual aid might have responded.	A home invasion occurred to residence on West Main Street. After a police standoff, the intruder shot and killed himself.	Warner Hazard Mitigation Committee, wmur.com, CNHRPC												+
Warner Flooding – Valentine’s Day 2009	2009	Feb	No	N/A	It is likely other communities experienced the extreme temperature fluctuations and resultant flooding	Culverts frozen prompting road damage from blocked culverts.	Warner Hazard Mitigation Committee, CNHRPC				+	+	+						
Severe Winter Storm - Dec 2008 Ice Storm	2008	Dec 11-23	1812	\$16,438	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	Warner received \$16,438 in FEMA Public Assistance funding for debris removal and protective measures. The Town opened the Library as a warming center to assist residents. Trees and power lines downed due to the ice buildup on trees. All of Warner was without power for approximately 72 hours when trees took out wires and poles feeding the Pumpkin Hill Road Substation. Power was not restored to the whole town for 10 days. With the loss of power to the whole Town,	Warner Hazard Mitigation Committee, FEMA, CNHRPC					+	+						+

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					event, with some customers without power for two weeks. Property damage across northern, central and southeastern NH was estimated at over \$5 million. Event was the largest power outage in NH history.	businesses were forced to close- residents rely on these food and fuel services. Power to the Exit 9 area and the Village Center had power restored first.													
Warner Lightning Strike Circa 2008 – 2013	2008-	2013 circa	No	N/A	N/A, although likely other lightning strikes occurred in the Central NH Region.	A lighting strike hit a tree in the woods behind a residence on Pumpkin Hill Road. Fire Dept personnel used Off Road Equipment to extinguish the fire.	Warner Hazard Mitigation Committee, CNHRPC			+									
Severe Storms and Flooding (Hurricane Hannah) - Sep Flood 2008	2008	Sep 6-7	1799	\$0	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 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)	Warner did not apply for or receive FEMA Public Assistance funding. Warner sustained damage to culverts ditches and roads, resulting in road closures. The washouts and trees down from the storm were repaired and/or removed in a business as usual fashion. No specific recollections of this event were available.	FEMA, Warner Hazard Mitigation Committee, CNHRPC		+		+								
Severe Winds, Heavy Rains & Tornado July 2008	2008	Jul 24	1782	\$13,805	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	Warner received \$13,805 in FEMA Public Assistance funding for debris removal, protective measures, roads and	FEMA, Warner Hazard Mitigation Committee, CNHRPC		+										+

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/ Dam	Winter/ Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					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	bridges. Bible Hill Rd, Horne Street, culverts and road repairs. High wind with heavy rainfall resulted in flooded roads. There were no injuries reported in Warner. The Town did receive FEMA funds as a result of the washed out roads.													
Warner Snow Load Roof Collapses Apr 2008	2008	Apr	No	N/A	Likely other communities were impacted by this heavy snow and warming melt in the area.	There were four buildings in Warner with roofs that collapsed as a result of the heavy snow loads. There were no injuries reported as a result of the collapses.	Warner Hazard Mitigation Committee, CNHRPC					+	+						
Severe Storms and Flooding - Spring Flood April 2007	2007	Apr 15-23	1695	\$131,514	Extensive flooding caused by severe storms impacted seven counties. Indirect peak discharge measurements on stream gages on the Suncook River at Short Falls Road in Epsom were 14,100 ft ³ , 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	Warner received \$131,514 in FEMA Public Assistance funding for roads & bridges, protective measures and recreational/other. Road repairs: Bagley Hill Rd, Bean Rd, Bible Hill Rd, Brown Rd, Burnt Hill Rd, Collins Duck Pond, Flanders, Gore, Horne St, Mason Hill Rd, Couchtown Rd, Iron Kettle Rd, New Market Rd, North Rd, Old Denny Hill Rd, Parade Grounds Cemetery Rd, Poverty Plains Rd, Quimby	FEMA, USGS Flood of 2007, Warner Hazard Mitigation Committee, CNHRPC		+		+								

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological	
					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.	Rd, Red Chimney Road, Dummer Rd, Retreat Rd, Schoodac Rd, Willaby Colby Rd. Less than a year after the Mother's Day Flood, a result of the heavy rains and flooding harmless creeks, streams and brooks turned into roaring rapids as well as the water runoff from the woods which could not get into the snow filled culverts and ditches.														
Hopkinton Municipal Building Arson Jan 2007	2007	Jan 15	No	N/A	According to investigators, a fire that destroyed a senior center under construction in Hopkinton appeared to be caused by arson. The two-story building was being framed and was set to open in the spring.	N/A, although Warner abuts Hopkinton to the west and may have assisted the Town	Concord Monitor, CNHRPC												+	
Warner River Erosion and Repair 1990s To 2007	1990s-	2007	No	N/A	N/A, likely a localized condition in Warner	Horne Street has washed out several times due to flash flooding of Slaughter Brook. Hazard Mitigation Grants received to add drainage runoff	Warner Hazard Mitigation Committee, CNHRPC				+	+		+						
Severe Storms and Flooding – Mother's Day Flood May 2006	2006	May 12-23	1643	\$286,312	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.	Warner received \$286,312 in FEMA Public Assistance funding for roads and bridges, protective measures, recreational, covered bridges, shoulders. Damages included Bartlett Loop Rd, Dalton Covered Bridge (West	Warner Hazard Mitigation Committee, FEMA, USGS, CNHRPC		+		+			+						

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/ Dam	Winter/ Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
						Joppa Road), need for culvert replacement, temporary bridges and more. Nicknamed the Mother's Day Flood, severe rains washed out many roads stranding residents as well as washing away a large culvert known as Connors Mill Bridge. One of Warner's covered bridges, Dalton/West Joppa Road, sustained damage by the floating debris.													
Severe Storms and Flooding - Columbus Day Flood Oct 2005	2005	Oct 7-18	1610	\$75,357	Extensive flooding caused by severe storms impacted five counties, including Merrimack and Hillsborough. Alstead experienced several fatalities as the result of dam failure.	Warner received \$75,357 in FEMA Public Assistance funding for roads & bridges and recreational fields, culverts and shoulders. Continuous rains resulted in numerous gravel roads washing out as well as culverts and stone structures	Warner Hazard Mitigation Committee, FEMA		+		+			+					
Regional Thunderstorms and Lightning Jun 2005	2005	12-Jun	No	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.	Warner experienced severe storms, localized flooding and lightning strikes.	Warner Hazard Mitigation Committee, CNHRPC, Area Hazard Mitigation Committees		+	+									

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Snow Emergency Jan 2005	2005	Jan 22-23	EM-3207	\$9,136	Record and near record snowstorm for 8 NH counties including Merrimack and Hillsborough. Emergency protective measures declared for reimbursement.	Warner received \$9,136 in FEMA Public Assistance funding for protective measures, including snow removal and debris clean up. Record snows fell during this time period causing many closures.	Warner Hazard Mitigation Committee, CNHRPC, FEMA					+	+						
Hazard Events 2004-1973																			
Hopkinton Earthquake 2.3M Epicenter Aug 2004	2004	Aug 28	No	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 Warner residents feeling the earthquake as a rumble or loud noise. The epicenter was within 5 miles of Warner, the next town to the east.	Earthquake Monitor, CNHRPC, earthquake.usgs.gov							+					
Warner Hazardous Materials Spill May 2004	2004	May 9	No	N/A	NH 103 travels east-west from Hopkinton to the Vermont. Many vehicles are believed to carry hazardous materials through Warner.	Vermont Transit Bus spilled and unknown quantity of Diesel Fuel on the roadway on Warner Road and on State Route 103 East.	Warner Hazard Mitigation Committee, CNHRPC								+		+	+	
Henniker-Hopkinton Earthquake 2.2M Epicenter Jan 2004	2004	Jan 20	No	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.	Reports were likely made to the USGS by Warner residents feeling the earthquake as a rumble or loud noise. The epicenter was within 5 miles of Warner to the south.	Concord Monitor, January 2004, Earthquake Monitor, CNHRPC, earthquake.usgs.gov							+					
Snow Emergency Dec 2003	2003	Dec 6-7	EM-3193	\$9,409	Record snow fall event impacting much of New England. In NH, 8 counties received emergency protective	Warner received \$9,409 in FEMA Public Assistance funding for protective measures	Warner Hazard Mitigation Committee,					+	+						

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					measures, including Merrimack and Hillsborough.	including snow removal and debris clean up. Record snows.	CNHRPC, FEMA												
Snow Emergency Feb 2003	2003	Feb 17-18	EM-3177	\$5,974	Record and near record snowstorm for 5 NH counties including Merrimack and Hillsborough. Emergency protective measures declared for reimbursement.	Warner received \$5,974 in FEMA Public Assistance funding for protective measures including snow removal and debris clean up. Record or near record snows in Warner. Residents lost power due to winter snow storm with high winds and falling trees.	Warner Hazard Mitigation Committee, CNHRPC, FEMA					+	+						
NH Drought Emergency Aug 2002	2002	Aug	No	N/A	All counties in the State of NH except Coos County. One of the hottest Augusts on 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.	Warner likely experienced loss of hay crops, tree farms, lowering of the Warner River	Warner Hazard Mitigation Committee, CNHRPC Concord Monitor 8/20/02, NHDES	+					+						
Snow Emergency Mar 2001	2001	Mar 5-7	EM-3166	\$7,587	Record and near-record snowfall from late winter storm, emergency declaration was issued for protective measures. Merrimack, Hillsborough and 5 other counties declared eligible.	Warner received \$7,587 in FEMA Public Assistance funding for protective measures, including snow removal and debris clean up. Blizzard conditions occurred in Town resulting in numerous power outages.	Warner Hazard Mitigation Committee, CNHRPC, FEMA		+			+	+						+
Warner Radiological Materials Fall 2000	2000	Fall	No	N/A	N/A, although other communities	Radioactive buttons found in metal container at Transfer Station. State DHHS assisted the Town	Warner Hazard Mitigation								+		+		

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Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
						in transferring these buttons to an approved disposal site out of state. This cost the Town several thousands of dollars.	Committee, CNHRPC												
Warner Hazardous Materials Spill May 2000	2000	May 9	No	N/A	NH 103 travels east-west from Hopkinton to Vermont border. Many vehicles are believed to carry hazardous materials through Warner.	Tractor Trailer incident on State Route 103 West spilled an unknown quantity of diesel Fuel onto the ground and into a small stream off Route 103.	Warner Hazard Mitigation Committee, CNHRPC								+		+	+	
Warner Hazardous Materials Spill Mar 2000	2000	Mar	No	N/A	N/A, although I-89, NH 103 and the Warner River travel through Warner and are able to transport haz materials from spills	Vehicle filling gas tank at the Irving Circle K spilled and unknown quantity of gasoline onto the ground. Spiller was billed for the spillage.	Warner Hazard Mitigation Committee, CNHRPC								+		+		
Warner Hazardous Materials Spills Various Dates 2000 - 2007	2000	- 2007	No	N/A	N/A, although I-89, NH 103 and the Warner River travel through Warner and are able to transport haz materials from spills	Traffic accidents on Interstate 89 and State Route 103 have resulted in the spillage of several gallons of diesel fuel onto the ground and into a small stream off Route 103.	Warner Hazard Mitigation Committee, CNHRPC								+		+		
Regional Downbursts and Severe Winds Jul 1999	1999	6-Jul	No	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	Downburst damaged trees on Old Pumpkin hill Road and on Route 103 West across from the Town's Transfer Station. Warner likely experienced some heavy winds, tree fall, and power lines down as it is located in the region.	Concord Monitor, NH HSEM, CNHRPC, Warner Hazard Mitigation Committee		+										

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Concord Terrorism/ Bomb Threats Oct 1998	1998	Oct, Oct 27	No	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. Oct 27-	N/A, although Concord is an important Central NH Region community to Warner residents for employment and shopping	AP Online, 11/01/98, NH HSEM, CNHRPC												+	
Severe Storms and Flooding Summer 1998	1998	Jun 12-Jul 2	1231	\$0	Heavy flooding in six counties, including Merrimack and Hillsborough Counties. Damages of \$3.4m for all counties.	Warner did not apply for/receive funding. Several roads such as Horne Street, Henniker Road and Parade Ground Cemetery Roads were washed out. Lost fill was replaced as well as clearing and reshaping culverts.	FEMA, CNHRPC, Warner Hazard Mitigation Committee		+		+									
Ice Storm of Jan 1998	1998	Jan 7-25	1199	\$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	Warner did not apply for/receive funding. Severe ice storm, rain and high wind impacted Warner with power outages and roads closed due to drifting snow. A communication tower and trees were damaged. Residents were without	FEMA, US Army Corps of Engineers NH Storms database, Warner Hazard Mitigation Committee, CNHRPC					+	+							

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					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.	power for up to seven days.													
NH Mass Casualty/Terrorism Aug 1997	1997	Aug	No	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 Warner specifically, but this tragedy occurred nearby	NH HSEM, CNHRPC												+
Flooding Feb 1997	1997	Feb 26	No	N/A	This winter flood event was likely one that impacted the Central NH Region and Merrimack County.	Gravel roads washed out due to flooding which included West Joppa Road. The roads was closed for a whole day stranding residents.	Warner Hazard Mitigation Committee				+	+							
Severe Storms and Flooding Oct 1996	1996	Oct 20-23	1144	\$0	Heavy rains caused flooding in six counties, including Merrimack and Hillsborough Counties. Damage totaled \$2.3m for all counties.	Warner did not apply for/receive funding. As Warner is within Merrimack County, it is likely experienced heavy rains and possibly some flooding.	FEMA, NH HSEM, CNHRPC		+		+								
Bradford Milfoil Infestation Sum 1996	1996	Summer	No	N/A	Milfoil was discovered on the north end of Lake Massasecum in Bradford. A 10 to 11 acre portion of the lake was closed. Several chemical treatments were tried but failed to eradicate the milfoil. Eventually, the weed was harvested. To this	Milfoil has not yet been reported in Warner, but the plant ravel easily to new waters and easily establishes new colonies. The Town has few public lakes and ponds, including	Bradford Hazard Mitigation Committee, CNHRPC, Blaisdell Lake Property Owners Assn								+		+		

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
					day, the Town of Bradford fights milfoil in its lakes.	Silver Lake, Tom's Pond, Pleasant Pond.													
Warner Structure Fire Dec 1995	1995	Dec	No	N/A	Several area communities responded to this fire to assist Warner	A fire broke out on the second floor of the old section of the Warner Power building. Five alarms were sounded for this fire, requiring fire units for as far away as Concord and New London. It took several hours to extinguish. Residents residing in the area of the fire were evacuated as a precaution due to the material burning in the building.	Warner Hazard Mitigation Committee, CNHRPC			+									
Storms and Floods Oct-Nov 1995	1995	Oct 20-Nov 15	1077	N/A	Four NH counties were damaged by excessive rain, high winds and flooding, including Merrimack (not Hillsborough).	Warner did not apply for/receive funding. Several gravel roads were washed out particularly Bagley Hill Road, Colby Lane and Henniker Road. Some roads were closed until repairs could be made.	FEMA, Federal Register, CNHRPC, Warner Hazard Mitigation Committee		+		+								
Newbury Terrorism/Active Shooter Nov 1993	1993	Nov 1	No	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 Warner specifically, but this tragedy occurred nearby. Newbury is two communities to the west of Warner	NH HSEM, CNHRPC											+	
Blizzard Mar 1993	1993	Mar 13-17	EM-3101	\$4,406	Blizzards, High Winds and Record Snowfall. It is likely the Central NH Region experienced heavy snow, tree fall.	Warner received \$4,406 in FEMA Public Assistance funding for protective measures	NH HSEM, CNHRPC,					+	+						

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						including snow removal and debris clean up													
Warner Dam Failure Date Unknown	Unk	Unk	No	N/A	N/A, was a localized effect	A Bean Road landowner modified the spillway of their private dam, resulting in dam outfall to flood a section of the roadway. Town resources repaired roadway.	Warner Hazard Mitigation Committee				+								
Warner Dam Failure Apr 1992	1992	Apr	No	N/A	N/A, was a localized effect	Apple Pond Lane washout occurred, caused by plugged private dam overflow due to improper dam maintenance.	Warner Hazard Mitigation Committee				+								
Severe Storm-Hurricane Bob Aug 1991	1991	Aug 18-20	917	N/A for Warner	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 Warner is within Merrimack County, it likely experienced heavy rains, wind gusts, tree debris, power outages and possibly some flooding.	FEMA, CNHRPC		+										
Flooding and Severe Storm Aug 1990	1990	Aug 7-11	876	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 Warner is within Merrimack County, it likely experienced heavy rains, tree debris, power outages and possibly some flooding.	FEMA, NH HSEM, CNHRPC		+		+								
Severe Storms and Flooding Mar-Apr 1987	1987	Mar 30-Apr 11	789	No data available	Flooding caused by snowmelt and intense rain was felt in seven counties, including Merrimack and Hillsborough Counties. Nearly \$5m in damages.	Flooding caused by snowmelt and intense rain was felt in Warner. Several roads were damaged as a result of the flooding including Horne Street and West Joppa Road.	Warner Hazard Mitigation Committee, CNHRPC FEMA, NH HSEM, US Army Corps of Engineers				+		+						

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/ Dam	Winter/ Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
Severe Storms and Flooding Jul-Aug 1986	1986	Jul 29-Aug 10	771	N/A for Warner	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).	Several storms washed out roads and culverts. The Tom’s Pond area flooded resulting in propane tanks from the cottages floating in the flood.	FEMA, NH HSEM, CNHRPC, Warner Hazard Mitigation Committee		+	+	+						+		
Warner Downburst 1985	1985	Circa	No	N/A	N/A although it is likely this windstorm impacted other area communities.	A downburst took down trees on Pumpkin Hill Road and Burnt Hill Road.	CNHRPC, Warner Hazard Mitigation Committee		+										
Earthquake 4.5M Sanbornton Jan 1982	1982	Dec	No	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 northern Merrimack County including the Concord area communities in Central NH.	A Sanbornton-centered earthquake caused some physical damage in Warner. Sanbornton is about 25 miles to the northeast of Warner. The earthquake cracked the original glass panes in one Warner resident’s home.	CNHRPC, Earthquake-track.com, Warner Hazard Mitigation Committee							+					
Warner Wildfire Late 1970s	1970s	Circa, late	No	N/A	The Mink Hills are shared with Bradford and Henniker, so it is possible the wildfire crossed municipal boundaries.	A large forest fire in the Mink Hill area inflicted considerable damage.	Warner Town Historians from the Hazard Mitigation Committee			+									
Warner Lightning Strikes Sep 1979	1979	Sep	No	N/A	It is likely the surrounding Central NH Region experienced lightning and thunderstorms.	A barn (Highlawn Farm) on Kearsarge Mountain Road was struck by lightning and destroyed. Four animals were killed.	Warner Hazard Mitigation Committee		+	+									
Warner Ice Jam 1978	1978	Circa	No	N/A	May have been a localized effect to the Warner River	At Sonny Flanders’ residence, the Warner River backed up causing the flooding of some residents on Morse Loop.	Warner Hazard Mitigation Committee				+	+							

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
						The Town Crew used explosives to free the ice.													
NH Blizzard of Feb 1978	1978	Feb 5-7	No	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 the Town as occurred in Merrimack County and New England	Warner Hazard Mitigation Committee; American Meteorological Society, Northeast States Emergency Consortium, CNHRPC					+	+						
Warner Snow Melt May 1976	1976	May	No	N/A	Likely the Central NH Region experienced localized flooding conditions.	Late season snowstorm with heavy rain resulted in major runoff and flooding of roads and culverts.	CNHRPC, Warner Hazard Mitigation Committee				+	+	+						
Warner Structure Fire Jan 1974	1974	Jan 12	No	N/A	Likely other Fire Departments assisted with the fire	A major fire broke out in the Cricenti’s Market located on Main Street. Area Fire Departments responded to this fire. Warner Fire Department personnel remained on scene for approximately	Warner Hazard Mitigation Committee, CNHRPC			+									

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						10 hours. See related photo in Appendix E.													
Quebec Earthquake 4.8M Jun 1973	1973	15-Jun	No	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 Warner residents may have felt the effects.	Northeast States Emergency Consortium, CNHRPC							+					
Severe Storms and Flooding Jul 1973	1973	Jul 11	399	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 Mink Hill area as well as Howe Lane and Willaby Colby Road.	FEMA, CNHRPC, Warner Hazard Mitigation Committee		+		+								
Hazard Events Before 1973																			
Earthquake Dec 1970	1970	Dec 25	No	N/A	The origin and magnitude are unknown but likely impacted the Central NH Region.	Several small tremors have been felt throughout the years, including Christmas Day in the 1970's in Warner.	CNHRPC, Earthquake-track.com, Warner Hazard Mitigation Committee							+					
Older Hurricanes 1954-1991	1954	to 1991	No	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 Warner during many of these hurricanes. 1960- Hurricane Donna impacted Warner 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.	Warner Hazard Mitigation Committee, NH Homeland Security and Emergency Management, CNHRPC		+		+								

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological	
10 Severe Snowstorms 1940-1978	1940	to 1978	No	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 what Warner experienced, it is likely many of the same snow depths occurred.	American Meteorological Society, CNHRPC		+		+									
Warner Wildfire Late 1960s	1960s	Circa, late	No	N/A	N/A, although other local Fire Departments may have lent assistance	There was a forest fire that impacted the Page Road area.	Warner Town Historians from the Hazard Mitigation Committee			+										
Warner Wildfire 1957	1957	Circa	No	N/A	The Mink Hills are shared with Bradford and Henniker, so it is possible the wildfire crossed municipal boundaries.	A fire in the Mink Hills area impacted Waldron Hill.	Warner Town Historians from the Hazard Mitigation Committee			+										
Regional Snow Storm and Rapid Snow Pack Melt Mar 1953	1953	Mar	No	N/A	N/A, although similar rain or snow storms and rapid snow pack melt likely impacted the 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 storm was not particularly notable by the Town, although the rapid snow pack melt probably caused flooding effects in Warner along the roads, Warner River, and main brooks.	FEMA, NH HSEM, US Army Corps of Engineers, CNHRPC				+	+								

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
Warner Firewatch Wildfires Early 1930s & Early 1940s	1930s early	1940s early	No	N/A	N/A, although other local Fire Departments may have lent assistance to these two blazes	A fire on Kearsarge Mountain impacted Gage Hill and Black Mountain	Warner Town Historians from the Hazard Mitigation Committee			+									
Regional & Warner Hurricane of Sep 1938	1938	Sep 21	No	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.	One of the worst natural disasters to hit Warner was the Hurricane of 1938 (Warner 1974 Town History). The disaster impacted Warner with several days of torrential rain and subsequent heavy flooding. Roads were washed out and bridges were carried away. Culverts and bridges were damaged, and railroad service was interrupted. No deaths occurred in Warner. According to the Town Maintenance section of the Warner Town Report, the flood and hurricane account for the year 1938-1939 was \$1,660.24. It seems likely that a good portion of this money went to repair damage caused by the hurricane on September 21, 1938. Heavy flooding throughout Warner, bridges were damaged and roads were washed out.	CNHRPC, USGS 1938 report, Warner Hazard Mitigation Committee, Warner 1974 History, Warner Town Report 1939		+	+									

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological	
Regional & Warner Flood of Mar 1936	1936	Mar 11-21	No	N/A	Simultaneous high snowfall totals, heavy rains, and warm 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.	The Warner River was at one of its highest level in history, ice jams occurred all along the river, the Ela Bridge went out, the Davisville Covered Bridge was taken out, other bridges were washed away, roads badly washed out, and railroad service was not available for weeks. The photos of the flood of 1936 and of a hurricane of 1938 showed the roadways at both North Warner and South Warner underwater. Canoes and rowboats were used on Route 114.	Concord Monitor, Union Leader, Army Corps of Engineers Ice Jam Database, CNHRPC, USGS 1938 report, Warner Town Historians from Hazard Mitigation Committee 2004				+	+								
Warner Flood 1927	1927	Circa	No	N/A	Likely the Central NH Region experienced localized flooding conditions.	Heavy floods damaged the Ela Box Company. (See a related photo in Appendix E)	Warner Town Historians from Hazard Mitigation Committee 2004				+									
Warner Lightning Strikes Circa 1900s	1900	Circa	No	N/A	It is likely the surrounding Central NH Region experienced lightning and thunderstorms.	Several homes were struck by lightning and burned on Collins District Road.	Warner Town Historians from Hazard Mitigation Committee 2004		+	+										
Warner Drought, then Flood Aug 1826	1826	Aug 28	No	N/A	Likely the Central NH Region experienced localized flooding conditions.	A summer drought brought out the grasshoppers. Heavy rains caused streams and rivers to overflow. 12" of rain in 6 hours caused	Warner Town Historians from Hazard Mitigation Committee 2004	+			+									

DRAFT

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
						Steven Brook to change its course.													
Warner Flood Feb 1824	1824	Feb 11	No	N/A	Likely the Central NH Region experienced localized flooding conditions.	Heavy rain flooded streams and local rivers caused local bridges to wash away. Gale force winds with snow melt resulted in ice jams.	Warner Town Historians from Hazard Mitigation Committee 2004				+	+							
Warner Great Tornado of Sep 1821	1821	Sep 2	No	N/A	The route of the twister started at the Vermont state line and went through Boscawen, hitting several towns along the way. Descriptions indicate that this twister was similar to the Midwestern variety and that far greater death and damage would have resulted if its narrow path had included any of the larger settlements in the state.	On September 2, 1821 a tornado struck Warner after moving through many towns from the Vermont line. Seven deaths occurred in Warner as a result of the twister, and several severe injuries. The tornado passed over Kearsarge Mountain about two miles south of its highest peak and swept down the other side into the valley, known as Kearsarge Gore at the time, in Warner. Homes and barns were demolished and many people found themselves buried in the ruins.	Warner Town Historians from Hazard Mitigation Committee 2004		+										
Warner Tropical Storm and/or Tornado Sep 1815	1815	Sep 25	No	N/A	This was likely an event that covered much of southern NH with wind, rain, tree debris. Neighboring Sutton was mentioned as experiencing the same events.	In Warner, the atmosphere was filled with salt spray from the ocean. Trees and crops damaged from wind and heavy rain. During the hurricane, a tornado formed resulting in several downed trees.	Warner Town Historians from Hazard Mitigation Committee 2004		+		+								

DRAFT

Event	Year	Date	DR-EM-	FEMA PA Funding \$	Area Impact Description	Local Impact Description	Source	Drought	High Wind/Tropical/Downburst	Wildfire/Fire/Lightning	Inland Flood/River/Dam	Winter/Snow/Ice	Extreme Heat/Cold	Earthquake/Landslide	Public Health/Biological	Solar	Haz Mat/Radiological	Human	Technological
						The fruit tasted of salt from the storm. A tornado swept through Kearsarge Gore during this event. It contributed to the changing of the Kearsarge Gore.													

Source: Warner Hazard Mitigation Committee and CNHRPC

Description and Magnitude of Hazards

A compilation of past hazards that have occurred in Warner 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.

The **2024** natural hazard categorization identified previously which separates the primary natural hazards into groupings is also used as a framework to describe and evaluate each of the hazards. The human and natural hazards included in previous Plans are also considered here since they do have impacts on Warner.

Each hazard is generally described and then is noted how and where it could occur in Warner. Details related to the scientifically measured magnitude scales are provided.

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.

Hazard Type	Main Hazard Category	Specific Hazards Included
Hydrologic	Drought	Drought
	Wildfire	Wildfire, Fire
	Flood/River	Dam Failure, Inland Flooding, River Hazards
Atmospheric	High Wind/Tropical/Storm	Thunderstorm, Downburst, High Wind, Tornado, Tropical and Post-Tropical Cyclone, Hail
	Lightning	Lightning
	Winter	Winter Storm, Blizzard, Ice Storm
	Extreme Temperature	Cold Wave, Heat Wave
Geologic	Earthquake/Landslide	Earthquake, Landslide
Biologic	Public Health/Biological	Swimming Water Quality, Air Quality, Drinking & Surface Water Quality, Infectious Diseases, Arboviral Diseases, Tickborne Diseases, Substance Misuse
Heliospheric	Solar	Geomagnetic Storm, Solar Radiation, Radio Blackout
Haz Mat	Hazardous Materials/Radiological	Hazardous Materials, Radiological
Human	Human Hazard	Crash, Mass Casualty Incident, Cyber Event, Terrorism/Violence
Technological	Technological	Aging Infrastructure, Conflagration (Fire), Long Term Utility, Outage

Several natural hazards in the *State of New Hampshire Hazard Mitigation Plan 2023* are not pertinent in Warner. These hazards are **Coastal Flooding, Avalanche, Tsunami, and Volcanic Activity**. These are not discussed in Warner’s Plan.

HYDROLOGIC HAZARDS

The hydrologic hazards evaluated in the **Hazard Mitigation Plan** are:

Hazard Type	Main Hazard Category	Specific Hazards Included
Hydrologic	Drought	Drought
	Wildfire	Wildfire, Fire
	Flood/River	Dam Failure, Inland Flooding, River Hazards

Drought

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Drought	8.0	HIGH	+25%	D3 Exceptional Drought	D0 Abnormally Dry to D4 Exceptional Drought	US Drought (D-scale) Monitor Intensity Scale

A drought is defined as a long period of abnormally low precipitation, especially one that adversely affects growing or living conditions. Droughts are becoming more common in New Hampshire, often coupled with regular, severe, heavy rainstorms. Rain is unable to percolate into the soil, running off into ditches, overflowing wetlands and culverts, eroding roadways. The effect of droughts is indicated through measurements of soil moisture, groundwater levels, and streamflow. However, not all 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. The Town has the capability to implement or recommend volunteer water restrictions during dry conditions within the Warner Village Water District district, including the Main Street area and Kearsarge Mountain Road.. The remaining residences, non-residential buildings and Town 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 **2015-2022** drought periods, 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 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 uses stationary water sources for pumping into tankers, like cisterns in neighborhoods and dry hydrants at ponds and water sources located around the Town. Although the Warner River is in proximity, there is currently no drafting access, a situation to be remedied with the NH 127 Dustin Bridge rehabilitation in **2025-2026**.

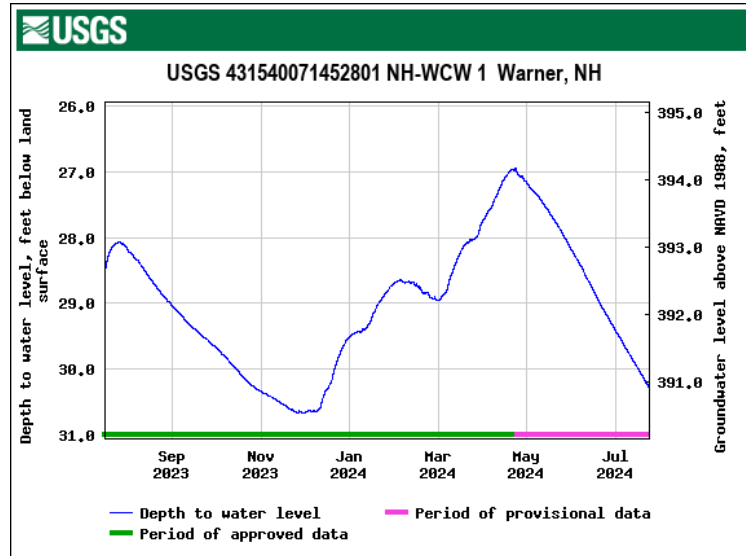
Table 4.6 displays overall drought magnitude as measured by the US Drought Monitor (USDM) and Palmer Hydrological Drought Index (PHDI), the extent of hydrological drought in the form of long-term, cumulative monthly moisture conditions. The weekly US Drought Monitor for NH can be accessed online. The Palmer indices are developed by algorithms taking into consideration precipitation, temperature data, and the local Available Water Content (AWC) of the soil.

Table 4.6
US Drought Monitor Intensity Scale

Category	Description	Description of Possible Impacts	Palmer Drought Severity Index (PDSI)
None	Normal or wet conditions	Normal or near normal conditions.	-1.9 to +1.9
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 - higher

The levels of groundwater in a community can contribute to dry, drought conditions including a lower water table. In Warner, a permanent monitoring well is located between I-89 and Poverty Plains road and has been in place since before 1970. Data from the site includes depth to water level, feet below the surface fluctuates according to season and precipitation. The water level generally hovers between 28-30 feet below the ground. As shown in Figure 4.A.

Figure 4.A
USGW Warner Groundwater Monitoring Well NH-WCW1, July 2023-July 2024



Drought Resource Links:

- US Drought (D-scale) Monitor Intensity Scale
<https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NH>
- National Integrated Drought Information System (New Hampshire)
<https://www.drought.gov/drought/states/new-hampshire>
- USGS Water Data Monitoring Location at Warner (NH-WCW1)
<https://waterdata.usgs.gov/monitoring-location/431540071452801>

Wildfire

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Wildfire	6.0	MEDIUM	+25%	Very High Fire Danger (Orange)	Low (Green) to Extreme (Red) Fire Danger	National Fire Danger Rating System

Fire can be caused by several agents and can spread rapidly to consume property and endanger lives. This **2024 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, densely packed residential areas, cul-de-sacs, and roads or areas of Town 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**.

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 the Town’s conservation lands, **wildfire** seems particularly relevant. The burning of brush, permitted or not, can become an uncontrollable brushfire in dry or unsuitable conditions.

Increased severity over recent years in California, Quebec and Nova Scotia has decreased capability to extinguish wildfires because of the personnel drawn from other parts of the country, including New Hampshire. Wildfires are unpredictable and usually destructive, causing both personal property damage and damage to community infrastructure and cultural and economic resources. Recent air quality impacts have been experienced by New Hampshire residents as a result of the 2021- 2023 Canadian and Nova Scotian wildfire smoke.

When wildfire occurs locally, there are several potential indices to gage its extent and severity. The current standard of measuring wildfire magnitude is utilizing the National Wildfire Coordinating Group (NWCWG)’s wildfire classification scale. **Table 4.7** displays the wildfire classification size per the number of acres burned.

Table 4.7
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 National Fire Danger Rating System (NFDRS) information in a prominent location, at the Fire Station.

National Fire Damager Rating System Categories	
<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.

Wildfire Hazards Resource Links:

- New Hampshire Department of Natural and Cultural Resources Division (NHDNCR) of Forest and Lands (DFL)
<https://www.nh.gov/nhdf/community/daily-fire-danger.htm>
- National Wildfire Coordinating Group (NWCG) Incident Response Pocket Guide 2022
<https://www.nwcg.gov/publications/461>

Inland Flooding

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Inland Flooding	10.7	HIGH	+50%	500 Year Flood	100 Year to 500 Year Flooding	Special Flood Hazard Areas (SFHAs) on 2010 & Preliminary Digital Flood Rate Insurance Maps (Zones A, AE, X)
				Moderate >40% (Red)	>5% Marginal to >70% High Rainfall Risk	NOAA Excessive Rainfall Risk Categories

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 farming and enriches 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. The **500-year** floods are phrased as **0.2%** annual chance of flood.

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. **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.

Special Flood Hazard Areas (SFHAs)

Base Flood Elevations (BFEs) are abundant within Central NH along the Merrimack River, Contocook River, Blackwater River, Warner River, Soucook River, and Suncook River on the official FEMA Digital Firm Insurance Rate Maps (DFIRMs) DFIRMs of 2009 (Hillsborough County) and 2010 (Merrimack County). In Warner (#330123) New Hampshire (33011C), 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 for Warner are now set on an aerial photography background that displays roads, buildings, forested areas, waterbodies and watercourses. Warner’s Zoning Ordinance references the 2010 maps appropriately as the official DFIRMS. The general Flood Zone types appear in Table 4.8.

Table 4.8
Special Flood Hazard Area (SFHA) Zones on 2010 DFIRMS

Special Flood Hazard Areas on Warner DFIRMS	
Zone A	<p>1% annual chance of flooding</p> <ul style="list-style-type: none"> • 100-year floodplains without 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 with 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 without 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)

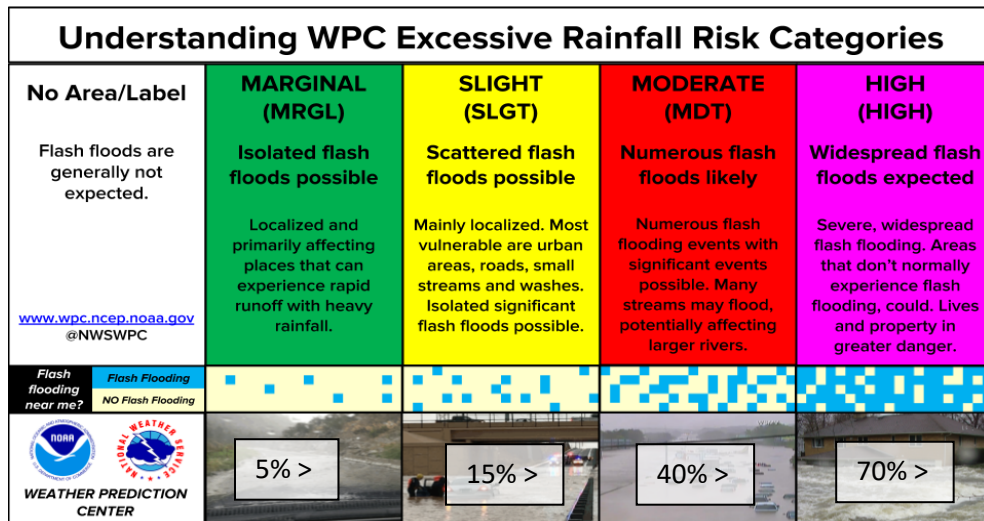
Sources: FEMA and NH Geographically Referenced Analysis and Transfer System (NH GRANIT) websites

Warner DFIRMs can be viewed online at and downloaded from the FEMA Map Center website. Alternatively, the DFIRMs’ respective paper FEMA 2010 Floodplain Maps in the Town Office could be consulted; the Zoning Ordinance Maps display the location of floodplains. 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.

New Preliminary October 2023 DFIRMs were produced for the Contocook River Watershed which includes the Warner River area and remain in this draft format subject to revision until they become the new official maps. Although the draft DFIRMs are available at the FEMA Map Center, the digital floodplain layer is not yet approved by FEMA. The FEMA Map Center site should be regularly reviewed to download the data once the new DFIRMS are active.

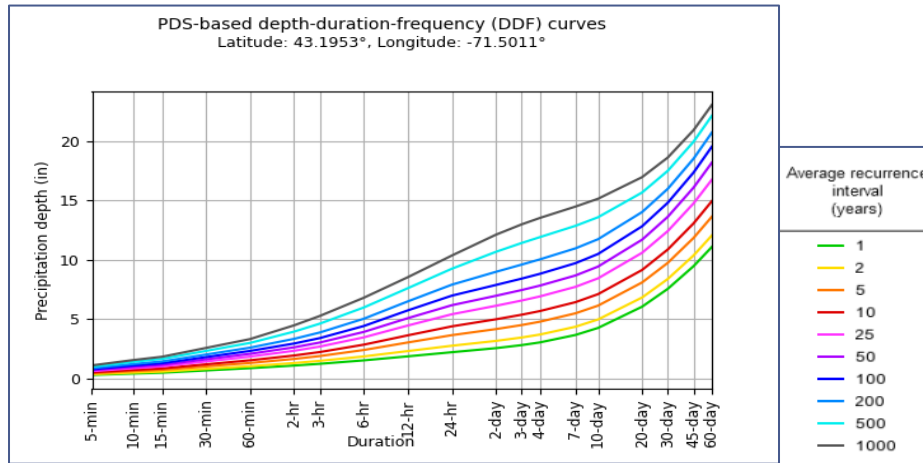
Excessive Rainfall

Inland flooding can come from many sources, including rainfall, snowmelt, and inundation. NOAA tracks storm systems that include excessive rainfall categories exceeding flash flood guidance within 25 miles of a point. These range from Marginal Risk (Green), isolated flash floods to High Risk (Pink), widespread flash floods. As more summer storms impact the Central NH region and the Northeast, excessive rainfall is likely to continue to occur due to climate change. Excessive rainfall can occur throughout Warner and can impact roadways and waterbodies.



The NWS developed a precipitation model that shows how much rain can fall during a period (duration) and charts the curve of the rainfall depth across the average yearly recurrence interval. At the nearby Concord Municipal Airport which collects weather and precipitation data, in 12 hours if 2" of rain falls, this is considered an annual occurrence. Yet, if in 12 hours 5" of rain falls, this is considered a 50-year occurrence at this location as shown in Figure 4.A. This model will vary depending on the location. Based on forecasting for each storm, the probability of flooding can be explained to the public using the Excessive Rainfall Risk image above.

Figure 4.B
NWS Precipitation Frequency Depth Recurrence at Concord Municipal Airport



Inland Flooding Resource Links:

- FEMA Flood Map Service Center
<https://msc.fema.gov/portal/home>
- NH Business and Economic Affairs (NHBEA) Office of Planning and Development (NH OPD) Current NH Floodplain Mapping Activities
<https://www.nheconomy.com/office-of-planning-and-development/what-we-do/floodplain-management-program/floodplain-maps>
- FEMA Flood Zone Designation Descriptions (2010)
https://efotg.sc.egov.usda.gov/references/public/NM/FEMA_FLD_HAZ_guide.pdf
- NOAA Excessive Rainfall Outlook
https://www.wpc.ncep.noaa.gov/qpf/excessive_rainfall_outlook_ero.php
- NOAA Atlas 14 Point Precipitation Frequency Estimates NH
https://hdsc.nws.noaa.gov/pfds/pfds_map_cont.html?bkmrk=nh

River Hazards

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

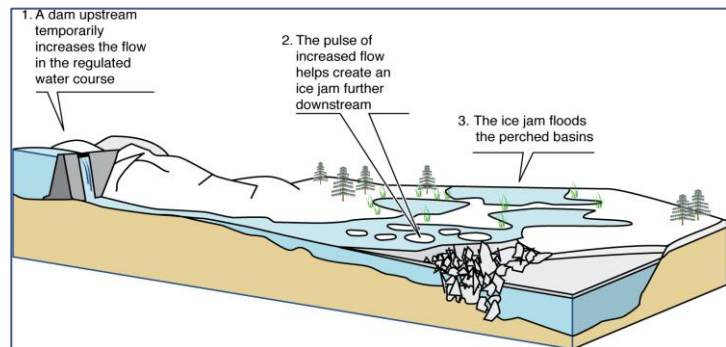
Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
River Hazards	10.7	HIGH	+50%	Much Above Normal Stream Flow (Dark Blue)	Much Below Normal Flow (Red) to Much Above Normal Stream Flow (Blue)	National Water Dashboard (USGS Stream Gages, Groundwater Monitors)
				12' Major Flood Stage (Purple)	6' Action Stage to 12' Major Flood Stage Warner River Davisville	USGS Warner River Flood Stage at Davisville (River Gage #01086000)

There are several types of **River** hazards examined in the **Hazard Identification and Risk Assessment**. 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.

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. The **Warner River** has experienced **ice jams** in the past. Roads in general are always susceptible to the effects of winter ice conditions, and this could include the **Warner River** that runs along NH 103 and parts of Main Street and side roads like Chemical Lane in Town.

Typical Ice Jam Commencement



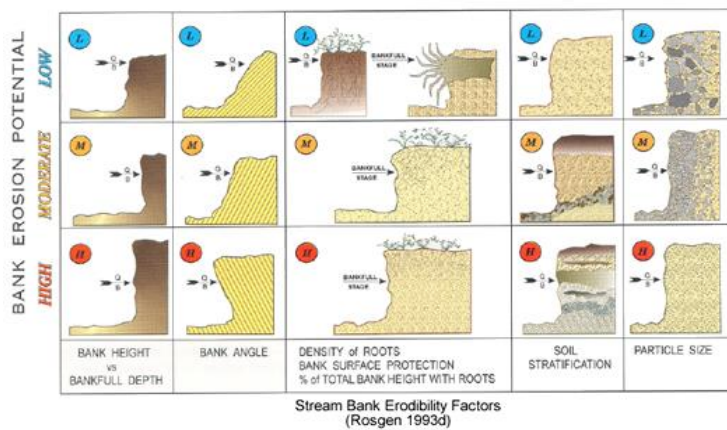
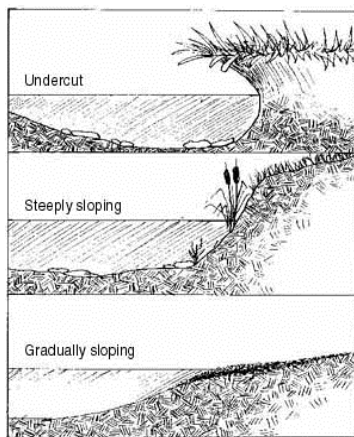
There is no standardized magnitude scale of ice jams. The US Army Corps of Engineers (ACOE) maintains the Ice Jam Database, Bulletins & Surveys website which locates where known ice jams are presently occurring and where they have occurred in the past. Reports can be generated in various formats so emergency 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. Visual bank erosion characteristics give cues as to how a bank can react to further water interference. In Warner, fluvial geomorphology is most pertinent to the **Warner River**. There is no standardized magnitude scale of fluvial or bank erosion.

Bank Erosion Characteristics



Floodplains of **Warner River** have the greatest potential for flooding, erosion, scouring or channel movement. The **Warner River** originates at the outlet of Lake Todd in Bradford and flows east along NH 103 to I-89 Exit 9. Historical village patterns originated with settlement along the Warner River, and this area between Exits 9 and 8 became known as Main Street. NH 103 parallels the Warner River and I-89. The River is integral to community life today. Collaboration with the NH Department of Transportation enables projects such as bridge rehabilitation, road reconstruction, and drainage improvements on state roads.

A collaborative project of Trout Unlimited Basil W. Woods Jr. Chapter, NH Fish and Game Region 2, and NH Geological Survey for the **Warner River** watershed's 6 communities of Bradford, New London, Newbury, Sutton, Salisbury, Warner, and Webster was concluded in **February 2019**. The assessment of over **200** watershed culverts evaluated physical characteristics to determine a Aquatic Organism Passage (AOP) rating, a Geomorphic Compatibility rating, and especially pertinent the **Hazard Mitigation Plan**, a Storm Vulnerability (flooding events) rating for most of these stream crossings. The *Status of Stream Crossings in the Warner River Watershed, Revised February 2019* contains the full assessment data and the material appears in the **2019 Plan**. Dead trees continue to fall into the **Warner River** because of drought and disease; these may block infrastructure during flood events. The location of the Warner River through the Central NH region is shown with a $\frac{1}{2}$ mile buffer in **Figure 4.C**.

Figure 4.C
Warner River and $\frac{1}{2}$ Mile Buffer



Source: Warner River Corridor Management Plan 2022

River Height and Flow Volume by Stream Gages

Stream gages are dynamic measurement tools that enable immediate warning of river volume. The National Water Dashboard includes an inventory of the USGS Stream Gages and Groundwater Monitors, enabling flow levels between Much Below Normal Flow <10% (Red) to Much Above Normal Flow >90% (Blue). The USGS National Water Dashboard is an interactive map which monitors Stream Gages and other water mapping layers to predict how much below normal to how much above normal flow conditions are for that particular day of the year. At least 10 years (10 data points) of data are needed for this evaluation.

USGS Streamflow Status Levels

USGS Streamflow Status Levels	Flow %
All Time High for this Day	100%
Much Above Normal	>90%
Above Normal	76%- 90%
Normal	25%- 75%
Below Normal	10%- 24%
Much Below Normal	<10%
All Time Low for this Day	0%

Locally, an upstream river gage gives warning of flood conditions in Warner. USGS Warner River Flood Stage at Davisville, the Dustin Road/NH 127 Bridge (USGS River Gage #01086000 NOAA #DAVN3) monitors the Warner River as measured in Warner, which can reach 12' (Major Flood Stage) or higher. The most recent highest crest occurred in July 2021 at 8.63', with several more storms reaching over 8.0' since 2019. The highest levels occurred during the 1938 Hurricane, reaching 12.8'. The Warner River converges into the Contoocook River. The Warner River gage flood stage information is shown in Table 4.9.

Table 4.9
River Gage Flood Stage Categories

Flood Stage Category	USGS Warner River at Davisville Flood Stage (River Gage #01086000 NOAA #DAVN3)	What Flood Stage Category Means
Major Flood Stage	12 Feet	Flooding has increased in spatial extent. Road closures more widespread, and feet of water may enter structures.
Moderate Flood Stage	10 Feet	Road closures more numerous. Water starts to enter homes and businesses.
Flood Stage	8 Feet	Flooding expands in spatial extent resulting in greater inundation of farmland and recreational areas. Few road closures possible.
Action Stage	6 Feet	Streams and river are out of their banks. Flooding confined to greenways, farmland, and isolated secondary roads.
Below Flood Stage	< 6 Feet	Normal stream and river levels up to bank full.



Gages that measure the height and volume of water along rivers are very helpful tools in understanding what level of flooding will become a concern. Flood stage measurements differ per river and these indicators help the community prepare for flood conditions. Some of the river gage data will be monitored by the National Weather Service.

Historical records of flood crests as displayed in **Table 4.10** enable perspective on how often the Warner River at Davisville floods. This is the site of a US Geological Survey monitored river gage, under the Dustin Road/NH 127 bridge.

Table 4.10
Flood Crests – Warner River at Davisville

Historic Crests		Recent Crests	
Feet	Date	Feet	Date
12.8	09/22/1938	8.63	7/30/2021
12.35	05/15/2006	8.62	12/24/2022
11.87	04/16/2007	8.58	04/02/2004
10.14	10/09/2005	8.45	12/19/2023
9.88	03/27/1953	8.38	07/17/2023
9.78	04/05/1960	8.37	03/31/2010
9.11	04/03/2005	8.08	08/29/2011

Source: NOAA National Water Prediction Service

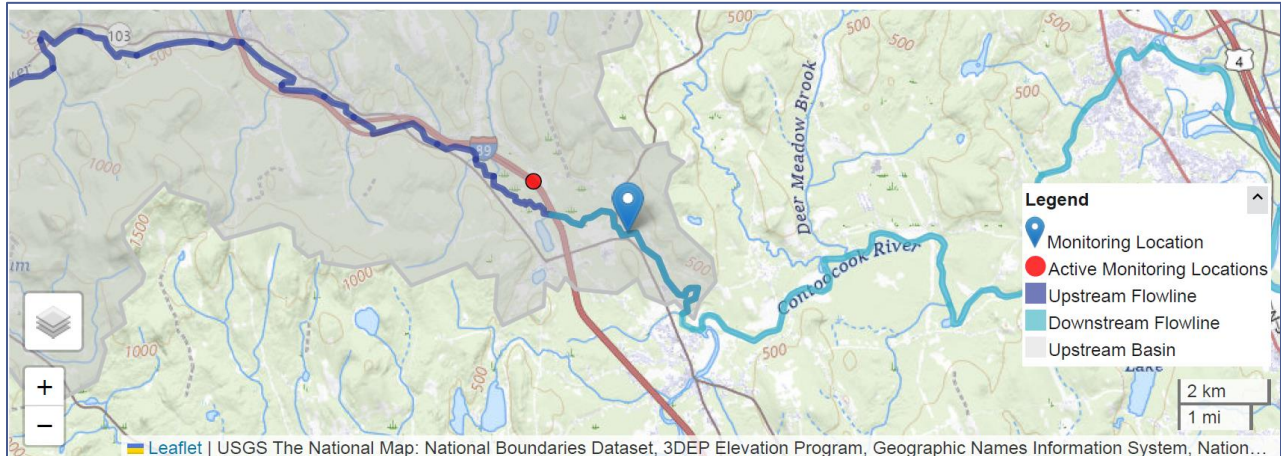
Reported flood impacts to **Warner River** locations as related to the **Flood Stages** are as follows:

- ➔ **13 Feet** - In Warner, Depot Street floods with water surrounding businesses. Chemical Lane flooded near the confluence with the Silver Brook, cutting off access to a dozen properties including those on Willey Lane. Wallaby Colby Lane flooded. In Hopkinton, homes along Deer Path, Well House, and Dustin Roads are at risk from high water especially if the Contoocook River is also at high flows.
- ➔ **12 Feet** - In Warner, areas that flood are West Roby District Road, West Joppa Road at Dalton covered bridge (2-3 feet), Waterloo Road covered bridge, Morse Lane, and the Tom Pond area experience flooding. Properties south of Depot Street are inundated with impacts to parking areas. Significant flooding to Riverside Park (3-4 feet).
- ➔ **10 Feet** - Low lying roads along the Warner River begin to have a flood threat. The most flood prone areas include West Joppa Road in Warner, cutting off access to the Dalton covered bridge. Riverside Park is flooded, and NH 114 in Bradford in flooded.
- ➔ **9.5 Feet** – Basement flooding of properties along Tom’s Pond in Warner begins.
- ➔ **8.5 Feet** – Properties along Tom’s Pond including Pine Lane in Warner are flooded with water overtopping retention walls.
- ➔ **8 Feet** – Riverside Road floods along with increasing depths over recreational fields (Bagley Field to 1.5 feet) in Warner.

- ➔ **6.5 Feet** – Although structures are not affected, water inundates recreational areas (Bagley Field) in Warner and Davisville. The river is at bankfull width in other reaches, some erosion may occur.

Figure 4.D

Warner River Gage Location USGS #01086000 NOAA #DAVN3



River Hazards Resource Links:

- US Army Corps of Engineers (ACOE)
<https://icejam.sec.usace.army.mil/ords/f?p=1001:7>
- National Water Dashboard (USGS Stream Gages, Groundwater Monitors)
<https://dashboard.waterdata.usgs.gov/app/nwd/en/?aoi=default>
- USGS Warner River at Davisville Hydrograph (River Gage #01086000, NOAA #DAVN3)
<https://water.noaa.gov/gauges/davn3>
<https://waterdata.usgs.gov/monitoring-location/01086000>
- USGS Fluvial Erosion Hazards (FEH) Primer
<https://geonarrative.usgs.gov/fehprimer>
- US Army Corps of Engineers (ACOE) New England Regulated River Basins
https://reservoircontrol.usace.army.mil/nae_ords/cwmsweb/cwms_web.cwmsweb.cwmsindex
- National Weather Service Gray Maine Northeast River Forecast Center
<https://www.weather.gov/nerfc/>
- Warner River Watershed Conservation Project
<https://warnerriverwatershedconservationproject.wordpress.com>
- NH Department of Transportation Municipal and Community Assistance Programs
<https://www.dot.nh.gov/doing-business-nhdot/municipalities-community-assistance>

Dam Failure

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Dam Failure	4.0	LOW	+0%	Low Hazard Class	Non-Menace to High Hazard Dam Class	NHDES Dam Hazard Classifications

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.

Warner has **2** Low Hazard dams in Town. The Town owns the Silver Lake Dam on **Silver Brook**, while Contoocook Village Precinct owns Bear Pond Dam on a Amey Brook tributary. Minimal damage could be expected if either of these dams were breached.

Although dam failure could be considered a **Technological Hazard**, failure 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.

NH Dam Hazard Classification	
HIGH Hazard Structure	Inspection
<p>H 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 from:</p> <ul style="list-style-type: none"> ○ Water levels and velocities causing structural failure of a foundation of a habitable residential, commercial, or industrial structure, which is occupied under normal conditions. ○ Water levels rising above the first floor elevation of a habitable residential, 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. 	Every 2 years
SIGNIFICANT Hazard Structure	Inspection
<p>S 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:</p> <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. 	Every 4 years

NH Dam Hazard Classification		
	<ul style="list-style-type: none"> ◆ The release of liquid industrial, agricultural, or commercial wastes, septage, sewage, or contaminated sediments if the storage capacity is 2 acre-feet or more. ◆ Damage to an environmentally sensitive site that does not meet the definition of reversible environmental losses. 	
LOW Hazard Structure		Inspection
L	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: <ul style="list-style-type: none"> ○ No possible loss of life. ○ Low economic loss to structures or property. ○ Structural damage to a town/city road or private road accessing property other than the dam owner's that could render the road impassable or interrupt public safety services. ○ The release of liquid industrial, agricultural, or commercial wastes, septage, or contaminated sediment if the storage capacity is less than 2 acre-feet and is located more than 250 feet from a water body or water course. ○ Reversible environmental losses to environmentally sensitive sites. 	Every 6 years
NON-MENACE Structure		Inspection
NM	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: <ul style="list-style-type: none"> ○ Less than 6 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. 	Every 6 years *

Dam Failure Hazards Resource Links:

- NH Department of Environmental Services (NHDES) DB-15: Classification of Dams in New Hampshire Fact Sheet 2020
<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/db-15.pdf>
- NHDES Dams Safety, Maintenance and Management
<https://www.des.nh.gov/water/dam-maintenance-and-management>
- Contoocook Village Precinct (Town of Hopkinton)
<https://www.hopkinton-nh.gov/contoocook-village-precinct-commissioners>

ATMOSPHERIC HAZARDS

The atmospheric hazards evaluated in the **Hazard Mitigation Plan** are:

Hazard Type	Main Hazard Category	Specific Hazards Included
Atmospheric	High Wind/Tropical/Storm	Thunderstorm, Downburst, High Wind, Tornado, Tropical and Post-Tropical Cyclone, Hail
	Lightning	Lightning
	Winter	Winter Storm, Blizzard, Ice Storm
	Extreme Temperature	Cold Wave, Heat Wave

High Wind

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
High Winds	6.7	MEDIUM	+25%	11 Storm Force 64 mph to 75 mph	0 Calm to 12 Hurricane Force Wind	Beaufort Wind Scale (Land)

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

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 like trees 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.

The Beaufort Wind Scale (Land) in **Table 4.11** as a form of wind magnitude measures the wind speed, description, and allocates a magnitude scale of 0 (Calm) -to 12 (Hurricane Force).

Table 4.11

Beaufort Wind Scale (Land Effects)

Beaufort Number	Description	Speed in mph	Visual Clues and Damage Effects
0	Calm	Calm	Calm wind. Smoke rises vertically with little if any drift.
1	Light Air	1 to 3	Direction of wind shown by smoke drift, not by wind vanes. Little if any movement with flags. Wind barely moves tree leaves.
2	Light Breeze	4 to 7	Wind felt on face. Leaves rustle and small twigs move. Ordinary wind vanes move.
3	Gentle Breeze	8 to 12	Leaves and small twigs in constant motion. Wind blows up dry leaves from the ground. Flags are extended out.
4	Moderate Breeze	13 to 18	Wind moves small branches. Wind raises dust and loose paper from the ground and drives them along.
5	Fresh Breeze	19 to 24	Large branches and small trees in leaf begin to sway. Crested wavelets form on inland lakes and large rivers.
6	Strong Breeze	25 to 31	Large branches in continuous motion. Whistling sounds heard in overhead or nearby power and telephone lines. Umbrellas used with difficulty.
7	Near Gale	32 to 38	Whole trees in motion. Inconvenience felt when walking against the wind.
8	Gale	39 to 46	Wind breaks twigs and small branches. Wind generally impedes walking.
9	Strong Gale	47 to 54	Structural damage occurs, such as chimney covers, roofing tiles blown off, and television antennas damaged. Ground is littered with many small twigs and broken branches.
10	Whole Gale	55 to 63	Considerable structural damage occurs, especially on roofs. Small trees may be blown over and uprooted.
11	Storm Force	64 to 75	Widespread damage occurs. Larger trees blown over and uprooted.
12	Hurricane Force	over 75	Severe and extensive damage. Roofs can be peeled off. Windows broken. Trees uprooted. RVs and small mobile homes overturned. Moving automobiles can be pushed off the roadways.

High winds can occur throughout Warner, but are more common at higher elevations and through valleys. Mount Kearsarge is vulnerable to tree fall with its hundreds of Warner homes.

High Wind Hazards Resource Links:

- National Weather Service Beaufort Wind Scale (on Land)
<https://www.weather.gov/pqr/wind>

Thunderstorm

The overall ratings of **Thunderstorm** in Warner from the **HIRA** are:

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Thunderstorm	5.3	MEDIUM	+25%	5 High Risk (Pink)	1 Marginal (Lt Green) to 5 High Thunderstorm Risk (Pink)	NOAA Severe Thunderstorm Risk Categories

More commonly experienced are **severe windstorms**, **rainstorms** and **thunderstorms**. The most severe windstorms occur during all months of the year while thunderstorms 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 and hail hazards, making these storms among the most dangerous, widespread, and numerous in New Hampshire. Tree limbs and utility lines can fall onto roadways, causing crash hazards and power and internet outages.

There are several types of thunderstorms:

- ➔ **Single-cell** – Ordinary, short, brief, weak storms that grow and die within an hour or so. They are typically driven by heat on a summer afternoon. Single-cell “popcorn” convection storms may produce brief heavy rain and lightning.
- ➔ **Multi-cell cluster** – Common, garden-variety thunderstorm in which new updrafts form along the leading edge of rain-cooled air (the gust front). Individual cells usually last 30 to 60 minutes, while the system as a whole may last for many hours. Multicell storms may produce hail, strong winds, brief tornadoes, and/or flooding.
- ➔ **Multi-cell line (squall line)** – Group of thunderstorms arranged in a line, often accompanied by squalls of high wind and heavy rain. Squall lines tend to pass quickly and are less prone to produce tornadoes than are supercells. They can extend laterally for hundreds of miles but are typically only 10 or 20 miles wide.
- ➔ **Supercell- single cell** - Thunderstorm lasting for hours, characterized by updrafts over 100 mph with giant hail and tornados, high precipitation and flash flooding.
- ➔ **Derecho (squall line)**- Long-lived, straight-line winds associated with a thunderstorms which blow out in front of the squall line, appearing from large, shelf-like cloud formation. Derechos can be as large as **200** miles wide in extent with gusts of at least **58** mph. They can last up to **12** hours or more and are associated with very strong straight-line winds. Derechos can knock over trees and power lines and cause rain and lightning to come from all directions.

Although a thunderstorm may comprise many variables, generally, a severe thunderstorm (Marginal 1-Slight 2 categories) produces winds of at least 58 mph, could produce hail at up 1" in diameter, and could produce localized tornadoes. These storms can be expected to occur several times per year in New

Hampshire. Structural damage to trees, roofing, and vehicles implies the occurrence of a significantly severe thunderstorm, with an annual to lifetime chance (Enhanced 3- High 5 categories).

Severe Thundstorm Outlook Categories

Understanding Severe Thunderstorm Outlook Categories						
LEVEL	CATEGORY	DETAILS	SUMMARY	How many severe storms are possible?	How bad could the worst storms be?	DEFINITIONS
	General Thunderstorm	Although severe weather is not expected, <i>all</i> thunderstorms can produce deadly lightning, gusty winds, and small hail.	No severe thunderstorms expected	None to Numerous	Similar to storms your area experiences many times per year	Severe Storm Any storm that contains at least one of the following:
1	Marginal (MRGL)	Some storms could be capable of damaging winds and severe hail. Localized tornado threat could develop.	Isolated severe storms possible	None to Numerous	Similar to storms your area may experience several times per year	Wind gusts of at least 58 mph
2	Slight (SLGT)	Increased confidence that some storms will contain damaging winds, severe hail, and/or tornado potential. <i>A few severe storms could be significant</i>	Isolated to scattered severe storms expected	None to Numerous	Similar to storms your area may experience a few times per year	Hail at least one inch in diameter Tornado
3	Enhanced (ENH)	High confidence that several storms will contain damaging winds, severe hail, and/or tornadoes. <i>Several severe storms could be significant</i>	Scattered to numerous severe storms expected	None to Numerous	Similar to intense storms your area may only experience once or twice per year	Significant Severe Any of the following hazards:
4	Moderate (MDT)	High confidence that many storms will contain damaging winds, severe hail, and/or tornadoes. <i>Several severe storms likely to be significant</i>	Scattered to numerous severe storms expected	None to Numerous	Similar to intense storms your area may only experience once per year or less	Wind gusts of at least 75 mph
5	High (HIGH)	High confidence that an outbreak of storms will contain tornadoes, damaging winds, and/or severe hail. <i>Tornado outbreak and/or widespread damaging winds</i>	Numerous severe storms expected	None to Numerous	Very intense storms your area may only experience once or twice in a lifetime	Hail at least two inches in diameter Tornado of at least EF-2 rating

Thunderstorm Hazards Resource Links:

- National Weather Service Thunderstorm Outlook Severity
https://www.spc.noaa.gov/new/images/SPC_outlook_final_updated.png
- NWS Storm Prediction Center
<https://www.spc.noaa.gov/classic.html>
- NOAA Jetstream Online Education Tool
<https://www.noaa.gov/jetstream>
- NOAA Types of Thunderstorms
<https://www.noaa.gov/jetstream/tstrmtypes>
- NOAA Derechos
<https://www.noaa.gov/jetstream/derechos>

Hail

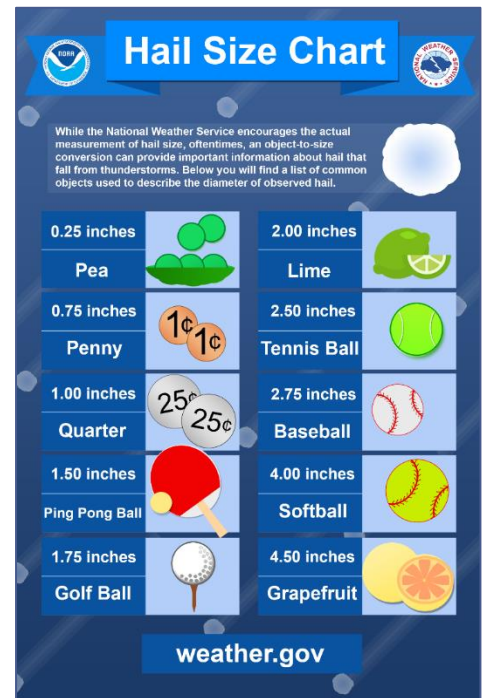
The overall ratings of Hail in Warner from the HIRA are:

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Hail	4.0	LOW	+25%	1.75" Golf Ball	1/4" Pea Size to 4.5" Grapefruit Size Hail Stones	NOAA Hail Size
				H4 Severe 25-40 mm	H0 5mm Hard Hail Storm to H10 >100mm Super Hail Storm	TORRO Hailstorm Intensity Scale Adapted

Thunderstorms include hail, hard balls of frozen water ranging from under pea-sized to softball-sized which rain down onto trees, roof, vehicles and roads. Often hail is damaging to vehicles and landscaping.

According to NOAA, hailstones are formed when raindrops are carried upward by thunderstorm updrafts into extremely cold areas of the atmosphere and freeze. Hailstones then grow by colliding with liquid water drops that freeze onto the hailstone’s surface. The hail falls when the thunderstorm’s updraft can no longer support the weight of the hailstone. Smaller hailstones can be blown away from the updraft by horizontal winds, so larger hail typically falls closer to the updraft than smaller hail. If the winds near the surface are strong enough, hail can fall at an angle or even nearly sideways. Wind-driven hail can tear up siding on houses, break windows and blow into houses, break windows on and dent the roofs of cars, and cause severe injury and/or death to people and animals.

The NOAA Hail Size chart describes the size of hail. In the Central NH region, hail has been reported recently as larger than a quarter dollar (>1”). In Maine and New Hampshire, hail is fairly common during well-developed thunderstorms. Although most hail that reaches the ground in northern New England is an inch or less in diameter, occasionally hailstones over 2” n diameter will fall. Large hailstones can fall at speeds faster than 100 mph and can do considerable damage to cars, homes, and buildings, and can be a significant threat to people, as well.



The intensity of hail, or how large and damaging hail can become, can be depicted by the Tornado and Storm Research Organization’s (TORRO) Hailstorm Intensity Scale, developed by researchers in the United Kingdom. The TORRO ranges from the smallest value of H0 (<5 mm and causing no damage) to the largest

value of H10 (>100 mm and causing extensive structure damage and potential fatalities). The TORRO scale is displayed in Table 4.12.

Table 4.12
TORRO Hail Intensity Scale

Scale	Intensity Category	Typical hail Diameter (mm)	Size Object Comparison	Typical Damage Impacts
H0	Hard Hail	5	Pea	No damage
H1	Potentially Damaging	5-15	Mothball	Slight general damage to plants, crops
H2	Significant	10-20	Marble, grape	Significant damage to fruit, crops, vegetation
H3	Severe	20-30	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	Ping pong ball	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	Golf ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60	Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-75	Tennis ball	Severe roof damage, risk of serious injuries
H8	Destructive	60-90	Orange	Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100	Softball	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Hail Hazards Resource Links:

- NOAA Thunderstorm Infographics with Hail Size Chart
https://www.weather.gov/vef/Thunderstorm_Infographics
- National Weather Service Estimating Hail Size
<https://www.weather.gov/boi/hailsize>
- TORRO Hailstorm Intensity Scale
<https://www.torro.org.uk/research/hail/hscale>
- NOAA Severe Weather 101 Hail Basics
<https://www.nssl.noaa.gov/education/svrwx101/hail>

Tornado

The overall ratings of **Tornado** in Warner from the **HIRA** are:

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Tornado	6.7	MEDIUM	+25%	EF1 86-100 mph	EF0 65-85 mph to EF5 >200 mph	NOAA Enhanced Fujita Scale

Significantly high winds 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.

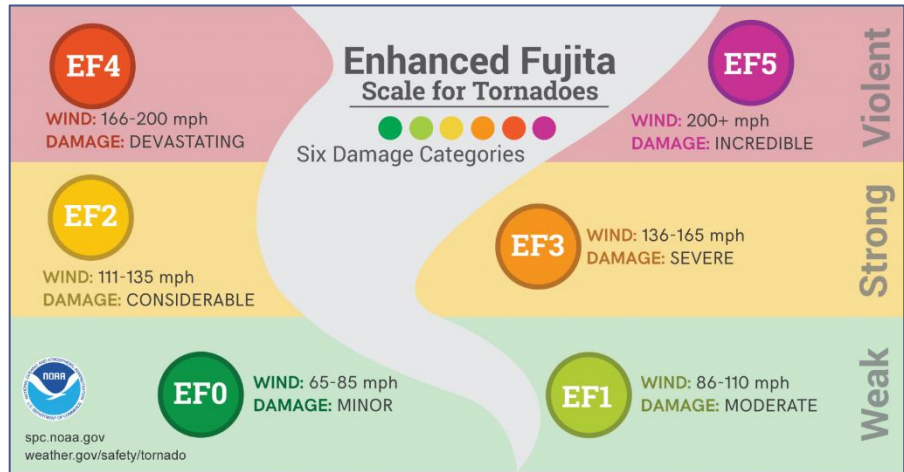
Tornadoes produce the most violent winds on earth, at speeds of **200** mph or more. In addition, tornadoes can travel at a forward speed of up to 70 mph. Damage paths can extend in excess of one-mile wide and **50** miles long. Violent winds and debris slamming into buildings cause the most structural damage.

A tornado occurring in Warner 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 (**111-135** mph). Tornado magnitude is measured by the Enhanced Fujita (EF) Scale and is displayed in **Table 4.13**.

Table 4.13
Enhanced Fujita (EF) Scale

EF Rating	3-Second Gust mph
EF0	65-85 mph
EF1	86-110 mph
EF2	111-135 mph
EF3	136-165 mph
EF4	166-200 mph
EF5	over 200 mph

Aside from the I-89/NH 103 corridor, most sections of the Warner are forested and its 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** and the potential for delayed emergency access until the way is cleared. Wooded and forested sections of Town are vulnerable to tree fall. One-egress roads, Kearsarge Mountain Road, and remote neighborhoods are especially at risk from the impacts of high wind events, including tornadoes.



Tornado Hazards Resource Links:

- National Weather Service Enhanced Fujita (EF) Scale
<https://www.weather.gov/oun/efscale>
- National Weather Service Tornado Infographics
https://www.weather.gov/wrn/tornado_infographics

Downburst

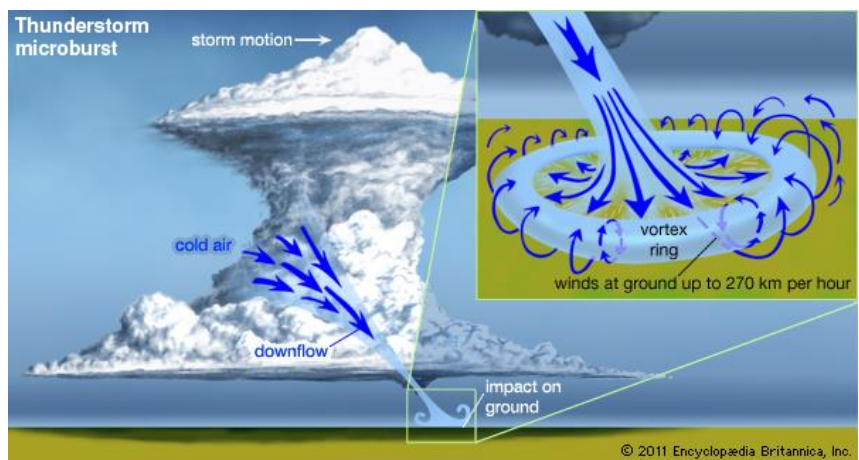
The overall ratings of **Downbursts** in Warner from the **HIRA** are:

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Downburst	5.3	MEDIUM	+25%	Microburst <2.5 miles	<2.5 miles wide Microburst to >2.5 miles wide Macroburst	NOAA Downbursts

Originating from a strong thunderstorm, an intense downburst called a microburst is a severe localized downdraft blowing over a horizontal area. When these downdrafts reach the ground, they spread out very quickly causing strong and often damaging winds at the ground. Downburst damage is often referred to as straight-line wind damage since fallen trees generally line up in the same direction. In Maine and New Hampshire, most thunderstorm wind damage is caused by downbursts. These "straight line" winds are distinguishable from tornadic activity by the pattern of destruction and debris. Downbursts can produce winds of up to **168** mph and are life threatening. Downbursts are quite common during Central NH’s hot weather months. The “dry” microbursts or macrobursts are strong downdrafts known to occur in Central New Hampshire almost annually, but the “wet” microbursts accompanied by rain are uncommon in the Northeast.

Downbursts 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.

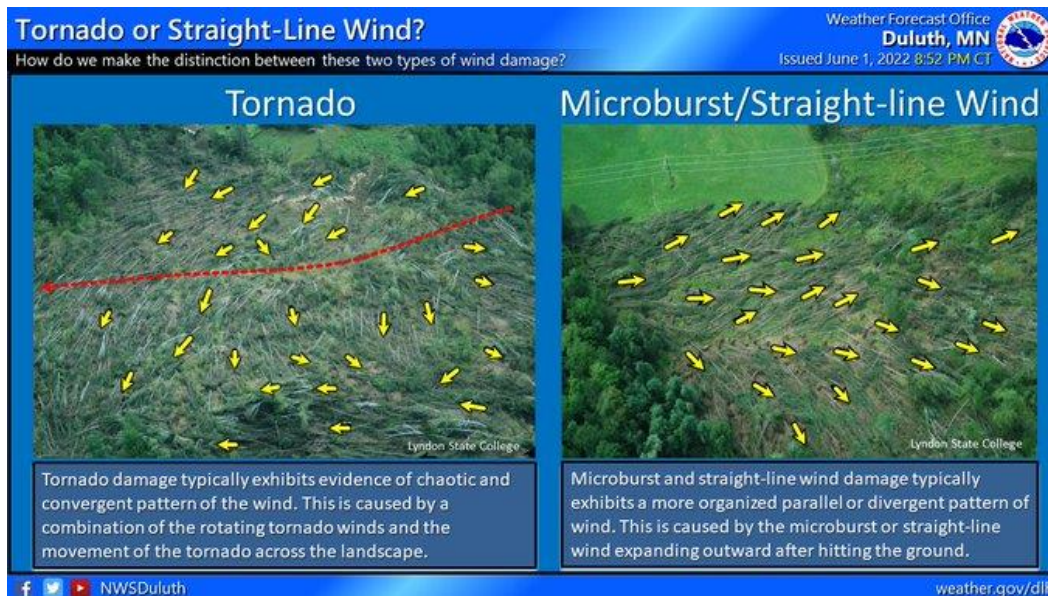
Microburst Forming from Thunderstorm Cloud



Two sizes of downbursts occur in New Hampshire and their magnitudes are categorized by extent as well as on the Enhanced Fujita Scale.

- A **microburst** is a small downburst with an outflow, defined as cooled air quickly moving outward from the storm, less than **2.5 miles (<4 km)** in horizontal diameter and lasting **2-5 minutes**. Despite their small size, microbursts can produce destructive winds up to **168 mph**, producing tornado-like damage up to an **EF-4** scale event. Microbursts get their name because they generally affect a much smaller geographical area, but the winds in a microburst can be very intense. Like the general downburst, most of the damage with microbursts lines up in one direction, although, there may be a tendency for the damage to radiate outward. Microbursts are usually accompanied by heavy rain and/or hail and can have winds as strong as those in a small tornado.
- A **macroburst** is larger than a microburst, with a horizontal extent greater than **2.5 miles (>4 km)** in diameter. A macroburst is not quite as strong as a microburst but can still produce winds as high as **130 mph**. Damaging winds generally last longer, from **5 to 20 minutes**, and produce tornado-like damage up to an **EF-3** scale event.

NWS Tornado Damage vs. Microburst Tree Damage Comparison



Downburst Hazards Resource Links:

- NOAA Thunderstorm Hazards – Macrobursts and Microbursts
https://www.noaa.gov/jetstream/wind_damage
- NWS Straight-Line Winds vs. Tornado Differences
https://www.weather.gov/iwx/2013_straight-line_winds_vs_tornado
- NOAA National Severe Storms Laboratory Damaging Winds
<https://www.nssl.noaa.gov/research/wind>

Tropical and Post-Tropical Cyclone

The overall ratings of **Tropical and Post Tropical Cyclone** in Warner from the **HIRA** are:

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Tropical and Post Tropical Cyclone	5.0	MEDIUM	+25%	Category 2 96-110 mph Extremely Dangerous	Category 1 74-95 mph Minimal to Category 5 >157 mph Catastrophic Winds	NOAA Saffir-Simpson Hurricane Wind Scale

Hurricane season officially 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 Warner during hurricanes. Numerous hurricane events in recent history have occurred in the State, region, and the local area surrounding Warner that may have also had an impact on the Town.

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 Warner 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.

Table 4.14

Saffir-Simpson Hurricane Wind Scale

Category	Sustained Wind Speed mph	Types of Damage Due to Hurricane Winds
--	< 38 mph	Tropical Depression
--	39-73 mph	Tropical Storm
1	74-95 mph	MINIMAL. Very dangerous winds will produce minimal 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	MODERATE. Extremely dangerous winds will cause moderate 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.

Category	Sustained Wind Speed mph	Types of Damage Due to Hurricane Winds
3	111-129 mph	EXTENSIVE. Extensive 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	130-156 mph	EXTREME. 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	157 mph or higher	CATASTROPHIC. 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.








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 4.14**.

Tropical Depression

An organized group of thunderstorms that persists for **24** hours is called a tropical disturbance. When winds exceed **30** mph, it becomes a tropical depression. The Earth's rotation (coriolis effect) drives wind around the warm core of the storm. For the storm to continue to strengthen, it must remain over warm water and encounter minimal wind shear. This is when vertical winds slant the storm, dispersing the heat over a larger area, degrading the storm. Without wind shear, the cyclone remains upright and continues to develop.

Tropical Storm

When winds reach **39** mph, the cyclone becomes a tropical storm and meteorologists give the storm system a name, alphabetically chosen from a pre-selected annual list for the Atlantic Ocean tropical storms. These lists are recycled every six years, but the names of deadly or costly storms are changed in future rotations. For instance, the **2023** Atlantic hurricane season, a strong El Nino year with record warm Atlantic

	Category	Wind Speed	Storm Surge	Damage
	Tropical Depression	0 - 38 mph	0 feet	
	Tropical Storm	39 - 73 mph	0 - 3 feet	
	Category 1 Hurricane	74 - 95 mph	4 - 5 feet	Minimal
	Category 2 Hurricane	96 - 110 mph	6 - 8 feet	Moderate
	Category 3 Hurricane	111 - 129 mph	9 - 12 feet	Extensive
	Category 4 Hurricane	130 - 156 mph	13 - 18 feet	Extreme
	Category 5 Hurricane	157 mph or higher	18 feet or higher	Catastrophic

sea surface temperatures, ranks **4th** for the most-named storms in a year: **20** named storms, which included seven hurricanes and three major hurricanes.

Tropical Storm or Post Tropical Storm Hazards Resource Links:

- NWS Saffir-Simpson Hurricane Winds Scale
<https://www.nssl.noaa.gov/research/wind>
- NOAA National Hurricane Center Tropical Storm Names
<https://www.nhc.noaa.gov/aboutnames.shtml>
- NWS Climate Prediction Center
<https://www.cpc.ncep.noaa.gov>
- National Weather Service Storm Surge Threat
<https://www.weather.gov/mhx/HTIStormSurge>
- NWS National Hurricane Center Hurricanes.gov
<https://www.nhc.noaa.gov>

Lightning

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Lightning	4.0	LOW	+25%	LAL 5 Numerous T-storms	LAL 1 No Thunderstorms to LAL 6 Dry Lightning Activity	NWS Lightning Activity Level (LAL)

The NOAA National Severe Storms Laboratory defines lightning as a giant spark of electricity in the atmosphere between the clouds, the air, or the ground. In the early stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges build up enough, this insulating capacity of the air diminishes, forming a rapid discharge of electricity (lightning). The flash of lightning temporarily equalizes the charged regions in the atmosphere until the opposite charges build up again.

All thunderstorms contain lightning, but not all lightning is caused by thunderstorms. Lightning can also be seen during volcanic eruptions, surface nuclear detonations, and heavy snowstorms. 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.” Lightning can strike where it is not raining, or even before rain reaches the ground.

There are four main types of lightning:

- ➔ **Cloud-to-ground (CG)** strike is the most common type of lightning, reaching toward the surface.
- ➔ **Cloud flashes like intra-cloud (IC) or sheet lightning** occur either in the same cloud or from cloud-to-air (CA) and do not reach the ground.
- ➔ **Cloud-to-cloud (CC)** or spider lightning travel among and illuminate multiple clouds.
- ➔ **Transient luminous events (TLE)** are rarely observed from the ground and occur in the high atmosphere above the storms.

Where the CG lightning will strike downward, a channel current of **1-2** inches develops toward the earth’s surface. As lightning nears the ground, objects like trees, telephone poles, and buildings start sending up static electricity sparks to meet this channel. Taller objects such as trees and historic buildings with cupolas, or hills are more likely than the surrounding ground to produce one of the connecting sparks and so are more likely to be struck by lightning. Yet lightning can strike the ground in an open field even if the tree line is nearby. The National Weather Service provides information about lightning safety.

The magnitude of 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 NWS Lightning Activity Level (LAL) measures the magnitude of lightning strikes as displayed in Table 4.15.

Table 4.15
Lightning Activity Level (LAL)

Level 1-6	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

Not only are the higher elevations in Warner vulnerable, its telecommunications towers and Mount Kearsarge, Downtown utilities are regularly struck by lightning.

Lightning Hazards Resource Links:

- National Weather Service Lightning Activity Level
<https://graphical.weather.gov/definitions/defineLAL.html>
- National Weather Service Lightning Safety Tips and Resources
<https://www.weather.gov/safety/lightning>
- National Oceanic & Atmospheric Administration (NOAA) Severe Storms Laboratory
Lightning Basics Education
<https://www.nssl.noaa.gov/education/svrwx101/lightning>

Winter Storms

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Winter Storms	8.0	HIGH	+0%	3 Major Snowfall	1 Notable to 5 Extreme Snowfall	Northeast Snowfall Impact Scale (NESIS)
				Moderate Impacts (Orange)	No Impacts to Extreme Winter Impacts	NWS Winter Storm Severity Index (WSSI)

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 **¼"** 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, blizzard conditions often 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.

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 Warner 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.

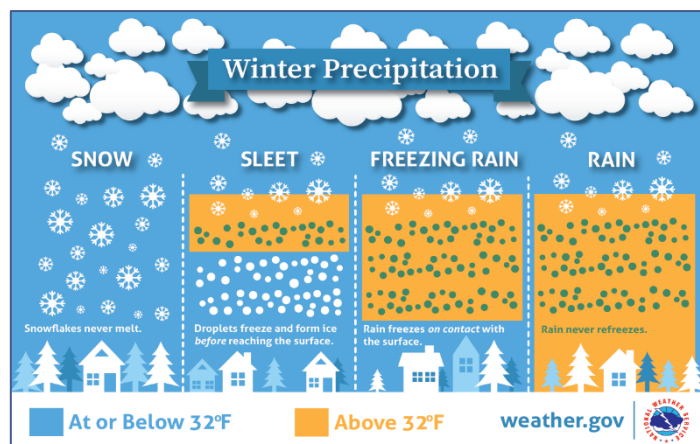
Extreme cold temperatures are associated with continental Arctic air masses. The actual temperatures reached depend specifically on the nature of the cold air mass and where it originated. In general, those from the Arctic regions are the coldest. Though cold temperatures are dangerous, they become more 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.

Heavy snow can immobilize a region, strand commuters, stop the flow of supplies, and disrupt emergency responders. Accumulations of snow can knock down trees and power lines and cause some roofs to collapse. Homes and farms may be isolated for days and unprotected livestock may be lost while businesses either close or are open with reduced hours. The cost of snow removal, repairing damages, and the loss of business can have severe economic impacts on New Hampshire communities.

Winter precipitation includes the following types of weather described and is summarized below:

- ➔ **Blizzard:** Winds of 35 mph or more with snow and blowing snow reducing visibility to less than ¼ mile for 3 hours or more.
- ➔ **Blowing Snow:** Wind-driven snow that reduces visibility. Blowing snow may be falling snow and/or snow on the ground picked up by the wind.
- ➔ **Snow Squalls:** Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant.
- ➔ **Snow Showers:** Snow falling at varying intensities for brief periods of time. Some accumulation is possible.
- ➔ **Snow Flurries:** Light snow falling for short durations with little or no accumulation.
- ➔ **Freezing Rain:** Occurs when the layer of freezing air is so thin, raindrops do not have enough time to freeze before reaching the ground.
- ➔ **Sleet:** Frozen raindrops occurs when the layer of cold, freezing air along the surface is thicker than the warmer air above. This causes the raindrops to freeze before reaching the ground.
- ➔ **Ice Storm:** Results in the accumulation of at least 0.25" of ice on exposed surfaces. Creates hazardous driving and walking conditions, and tree branches and powerlines can easily snap under the weight of the ice.
- ➔ **Lake Effect Storm:** Cold, dry air mass moves over the Great Lakes regions, picking up moisture from the Great Lakes. This air, now full of water, dumps the water as snow in areas to the south and east of the Lakes.



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.

Winter Storm Severity Index (WSSI)

Potential Winter Storm Impacts	
0	No Impacts Impacts not expected.
1	Limited Impacts Rarely a direct threat to life and property. Typically results in little inconveniences.
2	Minor Impacts Rarely a direct threat to life and property. Typically results in an inconvenience to daily life.
3	Moderate Impacts Often threatening to life and property, some damage unavoidable. Typically results in disruptions to daily life.
4	Major Impacts Extensive property damage likely, life saving actions needed. Will likely result in major disruptions to daily life.
5	Extreme Impacts Extensive and widespread severe property damage, life saving actions will be needed. Results in extreme disruptions to daily life.

Severe winter weather magnitude can be measured using several different scales and indices including the Winter Storm Severity Index (WSSI), the NCDRC Regional Snowfall Index (RSI) for the Northeast and forecasted weather advisories.

The NOAA Weather Prediction Center uses a Winter Storm Severity Index (WSSI), a 1-5 color-coded indices from 0- No Impacts to 5- Extreme Impacts which is used on the winter maps to predict storms **1-3** days out. The WSSI does not depict official warnings of an event.

The Northeast Snowfall Impact Scale (NESIS), upon which was built the national Regional Snowfall Index (RSI) is used to categorize significant snowstorms for the eastern seaboard. The NESIS/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 after the fact. The NESIS differs from these other indices because it includes population, a social component.

The NESIS is based on the spatial extent of the storm, the amount of snowfall, and the juxtaposition of these elements with population. The indices in **Table 4.16** measure the magnitude of a snowstorm in the Northeast, which includes New Hampshire.

Table 4.16
Regional Snowfall Index (RSI) for the Northeast (NESIS)

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

Several types of public alert warnings are issued for people to have a chance to prepare and respond accordingly to the winter weather threat. Winter warnings are the most serious alert and represent different types of storms forecasted as displayed in **Table 4.17**.

Winter Alerts	
<p>✳ Winter Watch BE PREPARED</p>	<p>Issued in the 24 to 72 hour forecast timeframe when the risk of a hazardous winter weather event has increased (50 to 80% certainty). It is intended to provide enough lead time so people can prepare.</p>
<p>✳ Winter Advisory BE AWARE</p>	<p>Advisories are issued when a hazardous winter weather event is occurring, is imminent, or has a very high probability of occurrence (generally greater than 80%). An advisory is for less serious conditions that cause significant inconvenience and, if caution is not exercised, could lead to situations that may threaten life and/or property.</p>
<p>✳ Winter Warning TAKE ACTION</p>	<p>Warnings are issued when a hazardous winter weather event is occurring, is imminent, or has a very high probability of occurrence (generally greater than 80%). A warning is used for conditions posing a threat to life or property within the next 12-36 hours.</p>

Table 4.17
Winter Weather Warning Events

Warning Type	Criteria	Description for Next 12-36 Hours
Blizzard Warning	Gusts >= 35 mph, visibility <1/4 mile	Blizzard event is imminent or expected in the next 12 to 36 hours. Sustained wind or frequent gusts greater than or equal to 35 mph will accompany falling and/or blowing snow to frequently reduce visibility to less than 1/4 mile for three or more hours.
Ice Storm Warning	½" ice over 50% of area	An ice storm event is expected to meet or exceed local ice storm warning criteria in the next 12 to 36 hours. Criteria for ice is 1/2 inch or more over at least 50 percent of the zone or encompassing most of the population.
Winter Storm Warning	7" snow in 12 hrs, or 9+" snow in 24 hrs over 50% of area	A winter storm event (heavy sleet, heavy snow, ice storm, heavy snow and blowing snow or a combination of events) is expected to meet or exceed local winter storm warning criteria in the next 12 to 36 hours. Criteria for snow is 7 inches or more in 12 hours or less; or 9 inches or more in 24 hours covering at least 50 percent of the zone or encompassing most of the population. Use "mid-point" of snowfall range to trigger warning (i.e 5 to 8 inches of snow = warning). Criteria for ice is identical to Ice Storm Warning.
Lake Effect Snow Warning	7" snow in 12 hours, limited area	A lake effect snow event is expected to meet or exceed local lake effect snow warning criteria in the next 12 to 36 hours. Widespread or localized lake induced snow squalls or heavy snow showers which produce snowfall accumulation to 7 or more inches in 12 hours or less. Lake effect snow usually develops in narrow bands and impacts a limited area within a county or forecast zone. Use "mid-point" of snowfall range to trigger warning (i.e 5 to 8 inches of snow = warning).
Wind Chill Warning	Low temps to -25°F	Wind chill temperatures are expected to meet or exceed local wind chill warning criteria in the next 12 to 36 hours. Wind chill temperatures may reach or exceed -25°F.

Source: Weather.gov, compiled by CNHRPC 2021

Recent Severe Winter Weather in New Hampshire

The winter season is shifting to January – April, instead of the traditional November to February. The most recent winter seasons have resulted in a recurring snow-and-melt cycle. Winter snowstorms will drop **6"** or more of snow, then will melt within a week or two, or winters will result in little snowfall. These patterns have been more consistently occurring since **2019** in Central New Hampshire. Warmer weather winter storms have the potential to inflict more damage than many hurricanes because the high storm surge and high winds can last from **12 - 72** hours, while the duration of hurricanes ranges from **6 - 12** hours.

Winter Storms Hazards Resource Links:

- NWS Winter Storm Severity Index (WSSI)
<https://www.wpc.ncep.noaa.gov/wwd/wssi/wssi.php?id=HGX>
- NOAA Northeast Snowfall Impact Scale (NESIS)
<https://www.ncei.noaa.gov/access/monitoring/rsi/nesis>
- NOAA Regional Snowfall Index for US
<https://www.ncdc.noaa.gov/snow-and-ice/rsi>
- NWS Winter Weather Preparedness Week
https://www.weather.gov/bou/winter_wx_preparedness_week

Ice Storms

The overall ratings of **Ice Storms** in Warner from the **HIRA** are:

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Ice Storm	9.3	HIGH	+50%	4 Prolonged Damage, 5-10 days no electricity (Purple)	0 Damage to 5 Ice Damage	Sperry-Piltz Ice Accumulation Index

Sleet occurs when snowflakes only partially melt when they fall through a shallow layer of warm air. These slushy drops refreeze as they next fall through a deep layer of freezing air above the surface, and eventually reach the ground as frozen rain drops that bounce on impact.

Freezing rain occurs when snowflakes descend into a warmer layer of air and melt completely. When these liquid water drops fall through another thin layer of freezing air just above the surface, they don't have enough time to refreeze before reaching the ground. Because they are "supercooled," they instantly refreeze upon contact with anything that that is at or below 0 degrees C, creating a glaze of ice on the ground, trees, power lines, or other objects. A significant accumulation of freezing rain lasting several hours or more is called an ice storm.

Accumulation of ice on roads, trees, and utility lines are dangerous for travelers until the roads are cleared and the utility lines are repaired. Ice storms occur in New Hampshire, especially when warmer winter temperatures mix with precipitation. **Table 4.18** displays the ice damage index.

Table 4.18
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.
	0.25 to 0.50	25 - 35	
	0.50 to 0.75	15 - 25	

Ice Damage Index	Average NWS Ice Amount in Inches	Wind Speed mph	Ice Damage and Impact Descriptions
	0.75 to 1.00	< 15	Outages lasting 1-5 days. Warming sites needed.
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 copyright 2009 (adapted by CNHRPC)

Ice Storm Hazards Resource Links:

- NWS Ice Storms
<https://www.weather.gov/safety/winter-ice-frost>
- NOAA National Severe Storms Laboratory – Severe Winter Weather 101
<https://www.nssl.noaa.gov/education/svrwx101/winter/types>
- Sperry-Piltz Ice Accumulation Index
<https://www.spia-index.com/index.php>

Extreme Heat (Heat Wave)

The overall ratings of **Extreme Heat or Heat Wave** in Warner from the **HIRA** are:

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Heat Wave	5.3	MEDIUM	+25%	Orange (Dark Danger)	Likelihood of Heat Disorders, Caution (Yellow) - Extreme Danger (Red)	NOAA Heat Index

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°F** or warmer. An official **Heat Wave** is defined as three or more consecutive days with the temperature reaching or exceeding **90°F**. In **July 2024**, Concord registered **12** consecutive days over **90°F**, breaking its previous record of **9** consecutive days in **2002**. Rochester New Hampshire recorded **15** consecutive days in **July 2024**.

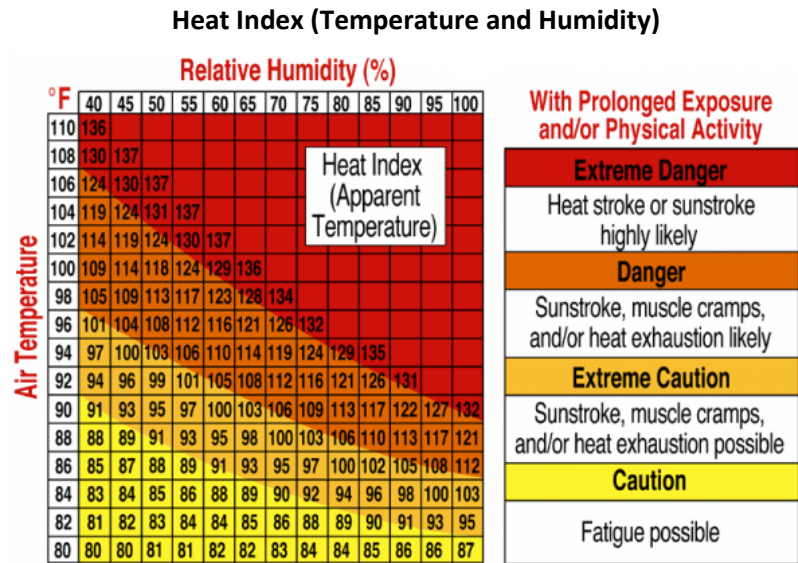
Extreme heat weather is forecasted with the following levels of high temperatures. **Excessive Heat Outlooks** are issued when the potential exists for an excessive heat event in the next **3-7** days. An outlook provides information to those who need considerable lead-time to prepare for the event.

Excessive Heat Alerts	
<p>Excessive Heat Outlook</p> <p>BE AWARE</p>	<p>The 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>
<p>Excessive Heat Watch</p> <p>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</p> <p>TAKE ACTION</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°F or higher for at least 2 days and nighttime air temperatures will not drop below 75°F; 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</p> <p>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°F or higher for at least 2 days, and nighttime air temperatures will not drop below 75°F; 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>

Excessive heat is measured by the NOAA’s Heat Index and 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 the Heat Index.

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**. Strong winds, particularly with very hot, dry air, can be extremely hazardous due to dehydrating effects.



Extreme Heat Hazards Resource Links:

- National Integrated Heat Health Information System (Data & Mapper)
<https://www.heat.gov>
- US EPA Climate Change Indicators: Heat Waves
<https://www.epa.gov/climate-indicators/climate-change-indicators-heat-waves>
- NOAA Jet Stream-Heat Index
<https://www.noaa.gov/jetstream/synoptic/heat-index>
- NWS Heat Watches and Warnings
<https://www.weather.gov/safety/heat-ww>

Extreme Cold (Cold Wave)

The overall ratings of **Extreme Cold or Cold Wave** in Warner from the **HIRA** are:

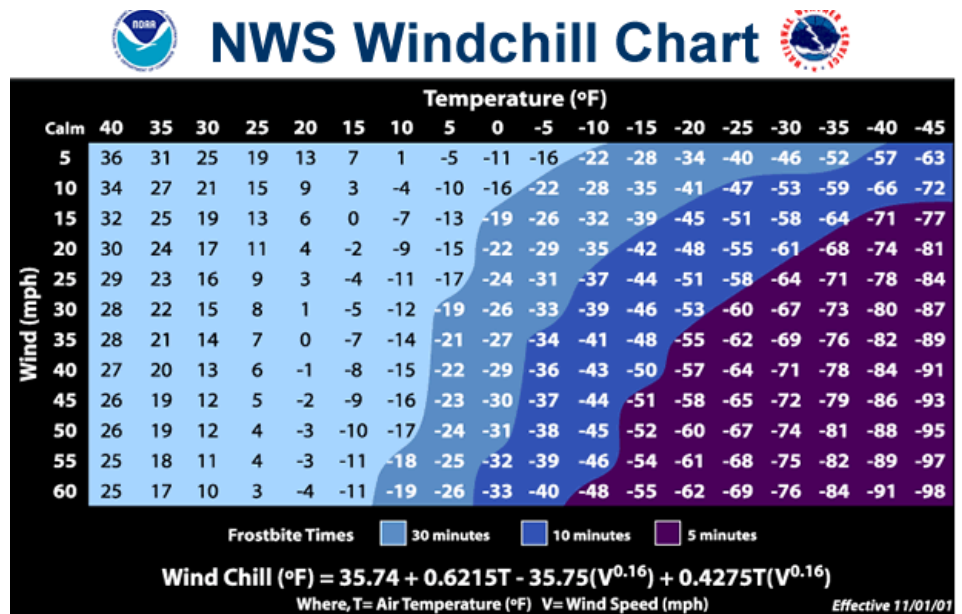
Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Cold Wave	6.7	MEDIUM	+25%	<= 10 minutes (Dark Blue)	<5 minutes to > 2 hours for Frostbite Times	NOAA Wind Chill Temperature Index

A **cold wave** is a rapid fall in temperature within **24** hours and extreme low temperatures for an extended period. The temperatures classified as a cold wave are dependent on the location and defined by the local National Weather Service (NWS) weather forecast office.

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.

Extreme cold magnitude can be measured for **windchill** using the **NWS Windchill Temperature (WCT) Index**, 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.

Windchill Temperature & Wind Index



To determine the wind chill temperature, find the value closest to outside air temperature and the value that most closely represents present wind speed. Wind chill temperature is the value where lines drawn from the air temperature and wind cross. The colder and windier, the faster frostbite and hypothermia will occur.

Cold weather warnings incrementally warn people of the dangers of **extreme cold**. The local National Weather Service provides watches, advisories, and warnings of wind chill.

Wind Chill Alerts	
⇒ Wind Chill Advisory BE AWARE	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 .
⇒ Wind Chill Watch BE PREPARED	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.
⇒ Wind Chill Warning TAKE ACTION	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 .

In addition to cold winds, the National Weather Service provides **extreme cold** guidance for several stages of weather alerts that are usually directed towards vegetation and crops. However, these freezing stages can also apply to watercourses, to animals kept outdoors or in barns, and to infrastructure such as bridges, dams, and roads (“black ice”).

Frost to Freeze Alerts	
* Frost Advisory BE AWARE	A Frost Advisory is issued when areas of frost are expected or occurring, posing a threat to sensitive vegetation. Frost develops on clear, calm nights and can occur when the air temperature is in the mid-30°Fs. Each plant species has a different tolerance to cold temperatures.
* Freeze Watch BE PREPARED	NWS issues a Freeze Watch when there is a potential for significant, widespread freezing temperatures (below 32°F) within the next 24-36 hours. A freeze watch is issued in the autumn until the end of the growing season and in the spring at the start of the growing season.
* Freeze Warning TAKE ACTION	When temperatures are forecasted to go below 32°F for a long period of time, NWS issues a Freeze Warning . This temperature threshold kills some types of commercial crops and residential plants.
* Hard Freeze Warning TAKE ACTION	NWS issues a Hard Freeze Warning when temperatures are expected to drop below 28°F for an extended period of time, killing most types of commercial crops and residential plants.

The **extreme cold** is difficult to define because what constitutes **extreme cold** varies in different parts of the country. Generally, in New Hampshire **extreme cold hazards** can arise through a combination of wind chill, below freezing cold temperatures, and winter storm events. In the Northeast, **extreme cold** means temperatures below zero (**-0°F**). Extended **extreme cold** durations are often referred to as cold snaps.

Although New Hampshire residents are used to frosts, freezes and vegetation protection, **extreme cold** may cause water pipes to freeze and burst in homes that are poorly insulated or without enough heat. The demand for additional heating fuel is necessary during **extreme cold** events, and often electricity failure is experienced during winter storms with **extreme cold**. Exposure to cold conditions can cause frostbite or hypothermia and become life-threatening. Infants, children, and elderly people are most susceptible. Most New Hampshire households are become used to winter storm events and use woodstoves, or propane or electric generators to keep homes warm during extreme cold when power failure occurs. Recommendations are to maintain at least **72** hours' worth of fuel, food, water, medical supplies, medications, and warm clothing in a storm emergency kit as well as to keep vehicles fueled. The most recent extreme cold event occurred in **February 2023**, where the lowest official all-time US record low was **-108°F** degrees wind chill at the summit of Mount Washington, while the air temperature was **-47°F**. New Hampshire communities suffered from low temperatures, utility outages, burst pipes, and more during this time.

Frostbite is damage to body tissue caused by **extreme cold**. A wind chill of **-20°F** will cause frostbite in just **30** minutes. Frostbite causes a loss of feeling and a white or pale appearance in extremities, such as fingers, toes, ear lobes or the tip of the nose. Additional exposure can turn the appendage purple, a dangerous condition. If symptoms are detected, get medical help immediately. If help must wait, slowly re-warm affected areas. However, if the person is also showing signs of hypothermia, warm the body core before the extremities.

Hypothermia is a potentially deadly condition when the body temperature drops to less than **95°F** through exposure to **extreme cold** or extended cold or water submersion. For those who survive, there are likely to be lasting kidney, liver and pancreas problems. Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness and apparent exhaustion. Take the person's temperature and if below **95°F**, seek medical care immediately. If help must wait, place the person into a lukewarm bath to warm the core gradually.

Extreme Cold Hazards Resource Links:

- NWS Windchill Chart
<https://www.weather.gov/bou/windchill>
- NWS Wind Chill Warning vs. Watch
<https://www.weather.gov/safety/cold-wind-chill-warning>
- FEMA Cold Wave Risk Index
<https://hazards.fema.gov/nri/cold-wave>

GEOLOGIC HAZARDS

Hazard Type	Main Hazard Category	Specific Hazards Included
Geologic	Earthquake/Landslide	Earthquake, Landslide

Earthquake

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Earthquake	1.0	LOW	0%	IV Light (Cyan)	I Not Felt to X Extreme Shaking Intensity	USGS Modified Mercalli Intensity Scale
				3.5 MM	<1.5 Magnitude to 8> Magnitude	KGS Earthquake Moment Magnitude (Size) Scale, formerly Richter Magnitude

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 possibly snow avalanches, which are not considered relevant to Warner's geography. 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 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.

Because the first-used Richter scale method could not account for large magnitude (size) earthquakes, a new logarithmic (base 10) Moment Magnitude (MM) Scale was developed to better measure earthquake magnitude. For each number going up on the scale, the ground motion recorded by a seismograph is increased by tenfold (10 times). The Moment Magnitude records the *energy* of an earthquake.

An earthquake's *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 4.18** 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 4.19

Modified Mercalli Intensity (MMI) and Earthquake Moment Magnitude (MM) Scales

Approx. Moment Magnitude (MM)	Modified Mercalli Intensity (MMI)	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 earthquakes not 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. Damage is slight.	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. Moment Magnitude (MM)	Modified Mercalli Intensity (MMI)	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	N/A	N/A	N/A	Total damage. Lines of sight and level are distorted. Objects thrown into air.	Waves seen on the ground

Source: compiled by CNHRPC, updated June 2023

Most earthquakes in the Central NH region are kilometers deep in bedrock and are of a <3 Magnitude. Little impact beyond noise and light shaking is observed or felt during these quakes.

Earthquake Hazards Resource Links:

- US Geological Survey Modified Mercalli Intensity Scale
<https://www.usgs.gov/media/images/modified-mercalli-intensity-scale>
- US Geological Survey Earthquake Magnitude, Energy Release, Shaking Intensity
<https://www.usgs.gov/programs/earthquake-hazards/earthquake-magnitude-energy-release-and-shaking-intensity>
- USGS ShakeMap Earthquake Instrumental Intensity
<https://earthquake.usgs.gov/data/shakemap>
- Moment Magnitude
<https://geokansas.ku.edu/measuring-earthquake-magnitude-and-intensity>

Landslide

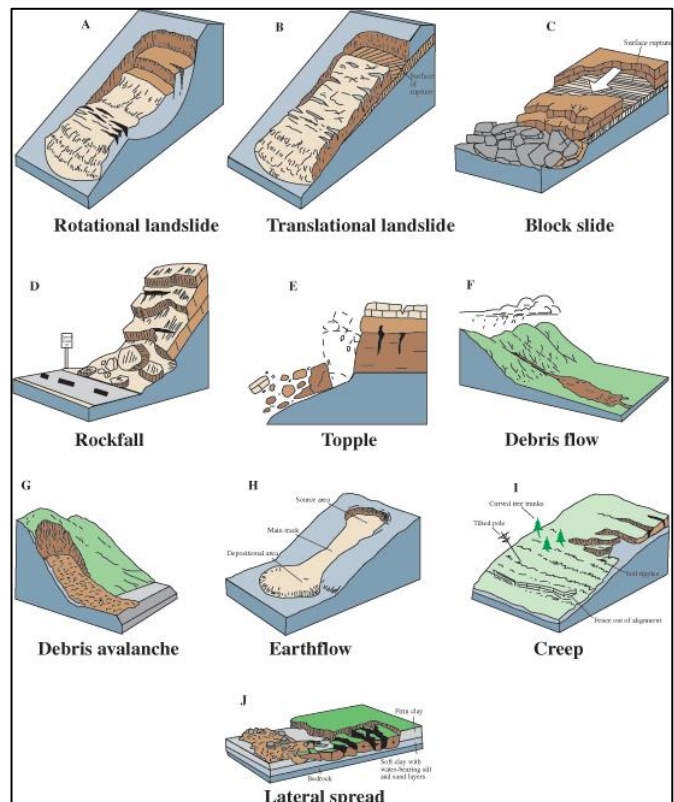
The overall ratings of **Landslide** in Warner from the **HIRA** are:

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Landslide	1.0	LOW	0%	Relatively Moderate Risk (Yellow)	Very Low Risk (Blue) to Very High Risk (Red)	No widely-used scale; FEMA National Risk Index Map

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 State roads or local Class V roads, electrical and telephone lines, buildings, sewers, bridges, dams, forests, parks, and farms and landslides are dangerous to people. Different types of landslides could occur depending on geography and conditions.

There is no known standardized measurement of landslide magnitude available. However, FEMA’s National Risk Index Map of natural hazards includes landslides, so the Hazard Mitigation Committee chose to use their rating (Relatively Moderate Risk) for Merrimack County.

USGS Basic Types of Landslides



Landslide Hazards Resource Links:

- FEMA National Risk index Map (Landslides) <https://hazards.fema.gov/nri/map>
- USGS Landslide Hazards Program <https://www.usgs.gov/programs/landslide-hazards>
- USGS The Landslide Handbook—A Guide to Understanding Landslides <https://pubs.usgs.gov/circ/1325>

BIOLOGIC HAZARDS

Hazard Type	Main Hazard Category	Specific Hazards Included
Biologic	Public Health/Biological	Swimming Water Quality, Air Quality, Drinking & Surface Water Quality, Infectious Diseases, Arboviral Diseases, Tickborne Diseases, Substance Misuse

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Public Health/Biologic	13.3	EXTREME	+50%			
Swimming Water Quality				E Coli Warning (Silver Lake), No Cyanobacteria	Bacteria Advisory to Bacteria Warning	NHDES Cyanobacteria/Public Beach Bacterial Warning Levels
Air Quality				Very Unhealthy (Purple)	Good (Green) to Hazardous (Maroon) Air Quality	NHDES Air Quality Index
Drinking & Surface Water Quality				Green (Water Precinct) - Good, Orange - Poor	Good Water Quality (Green) to Severe Water Quality (Red)	NHDES Watershed 305(b)Assessment Summary Reports by Watershed 2020-2022
Infectious Diseases				Very High (Red)	Minimal (White - Very High (Red)	NHDHHS Acute Respiratory Activity by County (weekly map)
Arboviral Diseases				Moderate Risk (Orange)	No Risk (Yellow) to Very High Risk (Red)	NHDHHS Arboviral Risk Map by Town (annual)
Tickborne Diseases				>500 cases per year	Rate Per 100,000 persons - Latest 2017-2021 (4 years) = 131 (Merr Cty), 101 (Hills Cty)	NH DHHS Reported Cases of Lyme Disease by County 2017-2021
Substance Misuse				1-25 EMS Drug Overdose/Abuse Incidents/ year	NH DHHS Drug Monitoring Initiative (Map) Monthly and YTD	NH DHHS Drug Monitoring Initiative

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 others could occur in Warner. The Town has swampy areas around the

Warner River, and wetlands and brooks are prime breeding ground for **mosquitoes**. Large deer herds that roam can carry **black-legged ticks** in the Town's heavily forested section, the Mink Hills, 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, runoff, haz mat spills) 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.

The NH DHHS maintains [NH Health WISDOM](#), a database portal 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 in the state at any given time.

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 Warner. The Town of Warner is an active member of the [Capital Area Public Health Network](#) and has a designated Point of Dispensing (POD) location at the Hopkinton High School in neighboring Hopkinton.

Biological Infestation

Depending on the type of biological invasive species, a different State department monitors and reports their appearance within New Hampshire.

Invasive Insect Pests

The [NH Department of Agriculture, Markets and Foods Division of Plant Industry's](#) mission is to promote and protect plant health by curtailing the spread of dangerous insects, diseases and weeds moved in commerce. A biological pest, the [Emerald Ash Borer](#), has consumed most of the Central NH Region's ash trees. Only a minority have not been infected. Active logging operations are asked to identify them. The [Hemlock Woolly Adelgid](#) and [Elongate Hemlock Scale](#) are infesting hemlock trees, and the [Red Pine Scale](#)

are infesting our local pine trees (hyperlinks lead to recent NH maps of known infestations). These forest problems have been increasing over the years in Merrimack County and surrounding areas. Beech leaf disease is a recent addition to Warne, note all insect infestations at www.nhbugs.org.

Invasive Land Plants

Invasive plants like need to be managed or removed. The [NH Department of Agriculture, Markets and Foods Division of Plant Industry](#) (NHDAMF) also regulates invasive upland plants: It is illegal in New Hampshire to collect, transport, sell, distribute, propagate or transplant any living or viable portion of any listed prohibited invasive plant species including all of their cultivars, varieties, and specified hybrids.

Invasive Aquatic Plants and Insects

The NHDES hosts an [invasive aquatic species program](#) and maintains a [statewide map of the invasive aquatic plant infestations](#) along with an accompanying [list of infested waterbodies](#). and invertebrate pest species and [NH Fish and Game](#) regulating invasive aquatic invertebrates. For public waters throughout the region, the NHDES Volunteer Rivers Assessment Program and NH Lakes Association can check help monitor [invasive water species](#).

Public Beach Monitoring

The NH Department of Environmental Services [Public Beach Inspection Program](#) regularly tests public beaches, both freshwater and saltwater, for the presence of bacteria, like cyanobacteria and e. coli, and dangerous species like jellyfish. Cyanobacteria advisories are issued when there are blooming conditions and cyanobacteria cell concentrations exceed **70,000** cells/ml in recreational waters. Freshwater beach standards for e. coli is 1 sample **> 158** counts/100 ml.

Milfoil infestation can occur on public ponds of 10 acres or greater. Rivers can carry invasive species like **zebra mussels**. Wetlands, ponds, and meadows are subject to such biological hazards, although none are being tested in Warner. The [NHDES OneStop](#) data resource center can be accessed to provide reports on potential water hazards.

Cyanobacteria

Blooms are dynamic. Cyanobacteria are natural components of water bodies worldwide, though blooms and surface scums may form when excess nutrients are available to the water. Some cyanobacteria produce toxins that are stored in the cells and released into the water when the cells die. Toxins can cause both acute and chronic health effects that vary in severity. Acute health effects include irritation of the skin and mucous membranes,



Cyanobacteria Bloom in Loudon, 2022

tingling, numbness, nausea, vomiting, seizures, and diarrhea. Chronic effects may include liver and central nervous system damage. Be cautious of lake water that has surface scum, changes colors, or appears to have green streaks or blue-green flecks aggregating along the shore.

If a person or animal is sick from a potential cyanobacteria exposure, please seek medical attention. Inform your physician or veterinarian that you or your pet may have been exposed to toxic cyanobacteria via recreation. With the presence of ponds, homes, and recreational activity on Tom Pond and Pleasant Pond, this combination may in the future create conditions sustainable for cyanobacteria.

The NHDES Public Beach Monitoring system tests for cyanobacterial conditions at certain known, specific swimming areas. The mapping system includes Warnings, Advisories, and Alerts for fecal bacteria and cyanobacteria at <https://www.arcgis.com/apps/dashboards/8d84a6b03acb4efaab571b222c78447b>. Silver Lake in Warner is monitored seasonally by NHDES under this program.

Public Beach Safety	
WARNING	CLOSED- Bacteria levels exceed recreational health threshold of 70,000 cells/ml (cyanobacteria)
ADVISORY	CLOSED – Continued weekly sampling and likely bacteria/toxin exposure
ALERT	POSSIBLE Bacterial Alert – stay wary
OK	NO Advisory or Advisory Removed

Swimming Warning (Advisory)

Advisories are lake-wide warnings issued when cyanobacteria cell counts exceed the recreational health threshold of **70,000** cells/mL. Surface blooms can rapidly change and accumulate in various locations around a waterbody. Please continue to monitor shorelines for changing conditions. NHDES advises lake users to avoid contact with the water in areas experiencing blooms. Pets and livestock should also be kept out of the water. Silver Lake, the local public swimming beach in Warner, could be subject to e. coli and other bacterium.

When an advisory is issued, resampling is performed weekly until the bloom subsides. Advisories are issued from May 15 through October 15. Advisories are not based on toxin evaluation but occur at cyanobacteria cell count densities when toxin production may be likely and are intended as a precautionary measure for short term exposure to cyanotoxins.

Swimming Alert

Alerts are issued 1) based on a photo before NHDES can analyze a sample; 2) when the cyanobacteria density is approaching the recreational health threshold but does not yet exceed it; or 3) if a bloom was reported but may have passed by the time a sample was reviewed but could reoccur. Alerts are intended to serve as statements to be on the watch for a potential cyanobacteria bloom. Waterbody users should avoid contact with bloom material and keep pets and livestock out of the water. Sometimes alerts become

advisories, and sometimes they pass. Alerts remain active for a week. Resampling only occurs if further bloom reports are submitted. Alerts are issued year-round as needed.

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 calculates Total Maximum Daily Load (TMDL) reports of pollutants for the state’s water every two years.

Surface Water Quality

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. Damage to infrastructure from natural hazards such as **Inland Flooding** and spring **snow melt** runoff can occur. Various publications describe the NHDES programs to create more resilient water systems.

Although there is no recognized, universal water quality index, state and federal testing is completed to ensure the quality of New Hampshire’s **surface waters**. NHDES completed recent Water Quality Assessments (Section 305(b) of the Clean Water Act) of the state’s rivers and brooks, covering all of Warner’s waters with a comprehensive report within each watershed. An assessment summary is provided for aquatic life, fish consumption, swimming, and boating.

Watershed 305(b) Water Quality Assessment Index	
Good (2-Good)	Meets water quality standards/thresholds by a relatively large margin.
Marginal (2-Marginal, 2-OBS)	Meets water quality standards/thresholds, but only marginally.
Likely Good (3-PAS)	Limited data available. However, the data available suggests the parameter is Potentially Attaining Standards (PAS).
No Current Data (3-ND)	Insufficient information to make an assessment decision.
Likely Bad (3-PNS)	Limited data available. However, the data available suggests the parameter is Potentially Not Supporting (PNS) water quality standards.
Poor (4A, 4B, 4C)	Not meeting water quality standards/thresholds. The impairment is marginal.
Severe (5-Poor)	Not meeting water quality standards/thresholds. The impairment is more severe and causes poor water quality.

Like most Central NH region towns, fish consumption from local waters in Warner is unadvisable. At the time of assessment, swimming at Silver Lake Beach was not recommended due to Poor swimming water quality. **Figure 4.E** displays an excerpt of the latest surface water assessment.

Figure 4.E
Warner Water Quality Assessment Excerpt 2020/2022



Assessment Unit ID	Map Label	Assessment Unit Name	Aquatic Life	Fish Consump.	Swimming	Boating
NHIMP700030304-01	I*01	Warner River		4A-M	3-ND	3-ND
NHIMP700030304-02	I*02	Schoodac Brook - Knight Meadow Pond Dam	3-ND	4A-M	3-ND	3-ND
NHIMP700030304-04	I*04	Unnamed Brook - Bower Stock Pond Dam	3-ND	4A-M	3-ND	3-ND
NHIMP700030304-04-01	I*04-01	Silver Brook - Silver Lake Upper Pond	3-ND	4A-M	3-ND	3-ND
NHIMP700030304-04-02	I*04-02	Silver Brook - Silver Lake Reservoir Beach	3-ND	4A-M	4A-P	2-G
NHIMP700030304-05	I*05	Silver Brook	3-ND	4A-M	3-ND	3-ND
NHIMP700030304-06	I*06	Barclay Brook - Farm Pond	3-ND	4A-M	3-ND	3-ND
NHIMP700030304-07	I*07	Unnamed Brook - Recreation Pond	3-ND	4A-M	3-ND	3-ND
NHLAK700030304-02	L*02	Bagley Pond	3-ND	4A-M	3-ND	3-ND
NHLAK700030304-03	L*03	Pleasant Pond	3-ND	4A-M	3-ND	3-ND
NHLAK700030304-05	L*05	Tom Pond	4A-M	4A-M	4A-M	2-G
NHLAK700030304-06	L*06	Trumbull Pond	3-ND	4A-M	3-ND	3-ND

Drinking Water Quality

Drinking water quality is a separate issue from surface water and is testing handled differently. According to the NHDES Drinking Water and Groundwater Bureau, naturally occurring contaminants are common in groundwater in New Hampshire. About half of the state’s bedrock wells have radon at levels of concern and an estimated **30%** have arsenic at levels that exceed the **5** ppb limit that is enforceable in public water systems. Iron and manganese are also quite common at levels that taste bad or cause staining of laundry or fixtures. Manganese may also occur at potentially unsafe levels. Fluoride, beryllium, and radionuclides other than radon are less common but do occur naturally at levels of concern for human consumption throughout the state. Dug wells are less likely to have problems with minerals (arsenic, radon, etc.) but are more likely to have issues with bacteria low pH, road salt and nitrate. New, rising contaminants like Per- and Polyfluorinated Substances (PFAS) are being discovered in water supplies.



Most Warner residents use private drilled wells for their water consumption, although residents of the Main Street area are customers of the Warner Village Water District. For

privately owned wells, any testing is completed, or mitigation installed, at the desire and expense of the property owner.

The Warner Village Water District <https://warnernh.gov/departments/wvwd/> undertakes appropriate testing and reporting requirements and mitigation measures. Those who obtain drinking water from public water systems have a regular testing schedule for contaminants, with an annual report available to customers. NHDES may require a water system to implement a drinking water advisory to protect public health. Such advisories may be issued after detection of E. coli bacteria, a nitrate or nitrite exceedance, a lapse in system integrity, failure of a treatment process, or suspicion of other water-borne pathogens. Drinking water advisories are posted on the NH DES website and customers are notified locally.

Air Quality

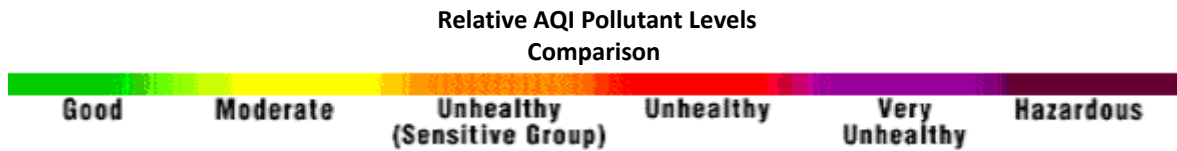
Air quality is a particular danger to the young, elderly people, and those with Chronic Obstructive Pulmonary Diseases (COPD), asthma and other breathing diseases. Ground level ozone and particle pollution are monitored, reported and forecasted for New Hampshire counties. The [Map of Current Air Quality](#) 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. Regional transportation corridors 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’s air is also impacted by industries and wildfires across the United States and Canada. Greenhouse gases from industrial pollution and manufacturing contributes to poor **air quality**.

The US EPA places these categories into an Ozone and Particulate Pollution table that provides a particulate value of indices to use for magnitude:

Table 4.20
EPA Air Quality Index (AQI) Basics for Ozone and Particle Pollution

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.



Infectious Diseases

The *2023 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 (CDC) and included measures New Hampshire has been practicing for COVID-19, including masking, social distancing, staying at home, and quarantine. However, the levels have been archived by the CDC and are no longer actively published.

The magnitude and severity of infectious and/or respiratory diseases are described by 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 diseases relates to the disease occurrence:

Infectious Disease Spread	
§ 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.

The NH Department of Health and Human Services Infectious Disease Control provides information about all types of illnesses spread by community transmission. These illnesses include, but are not limited to flu, sexually transmitted infections, illnesses someone has gotten while in a hospital or other healthcare setting, hepatitis, tuberculosis, Legionnaires disease or HIV, rabies, and Lyme disease.

Coronavirus (Respiratory Infectious)

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 disease 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.

During **March 2020-May 2023** when COVID-19 was extremely active and contagious, the NH Department of Health and Human Services maintained a [COVID-19 dashboard website](#) with current information, statistics, legislation, and testing locations, and resources. Community practices such as social distancing (staying at least **6** feet away from people outside of one's household), wearing cloth or medical facial masks, sanitizing hands, monitoring for symptom, working from home, remote schooling, and staying at home when possible are the ways to fight the COVID-19. Vaccinations and boosters were necessary and are now an annual (endemic) necessity. Even four years after the pandemic, people throughout the New Hampshire and United States recall feeling stifled and restricted and despite the new variants and the endemic nature of COVID-19, often disregard the community protection practices. With home testing and self-isolation, it is not possible to track new cases unless hospitalization occurs.

Johns Hopkins Coronavirus Resource Center reports in New Hampshire a total of **378,428** confirmed cases and **3,003** deaths from COVID-19, with nearly **73%** of the state's population fully vaccinated. Johns Hopkins stopped collecting data as of **March 10, 2023**, resulting in three years of global data. These figures correlate with data formerly posted by the NH DHHS.

Through March 10, 2023, Johns Hopkins reports nearly **104 million** positive cases in our country and over **1.1 million** people have died in the United States alone from COVID-19 complications. Globally, nearly **677 million** people tested positive and nearly **6.9 million people** died during this time.

Since **March 2, 2020**, a total of **793** cases had officially tested positive in Warner through **May 2023**. But with time and home testing, the actual figure will be much higher: the number of cases are sure to be under-reported and under-counted, especially as new variants arise and extend the endemic stage of the coronavirus.

Influenza (Respiratory Infectious)

Each week during the flu season, the NH DHHS undertakes Acute Respiratory Illness (ARI) Surveillance by county and produces a state-wide map indicating the levels of likely infection. Its color-codes indices are Minimal (white), Low (light green), Moderate (green), Elevated (orange), High (dark orange), and Very High (red).

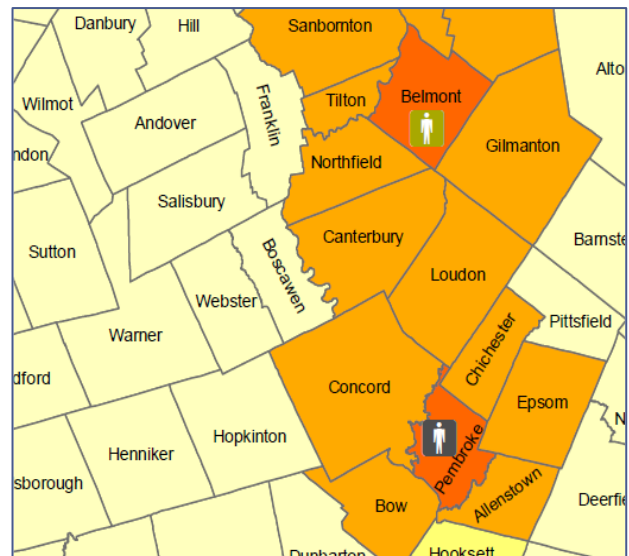
The COVID-19 pandemic made plans like the [State of New Hampshire Influenza Pandemic Public Health Preparedness and Response Plan 2007](#) obsolete and no longer available to the public. Few new public health plans have been developed and published for public access, although practices and procedures have arisen to meet the newest public health challenges after consulting with the Centers for Disease Control and Prevention (CDC). As a aging community, Warner may be particularly vulnerable to influenza-like respiratory illnesses.

Arboviral Transmission Diseases

Annually, the [NH DHHS publishes the State of New Hampshire Arboviral Illness Surveillance, Prevention, and Response Plan](#) and its associated [Arboviral Risk Map 2023](#). There are 44 species of mosquitos in New Hampshire, but only some species carry Eastern Equine Encephalitis Virus (EEEV), an alphavirus maintained in wild birds; West Nile Virus (WNV), a flavivirus also maintained in wild birds; or Jamestown Canyon Virus (JCV), a bunyavirus maintained in deer. The mosquitos can then infect people, horses, and other animals. Human cases of arboviral transmitted diseases are uncommon but can be severe, resulting in neurologic conditions ranging to death.

New mosquito-borne illnesses are being identified in New Hampshire over time, with WNV in 2000, EEEV in 2004, and JCV in 2013. Testing and surveillance are also conducted for St. Louis Encephalitis (SLE) and Powassan Virus (POWV). Risk levels are Baseline (white), Low (yellow), Moderate (orange), High (dark orange), and Very High (red).

Arboviral Risk Map Excerpt 2023



Tickborne Transmission Diseases

With the transition to warmer weather, tickborne diseases are increasing in New Hampshire. These five are Lyme Disease, Anaplasmosis, Babesiosis, Powassan Virus, and Borrelia miyanotoi. In New Hampshire, these diseases are all transmitted by the bite of the black legged tick, formerly known as the deer tick. Other tickborne diseases such as ehrlichiosis, tularemia and Rocky Mountain Spotted Fever can be caught when traveling to other parts of the country, including other New England states.

The State posts factsheets and other resources such as the [State of NH Tickborne Disease Prevention Plan 2015](#) to raise awareness and educate people how to avoid tick bites and when to seek medical attention. [Tick Free NH](#) is another popular educational resource site.

In **2019**, the NH DHHS ceased tracking Lyme disease and other tickborne diseases for the public by Town (county data is available to 2021). In **2022**, Merrimack County in which Warner is situated had a reported Lyme disease case number of **107** infected people that year, per the CDC. Since that time, no specific increase in Lyme Disease or tickborne diseases in Warner residents has been officially noted with no publicly available data to support conclusions.

Substance Misuse

New Hampshire has seen a rise in the number of heroin and opioid deaths over the last few years. Even Warner has been subject to additional calls for service for overdose. Along with the use of these substances is a commensurate amount of buying and/or making of illegal drugs. The State has made national headlines since **2014** for its problems with overdoses and its public recognition of the problem, and the lack of State medical examiner staff overall to determine the cause of death of suspected overdose decedents.

By **2023**, overdose from opioids (up **6%**), meth (up **54%**), and cocaine (up **56%**) had increased in the state in comparison with previous years. Fentanyl was present in **324** of the **381** confirmed overdose deaths in **2023**. The New Hampshire Drug Monitoring Initiative (DMI) contains an online map and data viewer portraying the state's and counties' statistics for EMS suspected drug overdose or abuse incidents, EMS Narcan administration, opioid-related emergency department visits, drug overdose deaths, and other metrics by month and year. The data available to the public is aggregated by county, but health care personnel and emergency responders may have more specific figures available for communities. Hillsborough County had the highest number of overdose deaths at **3.4** deaths per **10,000** population; Merrimack County in which Warner is located had **2.02** overdose deaths per **10,000** people. In Warner in **2023**, between **1-5** people died from overdose, as confirmed by the State Medical Examiner's Office. For Merrimack County, the age group of **30-39** years old has the greatest number of drug overdose/abuse logs. Prescription drug take back boxes at local Police Departments and events that advertise their ability encourage the responsible disposal of drugs and medications.

The NH DHHS and the Capital Area Public Health Network should be notified of all public health infectious emergence threats.

Public Health Hazards Resource Links:

- NH Department of Environmental Services (NHDES) Healthy Swimming Mapper
<https://www.arcgis.com/apps/dashboards/8d84a6b03acb4efaab571b222c78447b>
- NHDES Health Advisories: Beach, Air Quality Action, Drinking Water (Data & Mapper)
<https://www.des.nh.gov/advisories>
- NHDES Water Quality Assessment Total Maximum Daily Load (TMDL)
<https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment>
- NHDES Water Quality Assessment Mapper and Report
<https://www.arcgis.com/apps/webappviewer/index.html?id=d1ba9c5ec85646538e032580e23174f7>

- NHDES Drinking Water Advisories
https://www4.des.state.nh.us/Advisories/Drinking_Water
- NHDES Drinking Water and Groundwater Bureau
<https://www.des.nh.gov/water/drinking-water>
- NH Department of Health and Human Services (NH DHHS) COVID-19 Dashboard
<https://www.nh.gov/covid19/index.htm>
- NH DHHS Mosquito-Born Illnesses Tracking and Information
<https://www.dhhs.nh.gov/programs-services/disease-prevention/infectious-disease-control/mosquito-borne-illnesses>
- NH DHHS Infectious Disease Control
<https://www.dhhs.nh.gov/programs-services/disease-prevention/infectious-disease-control>
- NH DHHS Drug Monitoring Initiative (DMI) Data Reports
<https://www.dhhs.nh.gov/programs-services/health-care/substance-misuse-data-page>
- NH DHHS WISDOM
<https://wisdom.dhhs.nh.gov/wisdom/#main>
- NH DHHS Tick-Born Illnesses Tracking and Information
<https://www.dhhs.nh.gov/programs-services/disease-prevention/infectious-disease-control/tickborne-diseases>
- Capital Area Public Health Network
<http://www.capitalareaphn.org>
- Centers for Disease Control (CDC) Travel Alert Levels for Outbreak and Disease
<https://wwwnc.cdc.gov/travel/notices>
- CDC Lyme Disease Reported Case Map by County
<https://www.cdc.gov/lyme/data-research/facts-stats/lyme-disease-case-map.html>
- US Environmental Protection Agency (US EPA) Air Quality Index
<https://www.airnow.gov/aqi/aqi-basics>
- Johns Hopkins Coronavirus Resource Center
<https://coronavirus.jhu.edu/region/us/new-hampshire>
- NH Bugs – Protecting Trees and Forests
<https://www.nhbugs.org>

HELIOSPHERIC HAZARDS

Hazard Type	Main Hazard Category	Specific Hazards Included
Heliospheric	Solar	Geomagnetic Storms, Solar Radiation, Radio Blackout

Solar storms and space weather 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.

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.

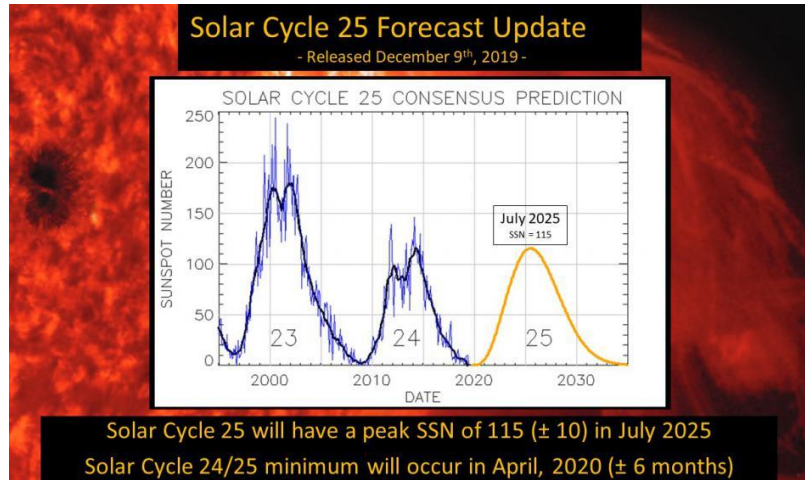
Solar Storms

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

Natural Hazard Event	HIRA Overall Risk 1-16	HAZARD CONCERN SUMMARY	Intensity Change % Next 10 Yrs	Highest Magnitude Next 10 Yrs	Scale Range	Scientific Scales Used
Solar Storms	12.0	EXTREME	+25%			
Geomagnetic Storms				G3 Strong	G1 Minor to G5 Extreme Geomagnetic Storm	NOAA Geomagnetic Storms Scale
Solar Ration				S3 Strong	S1 Minor to S5 Extreme Solar Radiation	NOAA Solar Radiation Storms Scale
Radio Blackout				R3 Strong	R1 Minor to R5 Extreme Radio Blackouts	NOAA Radio Blackouts Scale

The Sun's activity cycle, called the "solar cycle," takes approximately 11 years during which the Sun’s magnetic field flips and the Sun's north and south poles switch places. Then it takes about another 11 years for the Sun’s north and south poles to flip back again. The Sun is now in Solar Cycle 25 according to NASA, which began in December 2019 at the minimum end of Solar Cycle 24, which was considered a weak cycle.

For Solar Cycle 25, solar activity has been increasing fast, with more solar flares and sunspots than in Solar Cycle 24, beating initial expectations. The predicted solar maximum may occur earlier than the predicted July 2025. Yet, the cycle remains weaker than Solar Cycle 23. The solar cycle affects activity on the surface of the Sun, such as sunspots which are caused by the Sun's magnetic fields. As the magnetic fields change, so does the amount of activity on the Sun's surface. Giant eruptions on the sun, such as solar flares and coronal mass ejections, increase during the solar cycle. These eruptions send powerful bursts of energy and material into space. When the sun's magnetic poles flip, the effects ripple through the solar system since the heliosphere — the region of space influenced by the solar wind — extends billions of miles beyond Pluto.



Magnitude scales for solar storm impacts, **Geomagnetic Storms (G)**, **Solar Radiation Storms (S)**, and **Radio Blackout (R)** are provided in **Table 4.21**, **Table 4.22**, and **Table 4.23** respectively. The Kp is the planetary disturbance index, with 9 the highest.

Table 4.21

Solar Storms: Geomagnetic Storm (G) Magnitude Scale

Magnitude Scale	Description	Effect of Geomagnetic (G) Storm	Frequency Per Solar Cycle
GEOMAGNETIC STORM (G)			
G1 Geomagnetic	Minor Kp=5	<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). 	1,700 per cycle (900 days per cycle)
G2 Geomagnetic	Moderate Kp=6	<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 Kp=7	<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)

Magnitude Scale	Description	Effect of Geomagnetic (G) Storm	Frequency Per Solar Cycle
G4 Geomagnetic	Severe Kp=8	<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 Kp=9	<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)

Table 4.22
Solar Storms: Solar Radiation (S) Magnitude Scale

Magnitude Scale	Description	Effect of Solar Radiation (S) Storm	Frequency Per Solar 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. ✦ 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. 	10 per cycle
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. 	Fewer than 1 per cycle

Magnitude Scale	Description	Effect of Solar Radiation (S) Storm	Frequency Per Solar Cycle
		<ul style="list-style-type: none"> Other systems: Complete blackout of HF (high frequency) communications possible through the polar regions, and position errors make navigation operations extremely difficult. 	

Table 4.23

Solar Storms: Radio Blackout (R) Magnitude Scale

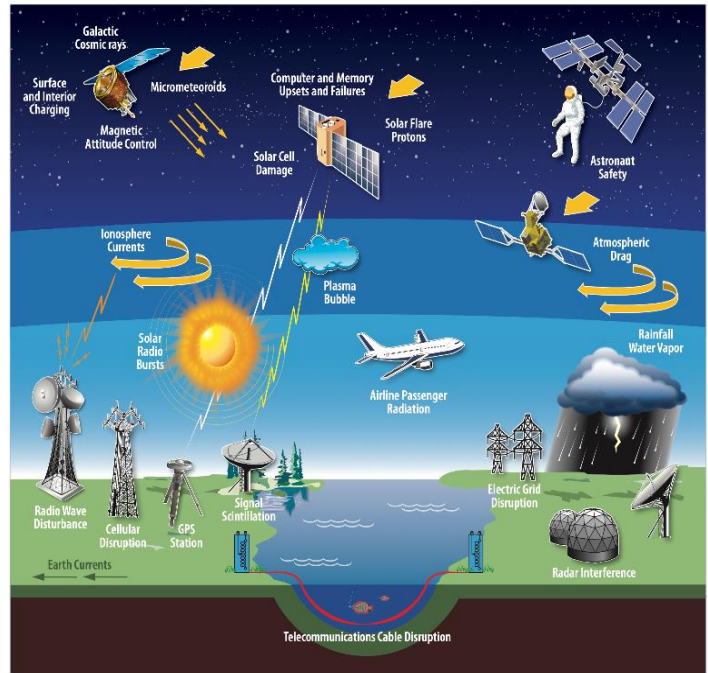
Magnitude Scale	Description	Effect of Radio Blackout (R)	Frequency Per Solar Cycle
RADIO BLACKOUT (R)			
R1 Radio Blackouts	Minor	<ul style="list-style-type: none"> HF Radio: Complete HF (high frequency) radio blackout on the entire sunlit side of the Earth lasting for a number of hours. This results 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. 	2,000 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

The average elevation in Warner is about **600'** above sea level, with the highest elevations on Brown Hill at **900'** and Great Hill at **850'** to the southwest near Dunbarton. Many residents in the Central NH region enjoy the aurora borealis viewed from highest elevations. The Capital Area Fire Mutual Aid Fire Compact has emergency communications antennas throughout the region on these highest hilltops. On Mount Kearsarge in Warner, to Warner's northwest, geomagnetic storms reaching New Hampshire can be readily observed. Emergency response personnel could monitor these storms from the Mount Kearsarge Fire Tower in Warner or from Pat's Peak in Henniker, or possibly the Oak Hill Fire Tower in Loudon. From an individual or municipal standpoint, little can mitigate the impacts of space weather.

Solar Weather Hazards Resource Links:

- NOAA Space Weather Prediction Center Solar Cycle 25 Forecast Update <https://www.swpc.noaa.gov/news/solar-cycle-25-forecast-update>
- NOAA Space Weather Scales <https://www.swpc.noaa.gov/noaa-scales-explanation>
- NOAA's Space Weather Prediction Service <https://www.swpc.noaa.gov>

NASA Potential Space Weather Impacts



Aurora borealis can be photographed from Mount Kearsarge as shown in the November 2023 photo below from Solar Cycle 25.



Photo courtesy of Kimberley Brown Edelmann

NON-NATURAL HAZARDS

Hazard Type	Main Hazard Category	Specific Hazards Included
Haz Mat	Hazardous Materials/ Radiological	Hazardous Materials, Radiological
Human	Human Hazard	Crash, Mass Casualty Incident, Cyber Event, Terrorism/ Violence
Technological	Technological	Aging Infrastructure, Conflagration (Fire), Long Term Utility Outage

Because the **Hazard Mitigation Plan 2024** has a distinct focus on natural hazards, there will be little examination of human or technological hazards which can be described and acted upon in the local *Emergency Operations Plan*. While an effort will be made to concentrate discussions and evaluation on the natural hazards, there will be no magnitude, extent, or indices descriptions of non-natural hazards.

There is often some overlap between **Hazardous Materials** and **Technological Hazards** as secondary hazard effects of natural hazard events or disasters. A **flood** can cause an old bridge (**Aging Infrastructure**) to fail; **high winds** can cause electric lines to fall (**Utility Outage**). It is acknowledged that **Human**, **Technological**, and **Hazardous Materials** hazards could occur in Warner, and that the existing preparedness, response, and recovery plans and teams across the region will participate to fix the issues. These non-natural hazards are often noted when discussing the impacts of natural hazards or mitigation because they are often the easiest to mitigate.

Hazardous Materials/Radiological

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 continuing the program of holding biennial

municipal Household Hazard Waste (HHW) collection days is crucial to helping to maintain a healthy environment for Warner's residents. Historic properties with old manufacturing practices or improper storage of chemicals or materials could impact the land and groundwater supplies for future generations. These privately-owned properties are referred to as brownfields and may serve as future targets for mitigation potential. Informal (illegal) junkyards pose similar problems. Both types of properties are known to exist in Warner and pose significant difficulties for cleanup.

Radiological hazards are unlikely to occur unless at occupational sites or along transportation routes during vehicle crashes. Warner is outside of the **50**-mile Emergency Planning Zone (EPZ) for Seabrook Nuclear Power Plant. Nuclear power plants produce roughly **20%** of the nation's power and **3** million Americans live within **10** miles of a nuclear power plant, but most are being phased out. 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.

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. Warner's I-89 and Exit 8-9 ramps, NH 103 corridor, and Davisville's NH 127 and Exit 7 are prime locations for vehicle crashes.

In the region, the railroad lines along the Merrimack River create the potential for a (railcar) transportation accident. (Former rail lines in Warner are being consolidated into a recreational uses Rail Trail by the Friends of the Concord - Lake Sunapee Rail Trail.) 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 a small airport in the Central NH region used by private small planes, but Manchester-Boston Regional Airport (MHT) can be accessed via I-293 in about 45 minutes. Air traffic can also be hazardous to the region's citizens. Small air traffic sites such as JBI Helicopter in Pembroke, local helipads in communities, and small private air strips increase the chances for a possible aviation crash, especially in the higher elevations around Mount Kearsarge and Pat's Peak. With the technological prominence of personal drones that can be flown within site of the user, possibilities for drone crashes with people, infrastructure or vehicles increase.

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. The closest hospitals to Warner are Concord Hospital, about **20** miles to the southeast, and New London Hospital, about **12** miles to the northwest. 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 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 like public health events (like COVID) 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. Vandalism is the willful defacement or destruction of property.

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, or the Merrimack Station in Bow. Disturbances 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 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 oriented 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 of 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, Warner's local government and residents should be prepared to address **cyber events** in the various and growing forms they take.

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**.

Aging Infrastructure

Infrastructure of a community includes its roads, sidewalks, bridges, culverts, water lines, sewer lines. 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 I-89 and Exit 7, 8 and 9 ramps, the NH 103 corridor and NH 127. The Town is responsible for nearly **63 miles** of local Class V gravel and paved roadways, plus sidewalks, as well as the bridges and culverts. 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 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. Some of the gravel Town roads in Warner are constructed using ditching instead of storm drains. The Town is not required to develop and maintain MS4 stormwater regulations. Some of the Town maintained roads are gravel, enabling easier maintenance and washout repair. Bridges and dams are described in the **APPENDIX A Critical and Community Vulnerability Assessment**.

Conflagration Fire

Fires which are not natural hazards are often associated with vehicles, structures or hazardous materials spills, or sometimes an explosion. A fire in a densely built or traveled area can become a large, deadly conflagration. Conflagrations can be especially deadly. Downtown Warner along Main Street with its closely constructed older buildings or homes on Kearsarge Mountain Road are local examples of possible conflagration. These types of fires 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.

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. Another common source of energy, coal, can be potentially hazardous because coal power plants emit chemicals such as mercury and sulfur dioxide.

Any service-providing businesses in Town (gas station, bank, fast food, convenience, etc.) would 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 Warner 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 and Rescue Department and Police Department offer to conduct welfare checks for residents in need.

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. Utilities could include municipal water and sewer service, internet, and natural gas.

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 Warner, currently owned by Granite Shore Power, formerly owned by Eversource and Public Service of New Hampshire. As of 2018, the Merrimack Station was 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. Future plans for the station are to harness solar energy and phase out coal usage.

The US Energy Information Administration data from 2022 reports much of the State's electricity (58%) is provided by the Seabrook Nuclear Power reactor. The remaining 14% of electricity was generated from renewable sources, including solar, hydroelectric, wind, and biomass and Natural gas-fired (15%) and small amounts of coal-fired and petroleum-fired electricity.

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 snowstorm, ice storm, or other severe weather event, customers can easily lose power and/or other utilities. Warner 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.

Regional and state communications are often co-located on the tower upon which Town's emergency communications are based. The Town is a member of the Capital Area Mutual Aid Fire Compact which is a centralized communications hub for emergency fire and medical communications. The CAMAFC has redundancy sharing with the Lakes Region Fire Mutual Aid Compact. A series of towers throughout the region carry emergency communications. The telecommunications tower atop Mount Kearsarge carries the Capital Area emergency equipment as well as local, state, and federal repeaters.

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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 **Warner Hazard Mitigation Plan 2019**.

The identification of Critical and Community Facilities within Warner 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 Warner 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 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 2024 assessing software and the 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 Warner 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 Assessed Value* \$	Primary Hazard Vulnerabilities
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Critical Facilities

Critical Facilities are categorized as those Town or State buildings or services that are required to keep the community running during a disaster. The personnel in the Warner Town Department facilities, the Town Hall, Fire and Rescue Department, Police Department, Emergency Management Department, and Public Works Department provide the services necessary for coordinating everyday activities and for emergency response. Other critical partners such as the Pillsbury Free Library, Kearsarge Regional School District (Simonds Elementary School), Warner Village Water District, Eversource, and TDS Telecom provide essential services to the community. 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, gas lines, water & sewer lines, and electric transmission lines are included because of the essential communication and utility services provided, and their significant impact on Warner residents when they fail. Other **Critical Facilities** would include educational facilities, medical facilities, and emergency shelters.

The assessed structure/building only value is provided for each critical 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: Fire Station & EOC (g); Highway Department with Salt & Storage Shed (g); Inactive NH DOT Shed – 501 (diesel source); NH DOT Shed – 526; Police Department (g); Town Hall (g); Transfer Station. (g) = generator.

Assessed structure (only) valuation for these essential facilities total \$11.2m.

Utilities include:

WATER AND WASTEWATER AND SOLID WASTE: Sewerage Pump Station; Warner Wastewater Treatment Plant; Water Pump Station; Water Storage Tank 1; Water Storage Tank 2; Well Heads (2).

ELECTRIC, INTERNET, TELEPHONE: Eversource Power Lines; Eversource Sub Stations; TDS Telecom Central Office (portable generator); TDS Remote Station – 8 locations.

TELECOMMUNICATIONS TOWERS: Mt Kearsarge Fire Tower; Telecommunications Tower- Kelley Hill; Telecommunications Tower - North Road; Telecommunications Tower (Nickerson)- Route 103; Telecommunications Tower (MCT)- Kearsarge Mtn Road.

FIRE SUPPRESSION: Dry Hydrant - Mason Hill; Dry Hydrant - Pleasant Pond; Dry Hydrant- Poverty Plains; Dry Hydrant- Depot St/ Warner River; Dry Hydrant- Melvin Mills/ Warner River; Dry Hydrant- Newmarket Rd/ Warner River; Main Street/Village Area Hydrants ; Fire Pond (seasonal).

Assessed structure (only) valuation for these utility structures total \$10.6m.

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Dams include:

2 Low Hazard (L) Dams: 243.04 Silver Pond Dam (Town) on Silver Brook; 243.26 Bear Pond Dam (Contoocook Village Precinct) on Amey Brook Tributary.

14 Non-Menace Dams: 243.07 Swain Lowell Dam (Ladd) on Warner River; 243.15 Silver Brook Dam (Smith) on silver Brook; 243.16 Silver Lake Upper Pond Dam (Town) on Silver Brook; 243.18 Farm Pond (Bridgewater) on natural swale; 243.19 Fire Pond Dam (Kumin) on unnamed brook; 243.20 Highlands Farm Pond Dam (Bartlett) on unnamed brook; 243.21 Fire Pond Dam (Cavellero) on natural swale; 243.23 Recreation Pond (Solomon) on Bartlett Brook branch; 243.24 Fire Pond Dam (Dickman) on natural swale; 243.25 Farm Pond Dam (Dickman) on unnamed brook; 243.27 Fire Pond Dam (Valey) on unnamed brook; 243.28 Farm Pond Dam (Kuno) on unnamed brook; 243.31 Burke Pond Dam (Burke) on unnamed brook; 243.32 Bower Stock Pond Dam (Bower) on unnamed brook.

Estimated structure (only) repair values for these dams total \$7.4m.

Bridges include:

18 TOWN BRIDGES: 123/102 (Town) North Road over Meadow Brook; 134/110 (Town) North Road over French Brook; 151/037 (Town) Laing over Warner River; 157/087 (Town) Waterloo Covered Bridge Newmarket Rd over Warner River; 159/075 (Town) Retreat Road over Davis Brook; 159/098 (Town) Old Town Line Road over Colby Brook; 160/022 (Town) Bible Hill Lane over Warner River; 175/134 (Town) Bartlett Loop over Willow Brook; 177/127 (Town) Bartlett Loop over Willow Brook; 181/112 (Town) Chemical Lane over Warner River; 183/114 (Town) North Village Rd over Warner River; 184/125 (Town) School Street over Willow Brook; 187/104 (Town) North Village Road over Silver Brook; 189/094 (Town) Mink Hill Lane over Silver Brook; 191/122 (Town) Dalton/Joppa Covered Bridge West Joppa Rd over Warner River; 194/172 (Town) Connor’s Mill Rd over Schoodac Brook; 195/166 (Town) Schoodac Road over Frazier Brook; 216/159 (Town) Poverty Plains Rd over Schoodac Brook.

23 STATE BRIDGES: 104/122 (State) Kearsarge Mt Road over French Brook; 144/056 (State) NH 103 over Warner River; 145/053 (State) NH 103 over Warner River; 158/099 (State) NH 103 over Colby Brook; 164/103 (State) I-89 SB over NH 103; 164/104 (State) I-89 NB over NH 103 & Ramp; 165/106 (State), NH 103 over Stevens Brook; 166/103 (State) I-89 SB, Ramp over Warner River; 166/104 (State) I-89 NB over Warner River; 184/113 (State) I-89 NB over North Village Road; 185/112 (State) I-89 SB over North Village Road; 187/122 (State) NH 103 over Willow Brook; 195/122 (State) I-89 NB over West Joppa Rd; 196/121 (State) I-89 SB over West Joppa Rd; 199/128 (State) I-89 NB over Warner River; 202/136 (State) NH 103 over I-89 NB; 206/141 (State) I-89 NB, Ramp over Warner River; 221/156 (State) I-89 NB over Schoodac Brook; 222/156 (State) I-89 SB over Schoodac Brook; 243/166 (State) I-89 SB over Warner River; 244/167 (State) I-89 NB over Warner River; 255/163 (State) I-89 SB over NH 103; 255/164 (State) I-89 SB over NH 103.

3 RED LISTED BRIDGES: 189/099 (Town) North Village Road over Silver Brook; 204/136 (State) NH 103 over I-89 SB, Warner River; 254/180 (State) NH 127 over Warner River (Bridge Replacement).

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Estimated structure (only) rehabilitation values for these bridges total \$92.0m.

Shelters, Schools, and Medical Facilities include:

SCHOOLS AND SHELTERS: Pillsbury Free Library (Cooling Center) (g); [~30-40 meeting room seated capacity]; Simonds Elementary School; [~140 children + ~25 staff]; Town Hall (Town Shelter); [~75 capacity]; Magdalen College - campus for sale in 2024; [~70 students] Town MOU for KMR Town Shelter; Old Graded School Building (Community Action Program, Warner Area Food Pantry, Warner Connects, Family Closet Thrift Store, GearUp Homeschoolers [~15-25 students], Warner Early Learning Center Boys & Girls Club Daycare for infants and toddlers [~9-12 children, 3-5 staff]).

MEDICAL FACILITIES: Concord Hospital Family Medicine; Back in the Saddle (BITS) Therapeutic Equine Training Center; Ted Austin Counseling Services; Concord Hospital Rehabilitation Services (Physical Therapy); Heart and Soul Counseling Services.

Assessed structure (only) valuation for these schools, medical facilities and shelters totals \$10.1m.

CRITICAL FACILITY 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. See **APPENDIX A CRITICAL AND COMMUNITY FACILITIES VULNERABLE ASSESSMENT** for the referenced Tables:

Essential Facilities Table

- ⦿ NH 103 West addresses are difficult to locate via Google search and erroneous directions are often provided. The Department of Public Works (DPW) is a good example of this. The Library regularly makes changes to numerous addresses as suggested edits, and has subsequently shifted them within Google. This Geolocation issue could impede emergency response from non-local dispatch if E-911 maps are not utilized. All emergency services (should) use E-911.
- ⦿ NH 103 West address numbering is especially confusing. Starts renumbering within each Town the route crosses.
- ⦿ The Transfer Station and Highway Department (which has a new 20-year steel frame building with offices) are currently without fire suppression systems.
- ⦿ The Transfer Station is also without a generator. This means that during a power outage, the Transfer Station is unable to run bailers and recycling equipment – the operation of which relies on both 220v and 440v three phase electricity.

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Utilities Table

- ⦿ The TDS remote stations which have been established for TDS communications are spotty around town.
- ⦿ While the TDS remote stations in Warner are configured to operate on generator-supplied power, there are currently no generators from which they can source it. Batteries are available on station, however, they will not be sufficient to support their power requirements for long. Hook-ups are available for single phase generators. 110v (single phase) or 220v and 440v three phase electricity can be used to run TDS portable.
- ⦿ The central TDS Telephone Office no longer has a standby generator. This means that, if power is lost, all landline telephone, VOIP, internet, and fiber communications in Warner will fail, once local battery backups have been depleted. This would also be a three-phase portable electricity generator.
- ⦿ Some of Village Water Precinct’s iron pipes are over a century old, and in imminent need of replacement. The 100+ year-old pipes are on West Main, East Main, and Kearsarge Mtn Road (Town water & sewer stops at second apartment at 115 KMR).
- ⦿ As the town continues to grow, a 3rd well will ultimately be a necessity.
- ⦿ The sewerage pump station has no standby generator, which would impact the entirety of northern side of Route 103 (Market Basket, McDonalds, etc.). A portable generator may be connected; however, it comes with a theft risk. When the pump fails (such as during outages), a pumping truck is brought to remove the sewage.
- ⦿ When the two main transmission lines from Eversource (Bradford and Hopkinton) fail, repairs are sent from a moderate distance (Bedford/Newport), causing significant delays in the process of repairing and reconnecting. The lines from Bradford previously located in the woods are now placed along the road. Remote switching allows the pinpointing of downed lines, as well as fast redirecting to the lines. The issue stems from the distance between the source of the problem and that of the repairs. Electrical service (Eversource) has improved.
- ⦿ Some of the dry hydrants were repaired, which often become clogged or hindered by plastic fittings that shrink during cold weather. Maintenance and repair are required, and testing should be conducted annually (at least).
- ⦿ The water hydrant system (owned by the precinct) is flushed seasonally. The Public Works Department is responsible for hydrant replacement, with 1 hydrant upgraded annually.
- ⦿ Fiber internet technology and rollouts are slow in New Hampshire, statewide.

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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

- Communication remains spotty for cellular and emergency communications. Fiberoptic internet connectivity is lost daily at businesses, and even when networks are online and accessible, they are slow to a degree that is inconsistent with adequate business operation. Cell towers need to be connected to a central Office to operate.
- TDS is the only supplier of fiberoptic internet, and the Town survey has indicated that residents need better internet service.
- Town Departments have both Fire & Rescue, Highway & DPW have analog, and PD & EOC have digital (FD received grant funds for the acquisition of upgraded radios, in-line with an annual update). Radio communications remain unreliable in places, due to poor signal. AT&T appears to be the most reliable within the town of Warner, outperforming Verizon & US Cellular. The latter two providers are consistently reported as spotty and inconsistent. Providers are currently concentrating on 5G networks (and 6G technology already on the horizon for the future). Inevitably, this means that they are likely prioritizing upgrades and optimizations of faster networks and ignoring those still using lower speeds (4G). Funding for Internet network upgrades may be obtainable. Rates for these are expensive.
- A five-year cable/internet franchise-contract currently exists between TDS and the Board of Selectmen, which holds precedent. At present, there is not enough of a subscriber base for any other provider.
- INFO: TDS covers 7-8 towns locally; with the main office and equipment in Contoocook, on Kearsarge Avenue. Since the 2008 ice storm, outage problems have not been significant. Warner has local contacts for getting assets on site, and any outages are fixed by TDS repair teams, with the addition of associate contractors (for heavy construction work).
- INFO: Dilapidated water wells have been rehabilitated and are working as intended. The existing study would be updated for a potential new well (3rd) to be located elsewhere.
- INFO: The Police Department is on the first responders list, and now has AT&T service. This change is an improvement, both in terms of cost as well as reliability. AT&T will deploy a portable antenna during storm events as part of their provided service. The possibility exists to deploy these same antennas during the Fall Festival event. AT&T views first responders as preferred customers and will subsidize switching plans.
- INFO: 5G is the latest technology, and most providers are focusing on this in lieu of 4G and other predecessors. Satellite internet will be the newest wave (Starlink). DishNetwork and DirectTV provide Satellite service (provider leases will ensure they move to the lower cost towers). The position of carrier antennas can influence

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coverage. Today, a much better working relationship is being fostered with tech companies, as compared to the past.

- ◉ INFO: Village Water Precinct pumping station on Cemetery Road (off Chemical Lane) does have a standby generator.

Dams Table

- ◉ Beaver dam hazards have been identified at the following locations: Mink Hills, French Brook/North Road, Mason Hill/Bagley Pond, Poverty Plains Road/wetland culvert, Schoodac Road/Schoodac Brook, Willow Brook/Pumpkin Hill Road, and Silver Lake. In response to hazards/potential hazards, beaver are either trapped and eliminated, or relocated. Beaver Deceivers may be an effective, non-lethal resource and alternative to usual methods of beaver removal.
- ◉ A vulnerability exists in terms of Newbury Dam at High Street/Lake Todd. Should this dam breach, it would severely impact the Warner River downstream.

Bridges Table

- ◉ As per NH DOT, regarding Bridge 254/180 NH 127 over Warner River, there is a bridge replacement plan in project design for 2024 (out about 1 year of service). There is also a possible bicycle lane under consideration. Lots of ice jams accumulate in this area, as well as flooding.
- ◉ Old Iron Lang Bridge 151/037 (Town) has encountered ice jams from the Warner River, creating future potential for damage, flooding, and debris. Water heads at the bend and into the bank (the retaining wall has trees growing through it) on NH 103, scouring the bank and retaining wall.
- ◉ 189/099 (Town) North Village Road Bridge over Silver Brook is still red-listed. It is slated to be featured on the NH DOT Ten Year bridge list for 2026-2027 rehabilitation. 20% of funds are allocated through The Town CRF.
- ◉ 187/122 (State) NH 103 over Willow Brook; East Main Street Bridge has Handrails/guardrails which are dilapidated, rusty and generally unsafe. Additionally, the Sidewalk does not meet ADA compliance. This is a significant public safety issue.
- ◉ INFO: the Town has a Capital Reserve Fund (CRF) for bridge maintenance and improvement to which annual deposits are made. The Board of Selectmen is responsible for authorizing expenditure.

Shelters, Schools and Medical Facilities Table

- ⊙ Kearsarge Mountain Road experiences high instances of falling trees in its roadway, with each occurrence forcing isolation for a period of time. Options are available for easements for an egress; however, more work needs to be done.
- ⊙ The Town Hall bathroom facilities have limited access, and there are no showers available when the facility is being utilized as a Town Shelter.
- ⊙ The School is in need of an installed generator in order for school functions to carry on, uninterrupted, in the event of a power outage. The building has no sprinkler system; however, it does have a fire alarm system. There is limited traffic-flow space for parent collection/evacuation of children. The school drill which utilized a designated evacuation to the United Church of Warner, which has worked well. The School District has been working to renovate rooms each summer.
- ⊙ The older, 1800-section of Simonds School is comprised of the original two-story high school building. There is an unsafe slanted floor with crawlspace, which may be an additional hazard. This area would be difficult to reinforce.
- ⊙ There is no backup generator or elevator in the Old Graded School building (Community Center).
- ⊙ Once Magdalen College has been sold, it will be necessary to seek a new MOU for shelter use, for KMR residents.
- ⊙ INFO: There remain 178 trees in need of felling on Kearsarge Mountain Road per Eversource.
- ⊙ INFO: The Simonds School Fire escape (across the top) has been replaced. It must be shoveled during snowy weather, like all entrances.
- ⊙ INFO: The Town has a working relationship with Capital Area Public Health Network, which can open regional shelters and bring in other resources for those with additional needs.

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 2024**. 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 Warner has hundreds of culverts under its responsibility. The Public Works Department maintains multiple Town culverts daily (debris removal, clearing, repairs) and keeps pace with culvert upgrades as long as Town voters continue to annually fund the projects. The intent is to upgrade failing culverts with either open box culverts or to bridge standards, respectively. There are regular culvert upgrades completed each year, with these numerous smaller culvert upgrades essential.

Table 5.1 displays Warner’s initial listing of culverts in need of most urgent upgrade and approximately when the upgrades should occur with numerous large-scale projects. Most of the culvert upgrades involve the installation of new box culverts to replace metal corrugated round pipes. The East Joppa Road box culvert replacement over **Bartlett Brook** cost is about **\$600,000** in **2024-2025**, partially funded through NH Department of Environmental Services grants. A set of box culverts on Red Chimney Road over **Ballard Brook** is being phased, estimated to cost **\$680,000** including grant funds to pay for materials, permitting, study and design. For larger projects, contracted engineering, design and permitting may need to occur and would be included in the respective cost estimates. Labor for the smaller projects is performed by Town staff and is usually considered an in-kind cost. The optimal timeframe for these upgrades to protect the Town from **Inland Flooding, River Hazards** and **Aging Infrastructure** is between **2025-2029** which is within the span of this **2024 Plan**.

Table 5.1
Town-Owned Culverts in Need of Upgrade Through 2029

Action #	Location of Culvert(s) to Upgrade	# of Culverts	Intersecting Water	Issue(s) with the Culvert(s)	Upgrade Diameter Inches	Estimated Upgrade Year	Total Approx \$ Cost for All
#68-2014	Upgrade Ladd Lane Culvert over Davis Brook to Reduce the Impact of Floods and Erosion	1	Davis Brook	Two 36” culverts on Ladd Lane are rotted out and need to be upsized to 48” corrugated steel. More Time, More Funding. Possible completion in 2025. Project to be completed with 48” plastic pipe removed from Red Chimney stream diversion.	48”	2025	\$10,000
#73-2014	Upgrade a Box Culvert Bridge on 189/099 North Village Road over Silver Brook at	1	Silver Brook	After work for the dam, cost increased. Added to the state bridge list. Culvert is 7 X 9 X 50 Ft multi-plate that is rotting below water line. To be replaced with open bottom box culvert. More	16’x6.5’ x55’	2027	\$220,000

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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

Action #	Location of Culvert(s) to Upgrade	# of Culverts	Intersecting Water	Issue(s) with the Culvert(s)	Upgrade Diameter Inches	Estimated Upgrade Year	Total Approx \$ Cost for All
	the Dam to Reduce the Impact of Floods and Erosion			Time (on NH DOT Bridge Aid program for 2025-27 time frame. 189/099 (Town) North Village Road Bridge over Silver Brook is still red listed. Planned for the NH DOT Ten Year bridge list for 2026-2027 rehabilitation. Town pays 20% from CRF. in 2026 from Town CRF on			
#76-2014	Install a Box Culvert on Schoodac Road Culvert over Intermittent Stream to Reduce the Impact of Floods and Erosion	1	Intermittent Stream	The undersized culvert of Schoodac Road needs to be upsized to a box culvert and the road bed needs to be raised by several feet. When the Warner River backs up and the intermittent stream flows, the road floods and the shoulders erode. 'More Time, More Funding. Currently designed and permitted.	10'x7' x55'	2026	\$300,000
#77-2014	Install a Box Culvert on Poverty Plains Road Culvert over Schoodac Brook to Reduce the Impact of Floods and Erosion	1	Schoodac Brook	Existing 7 X 9 X50 ft multi plate culvert is rotted below the waterline. Replace this multi plate culvert with a bottomless box culvert. Need to be replaced when funds become available. 'More Time, More Funding - DPW to investigate in 2024	14'x7' x55'	2028	\$350,000
#79-2014	Install Two Box Culverts on Red Chimney Road over Ballard Brook and to Reduce the Impact of Floods and Erosion	2	Ballard Brook	First culvert is 5' by 40 ft Galvanized undersized. To be replaced with an 16 x 6 x55' foot open bottom box culvert taking into consideration fish migration. More Time (to be done in 2024, grant funds through Cons Comm NHDES ARMS and ARPA to be spent by end of 2026). Second culvert to be replaced is 4' x40 ft oval pipe culvert as a second project. Project totals: \$380,000 (\$260k grant), plus \$300,000 for second.	16'x6' x54'	2024	\$380,000 (\$260k grant), plus \$300,000 for second
#80-2014	Install a Box Culvert on Mink Hill Lane over Silver Brook to Reduce the Impact of	1	Silver Brook	Existing culvert has been repaired, but the project is not in CIP for any funding available now. Multi-plate that is rotting below water line. Needs to be repaired in-kind and when funds are available, to be replaced. 7'X	unknown at this time	2030	\$350,000

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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

Action #	Location of Culvert(s) to Upgrade	# of Culverts	Intersecting Water	Issue(s) with the Culvert(s)	Upgrade Diameter Inches	Estimated Upgrade Year	Total Approx \$ Cost for All
	Floods and Erosion			9' by 50ft Replace with Open Bottom Box Culvert to be sized by engineer. More Time, More Funding. Concrete invert installed.			
#81-2014	Install a Box Culvert on East Joppa Road over Bartlett Brook to Reduce the Impact of Floods and Erosion	1	Bartlett Brook	Existing pipe is 24" by 80 ft Concrete pipe. More likely scenario is to replace with a box culvert instead of replacing with 5 FT ' by 80 ft plastic pipe and add rip rap as appropriate at ends. More Time, More Funding (NHDES ARMS grant might be funding as secondary project). Design & permitting being done as part of ARMS grant in 2024, total cost estimated to be \$600,000.	unknown at this time	2024	\$600,000
#82-2014	Upgrade Newmarket Road Culvert over Davis Brook to Reduce the Impact of Floods and Erosion	1	Davis Brook	Culvert is Concrete undersized 30" by 60 ft causing washouts. Replace with 5 ft by 60 ft plastic culvert pipe. More Time, More Funding is needed.	60"	2029	\$75,000
Totals							\$2,585,000

Source: Warner 2025 Mitigation Action Plan, Public Works Department

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. Some of the culverts listed in **Table 5.1** have been developed into **Mitigation Action Plan** items in **8 MITIGATION ACTION PLAN**.

Progress is being made to upgrade the vulnerable culverts and stream crossings identified in the **Status of Stream Crossings in the Warner River Watershed, Revised February 2019** which is summarized in the **Hazard Mitigation Plan 2019**. A detailed table (**Table 31**) summarized the evaluated physical characteristics of about **56** culverts in Warner related to a Storm Vulnerability (flooding events, 2-year storms, 10-year storms, 25-year storms, 50-year storms, and 100-year storms), Aquatic Organism Passage (AOP) compatibility, a Geomorphic Compatibility. The study was conducted on a watershed basis. For

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additional detail, refer to the 2019 Plan and its Map 5 Culverts and Stream Crossings 2019. Because this study was a one-time project funded through other means, neither the study results nor Map 5 were updated for the 2024 Plan Update.

Like all communities, the Town owns and maintains hundreds of culverts. Most of the culverts are maintained (debris removal) on a regular basis and are upgraded when a specific need arises, such as a flood event which causes road erosion or washout. A comprehensive inventory of culverts and culvert conditions was conducted in Warner to develop a Culvert Maintenance Program followed by the Public Works Department.

MOST VULNERABLE ROADS AND NEIGHBORHOODS

The Town of Warner owns about 88.2 total miles of roadway including 62.9 miles of Town maintained Class V (both paved and unpaved roads, 71% of all Town owned roads) and 25.3 miles unmaintained Class VI roads (29% of all Town owned roads). Although not responsible for the maintenance of private roads (7.9 miles) and State highways (36.0 miles) with an additional 6.9 miles of State Recreational Class III roads, all roads within Warner can experience storms, natural hazard events, and other problems. 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; Kearsarge Mountain Road has all of these characteristics as do many of the Mink Hills roads. Warner residents reside in neighborhoods, subdivisions, along main roadsides, and within cul-de-sacs. When trees and powerlines fall onto roads or floods or wildfire hazards are occurring, evacuation of most of these neighborhoods would be difficult. The Town’s Road mileage, classification, and surface type are displayed in Table 5.2.

Table 5.2

Town Road Length and Classification

Warner Roads Legislative Classification	Total Length in Miles	Percentage of Road Network
Class I (State Primary Highway)	33.7	24.3%
Class II (State Secondary Highway)	2.3	1.6%
Class III (State Recreational)	6.9	5.0%
Class IV (Urban Maintained)	0.0	0.0%
Class V (Town Maintained)	62.9	45.2%
Class VI (Town Unmaintained)	25.3	18.2%
Private	7.9	5.7%
Totals	139.0	100.0%

Source: NHDOT GIS Mileage by Town and Legislative Class, January 2024

The Town of Warner is responsible for the maintenance of the miles of Town owned roads (Class V), some of which are paved and some of which are unpaved. Compared to other small-sized Central NH region communities, the Town of Warner hosts fewer than average roadway miles.

ONE-EGRESS ROADS AND CUL-DE-SACS

The Town of Warner has about **31** 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. At least **10** neighborhoods with **10** or more homes are located on one-egress roads, with Kearsarge Mountain Road at about **116** homes. Overall, approximately **427** homes (of **1,360** units overall, or **>31%**) are located on dead-end roads; with the US Census **2020** average of **2.16** people per housing unit, there are likely around Warner **922** residents (of **2,937**) who live on a one egress road. Awareness of potential vulnerabilities may help with evacuation and other emergency planning as well as long term mitigation projects in these areas. Evacuation of many of these neighborhoods, most of which are forested and subject to road blockage by downed trees and utility lines, would be difficult. All identified one-egress roads are displayed in **Table 5.3**.

Table 5.3
One-Egress Roads (Dead End) and Cul-de-Sacs

One-Egress (One Access/ Exit) Road Name	Road Class (Class V, Class VI or Private)	Specific Hazard Concerns	Condition (Good, Fair or Poor)	Miles Per NHDOT Jan 2024	Approx. # of Homes on Rd	Neighborhood Name (if any)
Bible Hill Rd	Class V	General	Fair	0.37	14	
Brookmeadow Lane	Class V	Winter, Earthquake, Wind	Good	0.28	7	
Brown Rd at Slayton Ln	Class V	General	Fair	0.51	6	
Chase Farm Ln	Class V	General	Good	0.95	3	
Chemical Lane	Class V	Winter, Earthquake, Wind, Flood, Fire	Fair	0.60	9	Chemical District
Colby Lane	Class V	Winter, Earthquake, Wind, Fire	Fair	0.26	2	
Collins Road	Class V	Winter, Earthquake, Flood, Wind, Fire	Fair	1.84	17	Collins District
Cunningham Road	Class V	Winter, Earthquake, Flood, Wind, Fire	Fair	1.34	7	
Danny Boy Ln	Class V	General	Good	0.13	4	
Diamond Lane/Pine Lane	Class V	General	Good/Fair	0.64	20	
Deinehart Ln off Rt103 East	Class V	General	Good	0.08	2	
Duck Pond Lane	Class V	General	Fair	0.70	8	
End of Burnt Hill Court (Seasonal)	Class V seasonal	General	Fair	0.12	3	
Gore Rd	Class V	General	Fair	0.36	7	
Gore Rd	Class VI	General	Fair	0.74	0	
Hartshorn Ln	Class V	General	Fair	0.40	18	
Henniker Rd from intersection of Cunningham Pond Rd to Henniker Town Line	Class V Seasonal	General	Fair	2.41	0	

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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

One-Egress (One Access/ Exit) Road Name	Road Class (Class V, Class VI or Private)	Specific Hazard Concerns	Condition (Good, Fair or Poor)	Miles Per NHDOT Jan 2024	Approx. # of Homes on Rd	Neighborhood Name (if any)
Horne Street	Class V	Winter, Earthquake, Flood, Wind, Fire	Fair	1.82	11	
Howe Lane/ Ladd Lane	Class V	General	Fair	0.47	4	
Kearsarge Mountain Road	Class V	Winter, Earthquake, Flood, Wind, Fire, Transportation, Utility, Hazardous Material	Good	1.60 (Town maintains entire road in winter)	116	Kearsarge Mountain
Kearsarge Mountain Road	Class III (State recreational)	Winter, Earthquake, Flood, Wind, Fire, Transportation, Utility, Hazardous Material	Good	6.88	0	Kearsarge Mountain, Rollins State Park
Laing Bridge Ln	Class V	General	Fair	0.27	5	
Latvian Lane and Surrounding Roads	Class V and Private	Winter, Earthquake, Flood, Fire, Utility	Fair	1.42	35	
Mink Hill Lane	Class V	General	Fair	0.55	6	
North Village Road at Mink Hill Lane	Class V	General	Fair	2.00	8	
Old Denny Hill Road	Class V	Winter, Earthquake, Wind, Fire, Utility	Fair	0.66	8	
Old Pumpkin Hill Rd	Class V	General	Fair	0.53	9	
Quimby Road	Class V	General	Fair	0.24	5	
Schoolhouse Ln	Class V	General	Fair	0.18	3	
Tom's Pond Lane	Class V	General	Fair	0.63	29	
Waldron Hill Road	Class V	Winter, Earthquake, Fire, Wind, Utility	Good	0.93	40	
West Roby District Road	Class V	Winter, Earthquake, Flood, Wind, Fire	Fair	0.68	14	
Willaby Colby Road	Class V	Winter, Earthquake, Flood, Wind, Fire	Fair	0.76	7	
Total Miles One Egress Roads				31.3 miles		
Total Homes on One Egress Roads					427 homes	
Total Feet One Egress Roads				165,267.2 feet		

Source: Warner Public Works Director, Emergency Management, NH DOT GIS Feb 2024

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:

ASSISTED LIVING COMMUNITIES: Pine Rock Manor Assisted Living [~70 beds].

CAMPGROUNDS OR SEASONAL HOUSING: Lutheran Latvian Homes [~45 homes]; Pleasant Lake Seasonal Campground [~54 sites].

CHILD CARE FACILITIES: Boys & Girls Club (Simonds School) [~40 children].

MANUFACTURED HOUSING PARKS OR SOCIALLY VULNERABLE NEIGHBORHOODS: Pleasant Lake Estates Manufactured Homes [~33 homes].

AGE RESTRICTED COMMUNITIES: North Ridge (Kearsarge Elderly Housing Inc) [~35 units].

APARTMENTS, MULTI-FAMILY 4+ UNITS: Blackstone Valley Housing [~8 units]; Braeside Apartments [~11 units]; Davisville Apartments [~6 units]; Depot Street Apartments [~9 units]; Hartshorn Lane Apartments [~4-5 units]; Hartshorn Lane Apartments [~6 units]; Kearsarge Apartments 103 [~12 units]; Kearsarge Apartments 115 [~12 units]; Parker Apartments [~4 units]; Village Apartments [~7 units].

Assessed structure (only) valuation for these vulnerable population facilities total \$10.1m.

Economic Assets include:

MAJOR BUSINESSES and services that employ a large number of people or contribute to the local economy: A Warner Storage; Brayshaw Printing; Dunkin'; Kearsarge Business Center (Indoor Fleamarket); Madgetech; Market Basket; McDonalds; Mentis Sciences Aerospace; Mentis Sciences Aerospace; NH Park & Ride; NH State Liquor Store; Post Office; Sugar River Bank; The Pampered Pooch Dog Grooming Salon; Warner Laundrymat.

AGRICULTURAL: B&M Maples (Maple Syrup); Back in the Saddle (Horse Boarding, Trail Riding, Arena); Pillsbury's Syrup (Maple Syrup); Beaver Meadowbrook Farm Sugar House (Maple Syrup); Blue Moon Berry Farm (Blueberries); Courser Farm (Produce, Cattle); Curly Q Farm (Alpaca Farm); Double Clear Farm (Horse Boarding, Arena); Dun Fooling Farm (Hay); Fun with Ponies (Donkey, Pony Farm); Kearsarge Gore Farm (Organic Produce); Kearsarge Meadows (Horse Boarding & Training); No Acre Farm (Dairy, Livestock); Pumpkin Blossom Farm (Lavender) Farm; Rogers Maple Syrup (Maple Syrup); The Vegetable Ranch (Organic Produce); Twin Ridge Farm (Horse Training & Boarding); Yankee Farmer's Market (Buffalo Farm).

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See also **Hazardous Materials** facilities. **Assessed structure (only) valuation for these economic asset facilities total \$18.0m.**

Main Street Village area (residential and businesses) includes: 1 East Main Street- Apartment (Backside) Cafe One East (Multiple), Shelter Kit (House); 2 East Main Street- Reed North Restaurant (Multiple), Body Mechanic Massage; 8 East Main Street- Brown Family Realty; 9 East Main Street- Kearsarge Insurance; 11 East Main Street- Apartment (Upper), Buttonwood Shop; 15 East Main Street- Apartments Upper, Boston Asset Management, The Local Restaurant (Multiple); 16 East Main Street- Main Street BookEnds; 17 East Main Street- Apartments West Side, Charlie Mac's Pizza; 19 East Main Street- Warner Public Market; 25 East Main Street- Counseling Services LLC, The Photography, Velvet Moose Ice Cream Shoppe (Multiple) Warner Wags (former); 27 East Main Street- Olde Window Restorers [Main Street Holding LLC (Owner)]; 51 East Main Street- Belle Capelli, Brookside Building (multiple), Office Rental; 69 East Main Street- The Maples.

Assessed structure (only) valuation for these Main Street economic asset facilities total \$2.9m.

Hazardous Materials Facilities include:

INDUSTRY, LIKELY TIER 2 (REPORTABLE) FACILITIES - GAS STATIONS, PROPANE, OIL, MANUFACTURING:

Aubuchon Hardware; Circle K Irving ; Evans Fuel Mart Shell (Gas); Kearsarge Heating Oils; Nicom Coatings Corp.; Rymes Propane.

VEHICLE SALES, LANDSCAPING & EXCAVATION, LIGHT MANUFACTURE, POSSIBLE CHEMICAL USAGE:

Cyr Lumber Co & House Center; Pellettieri Associates, Inc.; Premier Coach Company Charlebois Industries; Knoxland Equipment; Tyler Lawn Care; Warner Stone (to open).

AUTO REPAIR SHOPS, SALVAGE YARDS, BROWNFIELDS: Ajax Auto; C&M Repair; Harry’s Garage (closed, may be a Brownsfield); Heselton Junkyard; Lockes Junkyard; Azmy Property.

See also **Economic Asset** facilities. **Assessed structure (only) valuation for these hazardous material facilities total \$6.6m.**

Cemeteries and Churches include:

CHURCHES: Magdalen Catholic College Church (closure notice May 2024); NH Telephone Museum Basement Church; United Church of Warner.

CEMETERIES: Bartlett Family Cemetery; Bean Family Cemetery; Brown Family Cemetery; Coal Hearth Cemetery (81 lots) *Town; Colby Cemetery (22 lots) Town; Davisville Cemetery (208 lots) *Town; Ferrin Cemetery; Gore/Flanders Cemetery (45 lots) Town; Hoyt Cemetery (5 lots); Johnson Family Cemetery (7 lots); Kittredge Family Cemetery (11 lots); Lower Warner Cemetery (97 lots) Town; Melvin Mills/Bagley Cemetery (47 lots)Town; Morse Cemetery (10 lots) Town; New Waterloo (1970) Cemetery (352 lots) *Town; Old Warner Village Cemetery (194 lots) Town; Page Cemetery (45 lots) Town; Parade Ground Cemetery (127 lots) Town; Peaceful Retreat Cemetery (Town); Pine Grove Cemetery Town; Pletcher Family Cemetery; Poor Farm Cemetery (Town); Poverty Plains Cemetery (Town); Pumpkin Hill Cemetery (Town); Sanborn Cemetery Town); Schoodac Cemetery (242 lots) Town; Seavey Family Cemetery; Sisco Cemetery

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(Town); Tory Hill/Pattee Cemetery (Town); Waterloo Cemetery (Town); Welchans Cemetery; Wheeler Family Cemetery.

Assessed structure (only) valuation for church facilities estimates for cemeteries total \$700k.

Historic Sites and Buildings include: Kearsarge Indian Museum; NH Telephone Museum/ Warner Fire Fighters Museum; Old Fire Station; Odd Fellows (Old Masonic Building, Burrington Builders); Old Meeting House; Main Street Warner Lodge, Inc (Formerly Harris); Warner Historic Society Building 1; Warner Historic Society Building 2. See also **Recreational and Gathering Sites**.

Assessed structure (only) valuation for these historic facilities total \$2.0m.

Recreational and Gathering Sites of PUBLIC land and buildings include: Bagley Park with seasonal ice rink Fall Foliage Festival (Annual Event); Riverside Park; Rollins State Park and Toll Booth; Silver Lake Town Swimming Area and Beach with building. **PRIVATE RECREATION: TRAILS, EASEMENTS AND CONSERVATION:** Concord - Lake Sunapee Rail Trail; Sunapee-Kearsarge-Ragged Greenway; Mink Hills Trails; Chandler Reservation Trails; Harriman Chandler Trails; Kearsarge Trail Snails Snowmobile Club (winter use only); Boundtree Trails.

Some of these sites can be **Economic Assets** to the Town even if the land is untaxable. Only some structure valuations were available. **Assessed valuations for the recreational facilities for land and/or structures total \$500k.**

Future Development includes both residential and commercial development potential in Warner.

FUTURE DEVELOPMENTS: As of **03-24** there are several **APPROVED/UNBUILT** developments or potential developments according to the Planning Board: Magdalen College (notice of 2024 closure); [holds ~70 students]; Map 7, Lot 39 Property 40-60 acres (sold June 2023); Potential Property (sold); Potential Property (sold); Map 14 Lot 7 (Market Basket); Map 35 Lot 4-1 (Dunkin); Map 35 Lot 4-3 (Dunkin); Map 35 Lot 5 (Evans).

LEGACY PARCELS: Map 3 Lot 022 (110 acres); Map 4 Lot 002 (105 acres); Map 7 Lot 060 (193 acres); Map 7 Lot 064 (242 acres); Map 11 Lot 024 (280 acres); Map 11 Lot 051 (201 acres); Map 18 Lot 023 (105 acres); Map 19 Lot 016 (163 acres); Map 19 Lot 039 (290 acres); Map 20 Lot 020 (124 acres).

LOTS IN WARNER FOR SALE 03-24: Horne Street Home & Lot (69 acres).

Assessed valuation for some Unbuilt Developments (LAND), Legacy Parcels (LAND) and Lots for Sale properties totals \$6.0m.

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COMMUNITY FACILITY 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. See **APPENDIX A CRITICAL AND COMMUNITY FACILITIES VULNERABLE ASSESSMENT** for the referenced Tables:

Vulnerable Populations Table

- ⦿ North Ridge Elderly Housing (35+ units) on North Road is vulnerable to power outages due to multiple trees down along an access road.
- ⦿ Lutheran Latvian Neighborhood, off NH 114 in Warner, is especially vulnerable to power outages, also due to multiple trees down on the access road.
- ⦿ Kearsarge Mountain Road is home to approximately 600 residents and is especially vulnerable to downed trees and downed power lines from storms. The state provides summer maintenance to The State Road, from Tory Hill Rock, while winter maintenance is provided by the Town.

Economic Assets Table

- ⦿ Rain events could result in flooding along the Warner River (primary issue in Town) and other water bodies in Town, including Stevens Brook and its intermittent stream. Too many rain events can also impede agricultural operations, such as haying.
- ⦿ Drought conditions can result in the impediment of water to agricultural operations, including horse farms/ pastures, vegetable crops, and orchards. Water restrictions are imposed by Warner Village Water District Precinct during drought conditions, as it pertains to recreational water, lawn, car washing, etc.
- ⦿ Wind and winter events have resulted in loss of power to businesses, forcing shutdowns to occur. People who depend on these services (gas, food) are unable to receive them. Market Basket is especially vulnerable in these instances (as are the residents who rely on the store). If there is no power in Town, the store is not open.
- ⦿ Eversource has identified Exit 9 as a priority area for reestablishing electricity, with lots of work already completed, and progressing toward the Exit 7 area. Eversource is rerouting the highline from the substation on School Street, to the substation on Poverty Plains Road. Work on this is currently underway and ongoing.
- ⦿ A Mentis walkthrough of the facility was completed by the Fire Department. They are working on an emergency plan for the facility, and getting a copy to the Fire Dept.

- A Madgetech walkthrough of new building is still needed; however, Madgetech is also working on an emergency plan.

Main Street Business Table

- Climatic/natural hazards such as earthquakes, snow-laden roofs, lightning, and fire/conflagration may promote building damage or even cause collapse to Main Street buildings. They are close to hydrants, river, and fire services.
- Water contamination, loss of water, sewage problems, and stormwater impacts due to earthquake or flooding in the Warner Village area may result in negative, public health-related effects on businesses and residents. Broken or ruptured piping is a significant concern, no matter the nature of the hazard event. Potable water is readily available (work with State).
- Loss of electricity and internet to businesses may result in loss of income, and potentially cause a negative, economic rippling effect. Necessary services cannot be provided to residents or customers during these times. TDS fiberoptic utilized for LAN-line phones.
- TDS (Main Street) manages all phone and internet services for Warner. They use portable generators to deliver service during a disruptive event. There are not enough cell tower providers in the downtown area, nor throughout the majority of Warner, as a whole, to account for when disruptions occur. Satellite services could be a redundant backup in some cases.
- Solar storms can produce an electromagnetic pulse capable of disrupting radio signals, satellite communication, and the entirety of the electrical grid. This may apply to the whole town, and all regional systems, such as emergency communications, water, and sewer systems.
- INFO: The Library and the United Church of Warner have generators, as does the Town Hall

Hazardous Materials Table

- Flooding along the Warner River may result in flooding to the tanks at Kearsarge Heating Oil, as well as Mentis Sciences Inc (MSI). While water may never reach them, should flooding rise to the level of the railroad tracks it could have catastrophic consequences. There is some containment at Kearsarge Heating Oil.
- A hazardous materials spill in the area of I-89 at Exit 9 may result in evacuation and/or a shelter-in-place order for the businesses at Exit 9. For illustrative purposes, as well as

contextual reference; in the Late 1980s, an incident occurred which ultimately resulted in a tractor-trailer landing in Riverside Park off I-89. Several hundred gallons of diesel fuel were spilled. Similar events have also transpired over the years; to include a roofing materials truck, and a milk truck off of I-89, into the Warner River.

- ⦿ The area between Exits 8 and 9 involves the downtown area. They have seen a dramatic decrease in accidents after DOT installed rumble strips along the highway.
- ⦿ A propane incident at the Rymes Propane site may result in a roadway obstruction (or complete inaccessibility) to the residents on Chemical Lane. This is a one-way-in/out roadway for all residents. Water rescue equipment in order to cross the river would be needed.
- ⦿ Groundwater and surface water contamination are concerns, particularly during heavy rain and flooding events, due to outdoor material leaching by HazMat facilities.
- ⦿ The Town took a property to court (zoning/ordinance) with regard to a property along the River that was in need of cleaning up. Warner & Webster have tried and failed to get properties to clean. The hearing was decided in favor of the property/owners.
- ⦿ INFO: There was also a Junked Vehicle Ordinance (2012) which the HMC feels is still appropriate.

Cemeteries & Churches Table

- ⦿ Climatic/natural events such as earthquakes, high wind, and lightning may result in potential building damage to the wooden churches in Warner. Power and internet loss may also occur. The United Church of Warner has a generator to prevent closure of this community building, which serves as a backup shelter/warming center. There is a lightning rod with grounding wire on the steeple. The church is on Town water and sewer. The steeple might be the most vulnerable feature of the structure; however, it was rehabilitated less than 10 years ago. Assessment is underway of downstairs windows for potential replacement. The church is the emergency evacuation site for Simonds School.
- ⦿ High winds, heavy rains and winter storms may result in downed trees, with subsequent potential for damage to cemetery buildings, fences, headstones/mausoleums, and stone walls. Erosion is an additional concern. Washouts to Access Road(s) may inhibit vehicle access and create additional drainage problems. Cemeteries are regularly maintained.

Historic Sites & Buildings Table

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- Lightning may result in potential fire and subsequent damage or total loss to any of the historic buildings. This is also a public safety concern, as these buildings may be occupied at any given time.
- Earthquakes, high wind, heavy rainstorms, and winter storms can result in building damage to these historical and cultural landmarks. Many of these sites are unoccupied, such as miscellaneous barns; the former Masonic Hall; the Lower Warner Meeting House; Odd Fellows; and others.
- INFO: The Historical Society has helped to obtain NH Historic Markers/National Registry of many Historic Places. These include the Waterloo Historic District; USS Kearsarge and Mt Kearsarge markers; Lafayette (one in front of Town Hall); former Masonic Hall; and Lower Warner Meeting House. Additional designation could bring more funding but may also come with additional restrictions

Recreation & Gathering Sites Table

- Flood, wind and winter storms may result in damage to recreational facilities and museums, preventing their use and potentially impacting occupants inside, at time of event.
- Flooding at Bagley Park and Riverside Park occurs regularly and damages the grounds. Trails (elevated) are unimpacted. Floods occur during heavy rains and snowmelt. The Park is situated within the Warner River floodplain, and as such, flooding is to be expected.
- Gatherings of Interested/concerned public often occur on-site during floods, despite many signs on-site and the presence of locked gates.
- Water contamination or cyanobacteria may occur at the Silver Lake Beach (tested by NHDES) as well as Pleasant Lake (not tested by NHDES), which also has a boat launch. Parks & Rec post closures quickly, pending test results (1 day).
- At Silver Lake Beach (Warner Town Beach), an aerator was installed in 2023; however, was not found to be helpful. Geese, high temperatures, human presence, and water level can facilitate contamination or influence the flourishing of cyanobacteria.
- Sections of the Concord - Lake Sunapee Rail Trail pass close to the Warner River and are subject to flooding in spots where the trail elevation is low. Culverts and/or pedestrian bridges might be susceptible, but most are above the floodplain. Developed and maintained by the Friends of the CLSRT.
- After an event, a FirstNet AT&T cell-on-wheels van may be requested by the Police Department.

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- INFO: Kearsarge Trail Snails provide thorough maintenance for bridges, signage, and drainage for their snowmobile trails

Future Development Table

- Future Development generates the same issues as previously noted (one way egress).
- When a large property is developed, there will be increased need for additional Town services and facilities.

Some 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 Warner. 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 Warner 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 models 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.
- Cost effectiveness of common mitigation strategies: like retrofitting or elevating structures.

Federal, State and local government agencies and the private sector can order HAZUS-MH free-of-charge from the FEMA Distribution Center. Warner 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. Such a time and monetary investment for small communities like Warner is not feasible. 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**.

CALCULATIONS 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 **2024** is **1,980**. Using Warner’s MS-1 **2024** valuation data, **the total assessed value of all residential and non-residential structures ONLY in Warner (\$231,389,491) is the basis for loss estimation calculations. Land and utilities are not included here.**

Potential Building Dollar Losses by SFHA Flooding

Beginning with the **2019 Plan’s** base data, the value of parcels with potential buildings within the floodplain were updated using Warner’s online digital tax maps. The Preliminary **2023** DFIRM SFHAs were not used in this evaluation because they remain subject to revision. No geospatial analysis with the **2010** FEMA Digital Flood Insurance Rate Maps (DFIRMs) digital map was possible, but a manual examination had been undertaken to try to identify all 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 5.4** summarizes this data, identifying **30** primary buildings by address in the SFHA. **Land value, building contents value and infrastructure were not considered in these calculations.**

Table 5.4
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	20	\$2,760,161	\$138,008
Multi-family Homes	1	\$267,630	\$267,630
Manufactured Homes	0	\$0	\$0
Non-Residential Buildings	9	\$3,006,410	\$334,046
Totals	30	\$6,034,201	-----

Sources: Hazard Mitigation Plan 2019 with 2010 DFIRM data, updated with Town Assessing Data, 2024

In **Table 5.4**, within the Warner are **20** single family residential homes, **1** multi-family home and **9** non-residential building which may be situated within the **2010** Special Flood Hazard Areas (SFHAs). Using the

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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

Town’s estimated number of **2020** Census housing unit count (**1,360**), about **1.5%** of Warner’s residences seem to be located in a floodplain area. The average replacement value is **\$138k** for a single-family home or **\$334k** 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 **\$6.0m**.

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, land destruction, and the contents of structures are not included in these building damage estimates.

Table 5.5 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 5.5
Total Buildings Dollar Damage Ranges in Special Flood Hazard Areas (SFHAs)

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	\$2,760,161	\$1,352,479	\$772,845	\$552,032
Multi-Family Homes	\$267,630	\$131,139	\$74,936	\$53,526
Manufactured Homes	\$0	\$0	\$0	\$0
Non-Residential Buildings	\$3,006,410	\$1,473,141	\$841,795	\$601,282

Sources: See **Table 5.4**; FEMA calculations used

If **all 20** single family homes were damaged by a **Two-Foot Flood (20% Damage)**, the dollar damage to the buildings could be **\$552k** while an **Eight-Foot Flood (49% Damage)** could cause **\$1.4m** in building damage. If **(all) 9** nonresidential building in the SFHA were damaged by a **Two-Foot Flood**, the dollar damage to the buildings only could be **\$602k** while an **Eight-Foot Flood** could cause **\$1.48m** in building damage. Dollar damage estimations vary according to the standard percentages of damage levels associated with flooding levels set by FEMA.

Table 5.6 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 5.6
Individual Building Dollar Damage Ranges in Special Flood Hazard Areas (SFHAs)

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	\$138,008	\$67,624	\$38,642	\$27,602
Multi-Family Homes	\$267,630	\$131,139	\$74,936	\$53,526
Manufactured Homes	\$0	\$0	\$0	\$0
Non-Residential Buildings	\$334,046	\$163,682	\$93,533	\$66,809

Sources: See Table 5.4; FEMA calculations used

One (1) single family home averages \$28k when damaged by a **Two-Foot Flood** while an **Eight-Foot Flood** could cause \$68k in building damages only. One (1) non-residential building in the SFHA is could have \$67k in building damages for a **Two-Foot Flood**, while experiencing \$164 in building only damages 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 2024 valuation data, the total assessed value of all residential and non-residential structures ONLY in Warner (\$231,389,491) is the basis for loss estimation calculations on 1,980 parcels. Land and utilities are not included here.**

Disaster damages are often illustrated in the following section utilizing a percentage range of town-wide building damage. At 1,360 housing units in Warner counted in the preliminary 2020 US Census, any type of disaster impacting 10% of Warner housing units would yield 136 damaged homes.

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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 community. 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 and forested lands may be among the most affected by drought. Many farm operations have been inventoried in Warner. Some people who rely on private well water have found their dug wells running dry in **2015-2016** and again between **2018-2022** and have needed to dig bedrock wells. Agricultural operations run the risk of high damage from **drought** which also brings economic consequences. In Warner, these areas include farm crops, maple tree crops, orchards, tree farms and hay fields, although most produce is grown in greenhouses. Conservation land forests in Town are also susceptible to loss and fire during **drought** conditions, as are the trees on Mount Kearsarge. Groundwater yield in Warner is a concern to the municipality and drought conditions would make yield worse.

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

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 Town Hall, historic Downtown area, cemetery headstones, bridges, dams, bridges, many historic homes, Simonds Elementary School, Pine Rock Manor, North Ridge Elderly Housing, remote neighborhoods, and densely populated locations are particularly at risk because of building sizes, building age, and/or their large numbers of people contained within or nearby. Important local highways NH 103, NH 127, I-89 and ramps and many other primary travel ways drive over major bridges and the **Warner River**.

Loss of infrastructure or other community buildings or highways could result in fewer services available to residents or reduce the ability to evacuate. Mount Kearsarge is a prominent geological feature in Warner and is home to hundreds of housing units. 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, Concord, Hopkinton (Contoocook), Henniker, Hillsborough, Salisbury, and Warner (Davisville) hosts frequent epicenters of deep earthquakes of low magnitude.

With a scenario range of **0.5%** to **1%** of buildings damaged throughout the Town, an **earthquake** or **landslide** could potentially cause up to **\$1.2m** to **\$2.3m** in building-only damage costs, 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. Warner has many vulnerable populations, including public schools, age restricted communities, 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, Downburst, Tornado, Storm 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. High wind events could be particularly fierce in areas at higher elevations or along transportation corridors such as NH 103, NH 127, I-89 and ramps and the **Warner River**. The Town typically clears trees along roads for each storm (wind, snow, ice, etc), working with Eversource to get electricity reconnected and with TDS for internet and telephone services.

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 **\$2.3m** (for more localized downburst, high winds and hail, or

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tornadoes) to **\$11.6m** (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 Warner are at specific risk, yet higher elevations, telecommunications towers, tall trees are vulnerable and 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 area, high density neighborhoods around the wildland urban fire interface areas, remote neighborhoods, and densely populated buildings. The Schools and Town facilities are necessary for governmental function and provision of basic services which could be interrupted during lightning events.

The Town's utilities, including powerlines, high tension powerlines, telecommunications towers, switching stations, telephone lines and broadband cable internet service, gas lines, water and wastewater facilities and their software control systems, as well as the municipal and School computer systems, are vulnerable to **lightning strike**. Tall buildings could be vulnerable regardless of the presence of lightning rods and grounding systems.

With a scenario of **0.5%** of buildings damaged throughout the Town, a **lightning strike** could potentially cause up to **\$1.2m** 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, with such a variety of potential issues, locations, and populations.

River Hazards

Ice jams on the **Warner River** or one of the major brooks could cause inland inundation **flooding**. Woody material causing **debris impacted infrastructure** may be more likely to impact bridges and dams than ice jams, especially any structurally deficient State or Town bridges. Several bridges or roads span across the river, Amey Brook, Bartlett Brook, Davis Brook, Schoodac Brook, and others. Small brooks culverts and drainage systems offer additional opportunity for ice jams, debris blockage, and more.

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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

This average figure of **\$1,000,000** can be used for one (1) local small bridge *replacement* in Warner 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 (10) of the 10 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 **\$275k** in *building* damage costs.

Winter Weather (Snow, Ice)

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 Warner 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. Accidents along I-89 and NH 103 are probable in winter weather. The most remote locations in Warner including the Mink Hills, wooded and forested sections vulnerable to tree fall including Kearsarge Mountain Road, and along roads are the primary concerns for winter hazards. Damage caused by this type of hazard varies according to wind velocity, snow accumulation, ice accretion, 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 **\$2.3m** to **\$11.6m** 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, antenna arrays, electrical grids, and technology. The Town, School, and public and private utility equipment, along with state and county technology, are vulnerable to **solar storms**, such as antennas and repeaters computer systems, emergency response dispatch systems, electricity, internet, satellite dishes, and software programming interruption that upkeeps essential functions. Although a potential natural hazard, dollar damage estimates are not feasible for solar storms and space weather. The telecommunications tower antenna array on Mount Kearsarge is the most critical and is situated at the highest elevation in Warner.

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

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locations and difficult to access by emergency vehicles. Subdivisions in remote hilltop locations and on private, cul-de-sac or one egress roads are especially vulnerable.

The public access conservation lands and their trails offer wonderful recreational opportunities for residents and visitors. 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. A wildfire on Mount Kearsarge or in the Mink Hills or within the wildland urban interface area of Downtown would represent the worst case scenarios.

With a scenario of **1.0%** of buildings damaged in the Town, a **wildfire** could potentially cause up to **\$2.3m** in *building*-only damage costs, 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 Warner 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 the Special Flood Hazard Areas (SFHAs) occurred with the first Flood Hazard Boundary Map on **August 9, 1974** (revised **May 8, 1977**) and the first Flood Insurance Study (FIS) on **June 4, 1987**. The first FIRMS were developed on **June 4, 1987**. Records indicate Warner has been a participant in the National Flood Insurance Program (NFIP) since **June 4, 1987**. Like the other Central NH region Merrimack County communities, no amended FIS was developed for the Town until over two decades later.

In the present day, Warner’s effective FIRMS are digital (DFIRMS) dated **April 19, 2010** as is the Merrimack County Flood Insurance Study (FIS) which includes Warner (community #330123); individual community FIS are no longer being developed. These **2010** newest documents were adopted by the Select Board, supersede all previous NFIP documentation, and are placed into the Town Zoning Ordinance. **Table 5.7** summarizes the historical background of the Town’s NFIP effective dates.

Table 5.7
NFIP History of Warner – Effective Dates

FIS Publication	Community #330123	Flood Insurance Study (FIS)	Flood Insurance Rate Maps (FIRMS)
Original Warner Town		June 4 1987	4-Jun-87
Current Merrimack County		19-Apr-10	19-Apr-10
Preliminary Merrimack County, NH	33013CV001B	12-Oct-22	12-Oct-22
Preliminary Merrimack County, NH	33013CV001C	25-May-23	25-May-23

Source: FEMA Merrimack County Flood Insurance Study (FIS) Table 9 & Bibliography, 2010; Preliminary 2022 & 2023 Merrimack County FIS

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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

The Preliminary **October 12, 2022** Merrimack County Flood Insurance Study (FIS) which focused on the eastern half of the County (**Merrimack River** watershed) contains some revised Digital Flood Rate Insurance Maps (DFIRMs) for Warner but it is not yet effective so it remains notable but not included within the table. Further, a new **May 25, 2023** Merrimack County FIS was produced for the western half of Merrimack County (**Contoocook River** watershed). A new version (F) of DFIRMs were developed for Warner. As of **July 1, 2024** neither FIS has been approved. See section on **DFIRMS** in this Chapter for more detailed information.

FLOOD INSURANCE STUDY
FEDERAL EMERGENCY MANAGEMENT AGENCY


VOLUME 1 OF 4

**MERRIMACK COUNTY,
NEW HAMPSHIRE**
(ALL JURISDICTIONS)

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
ALLENSTOWN, TOWN OF	330103	NORTHFIELD, TOWN OF	330118
ANDOVER, TOWN OF	330104	PENBROKE, TOWN OF	330119
BOSCAWEN, TOWN OF	330105	PITTSFIELD, TOWN OF	330120
BOW, TOWN OF	330107	SALISBURY, TOWN OF	330121
BRADFORD, TOWN OF	330106	SUTTON, TOWN OF	330122
CANTERBURY, TOWN OF	330108	WARNER, TOWN OF	330123
CHICHESTER, TOWN OF	330109	WEBSTER, TOWN OF	330236
CONCORD, CITY OF	330110	WILMOT, TOWN OF	330124
DANBURY, TOWN OF	330111		
DUNBARTON, TOWN OF	330202		
EPSOM, TOWN OF	330112		
FRANKLIN, CITY OF	330113		
HENNIKER, TOWN OF	330114		
HILL, TOWN OF	330214		
HOOKSETT, TOWN OF	330115		
HOPKINTON, TOWN OF	330116		
LOUDON, TOWN OF	330117		
NEW LONDON, TOWN OF	330230		
NEWBURY, TOWN OF	330228		

REVISED: **PRELIMINARY**
10/12/2022

FLOOD INSURANCE STUDY NUMBER
33013CV001B
Version Number 2.6.3.6



2022 Table 1: Listing of NFIP Jurisdictions with DFIRM Panels (Warner only)

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Warner, Town of	330123	01070003	33013C0140E, 33013C0260E, 33013C0266E, 33013C0267E, 33013C0268E, 33013C0269E, 33013C0280E, 33013C0285E, 33013C0286E, 33013C0287E, 33013C0288E, 33013C0289E, 33013C0293E, 33013C0294E, 33013C0295E, 33013C0313E, 33013C0480E, 33013C0480E, 33013C0485E, 33013C0501E	

FLOOD INSURANCE STUDY
FEDERAL EMERGENCY MANAGEMENT AGENCY


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CONCORD, CITY OF	330110	WILMOT, TOWN OF	330124
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FRANKLIN, CITY OF	330113		
HENNIKER, TOWN OF	330114		
HILL, TOWN OF	330214		
HOOKSETT, TOWN OF	330115		
HOPKINTON, TOWN OF	330116		
LOUDON, TOWN OF	330117		
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REVISED: **PRELIMINARY**
5/25/2023

FLOOD INSURANCE STUDY NUMBER
33013CV001C
Version Number 2.6.3.6



2023 Table 1: Listing of NFIP Jurisdictions with DFIRM Panels (Warner only)

Warner, Town of	330123	01070003	33013C0140F, 33013C0260F, 33013C0266F, 33013C0267F, 33013C0268F, 33013C0269F, 33013C0280F, 33013C0285F, 33013C0286F, 33013C0287F, 33013C0288F, 33013C0289F, 33013C0293F, 33013C0294F, 33013C0295F, 33013C0313F, 33013C0457F, 33013C0460F, 33013C0480F, 33013C0482F, 33013C0485F, 33013C0501F
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WARNER NFIP STATISTICS

In **Table 5.8** 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 the Town. Five snapshots in time, one from each of Warner’s previous **Hazard Mitigation Plans** and from the **2024 Plan** period display the number of NFIP policies in force and paid loss statistics between **Dec 2002 – Feb 2024**

Table 5.8
History of NFIP Policy and Paid Loss Statistics

Report Date	Number of Paid Losses Since 1987	Total Losses Paid Since 1987	Policies in Force	Insurance in Force	Type of Current NFIP Policies in Force			
					Single Family	2-4 Family	Other Residential	Non-Residential
Dec-02	6	\$2,255	9	\$1,900,700				
Jun-08	11	\$86,232	17	\$5,006,600				
Dec-12	11	\$86,232	20	\$5,342,900				
Sep-18	11	\$86,232	16	\$4,863,400				
Feb 2024	11	\$86,232	12	\$2,899,000	11		1	

Source: Warner Hazard Mitigation Plans; Floodsmart.gov HUDEX Policy and Loss by Geography Feb 2024; Type of PIF NH Office of Planning and Development Floodplain Management April 2023

From **Table 5.8**, prior to the severe flooding event period of **2005-2008**, **9** properties in Warner were initially covered by NFIP flood insurance in **Dec 2002**. A decade later, the highest number of policies protected **20** properties by **Dec 2012**. Most recently in **Feb 2024**, there are **12** policies in Town which provide **\$2.9m** in flood insurance coverage. Eleven (**11**) of the policies are single family while one (**1**) was categorized as other residential. Since **1987**, **11** paid losses totaling **\$86k** have been claimed in Warner to date.

Since the **2019 Plan**, the number of properties (policies) covered by flood insurance fell from **16** policies to **12** total policies in the community by **Feb 2024**, covering **\$7.3** million in damage. Normally, the number of policies would fluctuate as influenced by the number of current severe flooding events, recent changes in flood insurance regulation, the higher cost of insurance, uncertainty about exact floodplain location, mortgage requirements, the changing 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, this flood insurance coverage fluctuation might be expected.

Table 5.8 also illustrates that while the property owners anywhere in the entire Town of Warner are eligible to purchase flood insurance for their property, still **12** properties out of the **1,980** total parcels in the entire community are insured against flooding. As described previously, a total of **30** parcels with homes and non-residential buildings seem to be at least partially situated in the Special Flood Hazard Areas (SFHA).

Assuming the 12 NFIP policy properties are located within the 2010 SFHA floodplains, then 40% of buildings in the floodplain are insured against flooding.

All of Warner’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. Buildings and properties are especially vulnerable to **Warner River flooding**.

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 1978 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 1978.

As of **Apr 2023**, Warner had a total of **1** repetitive loss properties according to records kept by the Federal Emergency Management Agency and supplied by the NH Office of Planning and Development (NH OPD) in the NH Business and Energy Administration (NH BEA). This number has remained the same since the last **2019 Plan**. **Table 5.9** displays the general, known existing repetitive loss data in **2023**:

Table 5.9
Number of Repetitive Loss Properties

Building Type	Number of Repetitive Loss Properties as of 04-23
Single Family	1
Multi-Family	0
Non-Residential	0
Bldg Type Not Identified by NHOPD/ NHBEA	0
Total Properties	1

Source: NH Office of Planning and Development (NH OPD) on behalf of FEMA, April 2023

These RPL data records are confidential for the property-specific information they contain. No further information was provided per privacy laws. Repetitive losses are determined by any repetitive damage claims on those properties that hold flood insurance through the NFIP. Should repetitive losses occur, the

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Town could 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.

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.

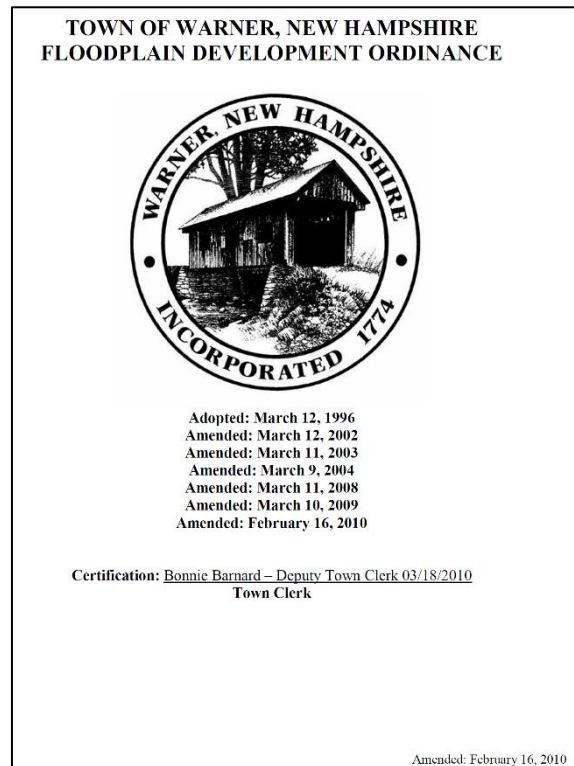
Community Assistance Visits in Warner

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.

Warner is classified as a Tier 1 community through its repetitive losses. 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.

In Sep 2023, NH Office of Planning and Development OPD provided “housekeeping” revisions to Warner’s Zoning Ordinance for Town approval as well as amendments for the Planning Board Site Plan Review Regulations to maintain NFIP compliance. The Subdivision Regulations were deemed compliant at that time. These revisions were identified for anticipated compliance with the Preliminary Merrimack County May 2023 FIS/DFIRMS.

Figure 5.A Latest Floodplain Development Ordinance



Source: Floodplain Zoning Ordinance Current as of March 2024; <https://warnernh.gov/publications>

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Although Warner is considered a Tier 1 repetitive loss community, there have been no recent significant flooding events. To ensure continuation of safe flood policies, after the new Flood Insurance Study (FIS) is affirmed by FEMA, a follow-up regulation/ ordinance review should be undertaken by NH OPD to review Building Department procedures and the contents of the Floodplain Ordinance, Subdivision Regulations and Site Plan Review Regulations to ensure continued compliance with NFIP policies prior to **2029**, when this Plan expires.

Floodplain Development District Ordinance

The Town of Warner has a Floodplain Development Ordinance that currently contains the required FEMA regulations to remain eligible for the NFIP. The Town of Warner approved their first Floodplain Ordinance at the **March 1996** Town Meeting after becoming a NFIP member in **June 1987**. The Zoning Ordinance does generally indicate all revision dates, but a few revision dates are noted according to prior **Hazard Mitigation Plans**.

An image of the current **2010** Floodplain Development Ordinance is displayed in **Figure 5.A**. The last major revision was **March 2010** to adopt the new **2010** Merrimack County Flood Insurance Study (FIS) and the accompanying **April 19, 2010** Digital Flood Insurance Rate Maps (DFIRMs) although smaller revisions items have been adopted over the years.

Mar 1996	First Floodplain Development Ordinance approved at Town Meeting.
Mar 2002	First amendments to the Floodplain Development Ordinance approved at Town Meeting.
Mar 2003, 2004, 2008, 2009	Amendments to the Floodplain Development Ordinance approved at Town Meeting.
Mar 2008	Updated the Floodplain Development Ordinance to comply with recent changes to the NFIP program, including allowing the Select Board to accept the new Flood maps without the Town Meeting approval process.
Feb-Mar 2010	Select Board 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. In March 2010, the Town Clerk certified the revisions to the amended Floodplain District Zoning Ordinance.
TBD	Pending: Preliminary October 2022 Floodplain Maps and Preliminary May 2023 Floodplain Maps

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NFIP Familiarity in Warner

According to NFIP policies, when an applicant files a request for a building permit in the floodplain, the applicant must include an elevation certificate 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. To reduce flood risks, the Building Inspector, volunteer Select Board and Planning Board members, and other designated 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 (NH HSEM) or the NH Office of Planning and Development (NH OPD) 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://training.fema.gov/is/searchis.aspx?search=NFIP>.

An essential step in mitigating flood damage is Town and property owner participation in the NFIP. Warner 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 to promote flood insurance to property owners in Town; recall **12** properties out of the **1,980** parcels in Warner 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.warnernh.gov.

Association of State Floodplain Managers

www.floods.org

NFIP SUBSTANTIAL DAMAGE/SUBSTANTIAL IMPROVEMENT

A goal of National Flood Insurance Program (NFIP's) is to reduce flood risk after a flood event occurs. The program does this through substantial damage/substantial improvement rules. Whenever a structure in the FEMA Special Flood Hazard Area (**1%** chance flood, or **100-year** floodplain) has been damaged by any origin (flood, fire, tornado, blizzard, etc.), the community is responsible for determining whether or not the cost of repairs to the structure is equal to or exceeds **50%** of the market value of the structure. If it is, then the entire structure must be brought into compliance with the current building code.

Substantial damage/substantial improvement determinations allow communities to require owners of structures built before the community joined the NFIP (before **Jun 1987** for Warner) to comply with current construction standards. Communities are responsible for making substantial damage/substantial improvement determinations and notifying property owners.

In Warner, the Building Inspector and Code Enforcement Officer staff are responsible for making substantial damage/substantial improvement determinations. The Town alternately uses its volunteer Select Board to assist.

Currently, there are adequately trained staff and volunteers available to undertake these determinations although additional training would be useful. The Building Inspector and Code Enforcement Officer are empowered to verify compliance with regulations and conditions delineated on project applications and project approvals. Consultation with engineers and surveyors will be sought as needed to verify on site conditions. The Building Inspector is empowered to investigate and inspect flood damage claims, which would then be forwarded to appropriate parties.

The process for determination of substantial damage/substantial improvement in Warner is as follows:

- As part of the building permit process, it is determined whether the property is in the floodplain. The Building Inspector determines the 100-year flood elevation using the most recent Floodplain Maps and in consultation with an engineer/surveyor as required. The Building Inspector shall review all building permit applications for new construction or substantial improvements to determine whether proposed building sites will be reasonably safe from flooding.
- The 100 year flood elevation is the basis used for requiring all new construction and substantial improvement to adhere to Warner's Floodplain Ordinance. Beyond specific reconstruction standards and use of appropriate materials, substantial improvement is defined as any combination of repairs, reconstruction, alteration or improvements to a structure in which the accumulative cost equals or exceeds 50% of the market value of the structure.

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- The Town of Warner Floodplain Development Ordinance is found at the Warner website: <https://warner.nh.us>. Select: Government/Documents/Ordinances, Policies, Publications/ Ordinance Documents/ Flood Plain Development Ordinance. The Warner Floodplain Development Ordinance has a comprehensive description of and guidelines for the determination of substantial damage and the requisites for reconstruction/ improvement. This strong ordinance is scheduled to have a review after the new Digital Flood Insurance Rate Maps and FIS are adopted.
- If the property is in the floodplain, using the plans submitted with the building permit, it is determined whether substantial damage determinations can be made or substantial improvements are proposed.
- The Building Inspector or consulting engineer will follow up with a letter or email to the applicant as needed. While e-mail is a primary source of information dissemination to individual property owners, final determinations are made in writing to the owner and any known representatives.
- The Town can refer to FEMA P-758 as a guide when making substantial damage/substantial improvement determinations. This is helpful when applying the standards of the Town’s Floodplain Development District.
- Before a flooding event, communicating flood risk before a flooding is an initiative Warner should embrace with notices and advice published on the Town website, in the Pillsbury Free Library Newsletter, the local newspaper and free press. The BOS will work in conjunction with the Emergency Management Committee to execute risk management advice for Warner residents.
- After a flood event, FEMA sends information to the Town Offices and the Emergency Management Committee responds with prescribed protocol and procedures that have been established. Warner has a large digital flashing sign used for making public information announcements. This sign is placed along the edge of Main Street at the heart of Town but is moveable if required.
- When requested, the Town initially communicates substantial damage/substantial improvement requirements to property owners by email.

Information including the ordinances and appeals are posted online available for the public to access at: <https://warnernh.gov/departments/planning/>

DIGITAL FLOOD INSURANCE RATE MAPS FROM FLOOD INSURANCE STUDY

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 (SFHA), waterbodies, and road washout locations are listed in detail below for Warner.

Special Flood Hazard Areas (SFHA)

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 October 2022, a new Merrimack County Preliminary Flood Insurance Study (FIS) was completed for the eastern half of Merrimack County with a focus on the Merrimack River sub-watersheds (Version E FIRM panels). In May 2023, the FIS was modified again to incorporate revisions to the western half of the county with a focus on the Contoocook River sub-watersheds (Version F FIRM panels). As of July 2024, both of these sets of revisions remain Preliminary. Both sets of draft Preliminary DFIRMs include current aerial photography. More specific locations of the SFHAs are displayed in a clearer color scheme, and new Zone A and Zone X areas are identified. New, specific BFEs measurements were plotted and the Regulated Floodway areas Zone AE are slightly adjusted.

Compared with the 2010 DFIRMS, there are more Special Flood Hazard Areas (SFHAs) in Warner within the new 2022/2023 Preliminary DFIRMs. Ten (10) DFIRMs (Version F) identifying floodplains in Warner (330123) measure BFEs along the Regulated Floodway of the Warner River: #0542, #0561, #0563, #0564, and #0677 display an updated Regulated Floodway zone. A dozen (12) other DFIRMS denote SFHAs without the Regulated floodway for local brooks and ponds. Collectively, these 22 DFIRMS include Zone AE floodways and BFEs (1% annual risk of flooding), Zone A (1% annual risk of flooding) or Zone X (0.2% annual risk of flooding) locations in Town. The DFIRMs with Floodways are highlighted blue in Table 5.10, and all DFIRMs are described.

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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

Table 5.10

Locations of Warner Special Flood Hazard Areas (SFHA) on May 2023 Preliminary DFIRMS

Panel NH 33013CV 001B Ver F	Flood Zones in Warner 330123	New PRELIM 05-23 BFEs	Water Body Areas in Floodplains	2010 Base Flood Elevations (BFEs)	Community of Warner Geographic Location
#0267	AE with Floodway, AE, X	525, 516, 513, 599, 481, 471, 460	Warner River Slaughter Brook	461, 508, 509, 510, 512, 519, 520, 521	Northwestern top edge abutting Sutton to the north. East Roby District, Retreat Road.
#0268	A, AE with Floodway, AE, X	643, 630, 615, 599, 595.	Simmons Pond, Unnamed Pond, Warner River	600, 612, 625, 628, 638	Western edge of Town abutting Bradford. Melvin Road Bridge, Melvin Mills Road, Bible Hill Lane, NH 103 West
#0269	A, AE with Floodway, AE, X	597, 581, 572, 559, 554, 540, 526	Unnamed Pond, Warner River, Slaughter Brook Davis Brook, Unnamed wetland.	521, 530, 545, 558, 562, 589	Western center of Town. NH 103 West, Melvin Road, Newmarket Road, Horne Street, Collins Road
#0286	AE with Floodway, AE, X	460, 453, 451, 450, 438, 429.	Warner River, wetlands, Davis Brook	424, 425, 443, 447, 449, 450, 454, 461	Western "ell" corner abutting Sutton. I-89, NH 103, Bean Road, Newmarket Road, Waterloo Street, Morse Loop Road, Willaby Colby Lane, Retreat Road
#0287	A, AE with Floodway, AE, X	427, 425, 423, 421, 420	Warner River, Stevens Brook, Willow Brook and Wetland	419, 4231, 422, 423, 424	Entire northern central section of Town. I-89, Kearsarge Mountain Road, Pattee Road Exit 9, West Main Street, North Road, Roslyn Avenue, Geneva Street, Kirtland Street, Willey Lane, Chemical Lane
#0289	A, AE with Floodway, AE, X	421, 418, 417	Warner River, Silver Pond, Willow Brook. Silver Brook, Recreation Pond	413, 414, 415, 417, 418	Central area of Warner. Rural with I-89 to north. Cunningham Pond Road, Gould Road, North Village Road, Mink Hill Lane, Flanders Lane, Waldron Hill Road, I-89, West Main Street, Mill Street, Chemical Lane
#0293	A, AE with Floodway, AE, X	411, 410, 409, 408, 407, 406	Warner River, Willow Brook, Bartlett Brook, Barclay Brook, Unnamed Wetlands, Unnamed Brooks	404, 405, 406, 405, 409, 410, 411	Central-eastern area of Warner. I-89 to north. Parade Ground Cemetery Road, NH 103, Denny Hill Road, Harriman Lane, West Joppa Road, Burnt Hill Road, Old Main Road, East Main Street, Schoodac Road, Loop Road, Kelly Hill Road, East Joppa Road, Loud Lane.
#0294	A, AE with Floodway, AE, X	399 (Schoodac). 398 (Tom Pond). 402, 399, 398, 397.	Warner River, Schoodac Brook, Tom Pond, Unnamed Wetlands, Ballard Brook	398, 398,397 (Schoodac). 395, 396, 397, 398, 399 (Warner). 396 (Tom Pond)	Eastern section of Town. I-89, NH 103, Burnt Hill Road, Schoodac Road, Brown Road, Poverty Plains Road, Red Chimney Road, Farrell Loop Road, Iron Kettle Road, Tom Pond Lane, Dimond Lane, Bog Road
#0313	A, AE with Floodway, AE, X	397, 395, 392, 370	Warner River, Unnamed Wetlands	371, 381, 387, 393, 395,	Eastern edge abutting Webster. I-89, Poverty Plains Road, NH 103, Dustin Road, Bog Road.
#0501	A, AE with Floodway, AE, X	375, 362.	Warner River, Unnamed Wetland	364	Southeastern corner of Warner, abutting Webster (west) and Hopkinton (south). I-89 Exit 7, Old Warner Road, NH 103 East, Park Avenue

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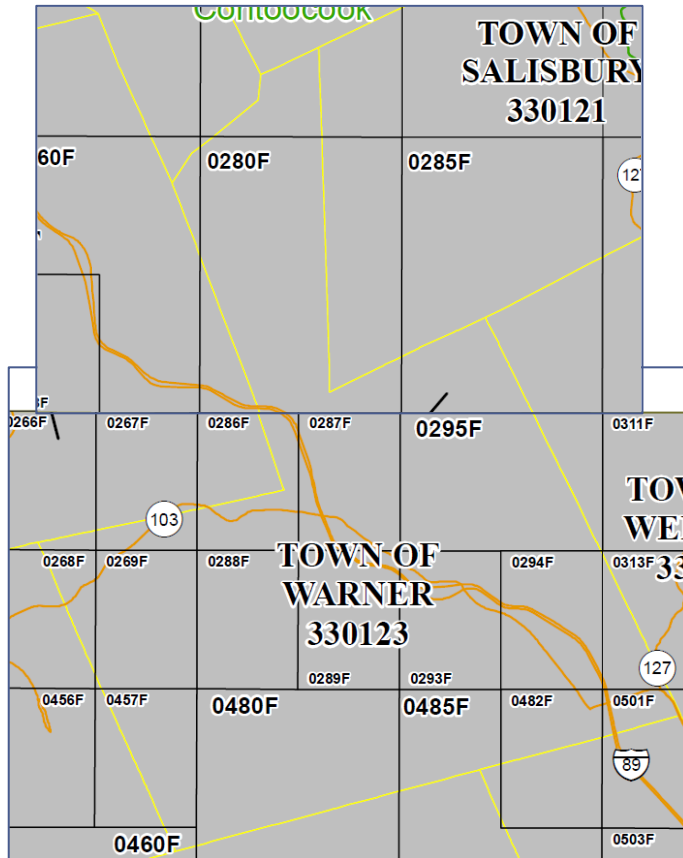
5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

Panel NH 33013CV 001B Ver F	Flood Zones in Warner 330123	New PRELIM 05-23 BFEs	Water Body Areas in Floodplains	2010 Base Flood Elevations (BFEs)	Community of Warner Geographic Location
#0295	A, X	399 (Schoodac)	Schoodac Brook, Frazier Brook, Bagley Pond, Unnamed Wetlands, Willow Brook, Meadow Pond	398 (Schoodac).	Eastern section of Town abutting Webster (east). Pumpkin Hill Road, Bartlett Loop, Couchtown Road, Connors Mill Road, Mason Hill Road, Lull Trace Lane, Schoodac Road, Brown Road.
#0485	A, X	N/A	Bear Pond, Ballard Brook	(396) Tom Pond	Western central edge of Town in the Mink Hills. Henniker & Hopkinton to the south. No roads on this section.
#0280	A, X	N/A	Meadow Brook and wetlands, Unnamed Brook and wetlands.	N/A	Northern "stem" of Warner. Mount Kearsarge (State Forest) and Mount Kearsarge Road.
#0285	A, X	N/A	Knight Meadow Brook, Unnamed Ponds and Wetlands, Bagley Pond, Mud Pond, Willow Brook.	N/A	Eastern corner of Town, abutting Salisbury (north) and Webster (east). Pumpkin Hill Road, Duck Pond Lane, Couchtown Road
#0266	A	N/A	Simmons Pond	N/A	Northwestern top edge abutting Sutton to the north and abutting Bradford to the east.
#0460	A, X	N/A	Day Pond, Unnamed wetland.	N/A	Southwestern corner of town, abutting Bradford (west) and Henniker (south). NH 114, Day Pond Road.
#0480	A, X		Amey Brook, Day Pond, Cunningham Pond, Unnamed Wetland, Warier Brook, Unnamed brooks	N/A	Southern edge of Warner abutting Henniker (south). NH 114, Hoyt Lane, Henniker Road, Daisy Hollow, Badger Road, Cunningham Pond Road, Colby Lane, Page Road.
#0140	N/A	N/A	None. Not in FP: Bradley Brook	N/A	Northern top of Warner. Mount Kearsarge (State Forest)
#0260	N/A	N/A	None.	N/A	Northwest corner of Warner. Mount Kearsarge (State Forest)
#0288	A, X	N/A	Davis Brook, Unnamed Wetlands	N/A Was not a panel	Howe Lane, Newmarket Road
#0457	A, X	N/A	Day Pond, Lake Massasecum edge, Unnamed wetlands	N/A Was not a panel	Western edge with Bradford at Lake Massasecum. Davis Road, Latvia Lane, Venta Lane, Riga Lane, NH 114/Massasecum Lake Road.
#0482	A, X	N/A	Ballard Brook, Pleasant Pond, Tom Pond, Unnamed wetlands	N/A Was not a panel	South-central edge of Warner bordering Hopkinton. NH 103, Hartshorne Lane, Pleasant Lane.

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Figure 5.B displays the relative location of each of the DFIRM panels in the community used in Table 5.10. This set of DFIRMs is excerpted from the Preliminary Merrimack County Flood Insurance Study (FIS) of May 2023. No additional DFIRM panels had been added since 2010. The graphic illustrates the numbering system of the DFIRMs and how they are not consecutive.

Figure 5.B
Warner DFIRM Panel Locations (330123), Preliminary FIS May 2023

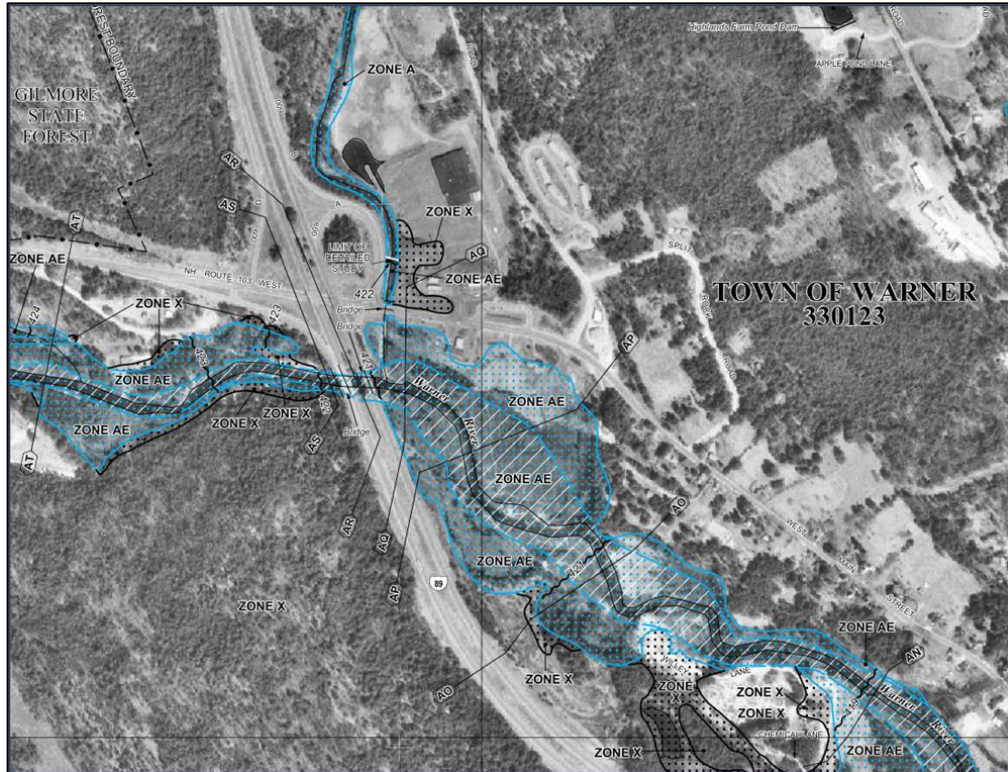


Sources: FEMA Map Center <https://msc.fema.gov/portal/home> (last accessed 06-24)
FEMA Flood Insurance Study Merrimack County, NH PRELIMINARY 05/25/2023, 33013CV001C
Version Number 2.6.3.6

A zoomed-in view in **Figure 5.C** of the Exit 9 area along the **Warner River** in DFIRM #287 from 2010 illustrates the current, compliant floodplain appearance, a significant upgrade from the previous series of paper maps. The 2010 maps were set on an aerial photography background that displays roads, buildings and forested areas.

Figure 5.C

Zoom View of Warner FEMA DFIRM Panel Location #0287 (2010)

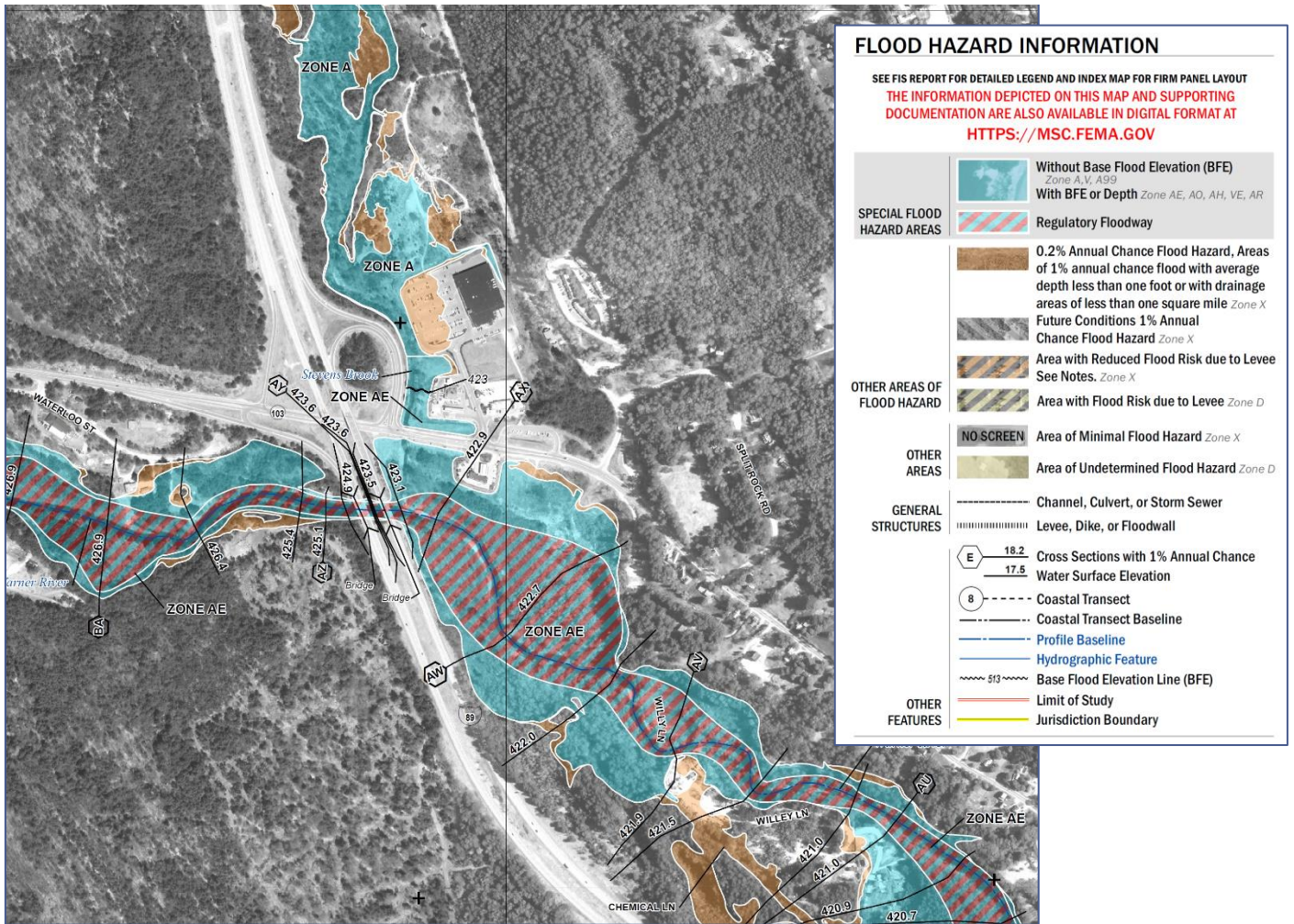


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5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

The Preliminary 2023 Panel map of the same location roughly compares with the 2010 DFIRM with better, and more current aerial imagery. The new DFIRM provides greater clarity and adjustments made to the Special Flood Hazard Areas (SFHAs). Small changes to Base Flood Elevations (BFEs) and the Warner River's Regulatory Floodway are also indicated with these revisions in Figure 5.D.

Figure 5.D
Zoom View of Warner 2023 FEMA Preliminary DFIRM Panel Location #0542F



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Community Vulnerability and Loss Resource Links:

- Town of Warner Building Inspection Application and Requirements
- <https://warnernh.gov/departments/building>
- Town of Warner Planning Ordinances and Maps
<https://warnernh.gov/departments/planning>
- FEMA Map Center
<https://msc.fema.gov/portal/home>
- FEMA Emergency Management Institute Training (NFIP)
<https://training.fema.gov/is/searchis.aspx?search=NFIP>
- Floodsmart.gov NFIP/FEMA Sponsored
<https://www.floodsmart.gov>
- National Association of Floodplain Managers
<https://www.floods.org>

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 **Warner Hazard Mitigation Plan Update 2024**.

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**.

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 **2019 Hazard Mitigation Plan**; and Future Improvements to the Capability.

FOUR CAPABILITY ASSESSMENT TABLES
<p>Planning and Regulatory</p> <ul style="list-style-type: none"> • Plans and Planning Documents • Building Codes, Permitting, Inspections • Land Use Ordinances, Regulations
<p>Administrative and Technical</p> <ul style="list-style-type: none"> • Administrative Programs, Policies, Mutual Aid Agreements, Partnerships, Operations, Procedures • Staff and Volunteers • Technical Skills, Training, Drills • Assets, Security, Resources (Specialized Equipment)
<p>Financial Resources</p> <ul style="list-style-type: none"> • Financial Programs or Funding Resource for Hazard Mitigation Projects • Future Financial Resources to Explore for Haz Mit Projects
<p>Education and Outreach</p> <ul style="list-style-type: none"> • Public Outreach Program, Educational Activity, Notifications

Town Capabilities and Review of Existing Plans

A summary of the items within the four Capability tables is provided here to offer a portrait of resources Warner 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**

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

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.

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 2024**.

DEPARTMENT ABBREVIATION KEY:

BI/CE	Building Inspector/ Code Enforcement
BOS	Board of Selectmen
CC	Conservation Commission
EM	Emergency Management
FD	Fire & Rescue Department
HO	Health Officer
LI	Pillsbury Free Library
LU	Land Use Department
PB	Planning Board
PD	Police Department
PRI	Private or Non-Town
PW	Public Works Department
SD	Warner School District
TA	Town Administration
WV	Warner Village Water District
	Primary Mitigation Department

PLANNING AND REGULATORY CAPABILITIES

The planning and regulatory capabilities displayed in **Table 6.1** 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 hazard mitigation goals, objectives, and/or Actions.

Table 6.1

Planning and Regulatory Capabilities

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 or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
WARNER PLANS AND PLANNING DOCUMENTS							
2020	CC Willow Brook Watershed Study 2007	Conservation Commission seeking easements along Willow Brook. Producing lists of flora and fauna Work with owners to protect the flora and fauna.	Willow Brook Watershed	High	Cons Comm	2020 Stream bank Conservation Easement entered into	Seek easements with landowners.
Feb 2024	CC Natural Resource Inventory 2018	Completed with help from Society for the Protection of NH Forests. Original in 2009.	Entire Town	High	Cons Comm	Working with CNHRPC to update the natural resources in all section of Warner.	Work with State to enact laws to protect natural resources on all areas of Warner.
Jun 2004	CC Mink Hills Plan	This plan seeks to focus conservation easement acquisition activities more effectively and to identify other resource management and protection measures for use by land owners and land managers. The plan also addresses the goal of increasing protection for historical resources, particularly stone structures that abound in this area, and other physical evidence of the Town’s early settlement patterns	Mink Hill section of Warner	Moderate	Cons Comm	2023 Completed the Mink Recreational Study separate of the Mink Hill Plan. 2024 Stewart ship committee formed to monitor conditions of trails and Class VI roads.	Working on new Conservation easement within the Mink Hills.

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6 CAPABILITY ASSESSMENT

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2021	CC Warner River Study for Brook Trout	Assessment of native brook trout in the Warner River watershed.	Warner River watershed	High	CC/NH F&G	2021 -Grant received to replace the culvert pipe on Red Chimney Rd. Culvert replacement 2024	Volunteers to be utilized to monitor water quality within the water shed. Area
2024	CC Town of Warner Conservation Plan	Plan to prioritize the Town’s natural protection of the natural resources.	Entire Town	High	CC	New. Plan is being used by Cons Comm and Planning Board to protect highest priority areas in Town.	Focus on protecting the natural resources as new development is brought to Warner.
June 2021	EM Emergency Operations Plan (EOP) 2021	Describes who’s responsible for what actions during an emergency, includes evacuation. Includes general warning systems, chain of command, lists of resources. Two phone lines in place designated for EOC. Warming center was utilized during power outages in 2023. United Church of Warner provided resources.	Entire Town	High	Emergency Management	EOP updated in 2021. New EOC space. Works Great. Partial activation for flooding in July 2023, winter storm in March 2023. Web EOC training in February 2024.	New EOC activation procedure in place. Train, hold drills, exercises. EOC activation drill planned for March 2024.
??? 2024	EM Hazard Mitigation Plan 2024	The updated 2024 Haz Mit Plan (from June 2019) will encompass all natural hazards from the 2018 State MHMP and human and tech hazards.	Entire Town	High	Emergency Mgt	Plan is used by the Planning Board & Depts for improvements (CIP, road projects, project planning, etc) Updated to new FEMA standards.	Departments utilize for CIP items on an annual basis. Continue to increase public awareness and involvement.
2023	PB Master Plan 2011	Advisory document that lays out the foundation for land use, Capital Improvements Plan based on vision, goals, and objectives expressed by Warner resident.	Entire Town	High	Planning Board	2023 - Reviewed Housing Chapter 4. Housing Advisory Committee formed.	Complete Housing Chapter. Other chapters not slated for updates as of Mar 2024.
Nov 2023	PB Capital Improvement	Strategic 6-year long term planning for improvement of Town	Entire Town	High	Planning Board	Updated annually to reflect projects	Update annually. Utilized by BOS

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 or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
	ts Program 2024-2029	equipment over \$25,000 Put funding away. Several Capital Reserve Funds established and utilized for projects identified in the CIP.				from departments and agencies. Public hearing held to approve by Planning Board	and Budget Committee for funding projects. CFR can be used to fund select hazard mitigation projects.
Dec 2023	PRI Sugar River Bank Preparedness Plan	Sugar River Bank plan is internally prepared – extensive employee contact information is obtained, and updated for all personnel. All branch are included in the Banks plan.	Entire Town and surrounding Communities	High	Sugar River Bank	All Branches update their succession plan annually. Newport and Warner Sugar River Bank locations have back-up generators.	Bank’s emergency plan updated on an annual basis. Internet service is required to effectively service bank’s customers. Test standby generator on a normal basis.
Oct 2023	PW Silver Lake Dam Plan	Low Hazard Dam. NH DES conducts inspections with written report. Funds in Highway budget for dam maintenance.	Silver Lake Dam	High	Public Works	Drained and Inspected by NHDES in 2023. Valves repaired in fall 2022. Preventative maintenance on an annual basis.	Train personnel in dam operations. Conduct maintenance as required.
Sep 2023	SD Emergency Management Plan for Simonds Elementary School	The EMP contains information for drills, what students, parents, and teachers will do in the event of an emergency. All schools in the Kearsarge Regional School District utilize the same plan with specific operating procedures for each school. Incident command System utilized.	Simonds Elementary School	High	School Principal	Oct 2023 Evac Drill conducted. Meeting with Town emergency responders during the school year.	Update plan address changes from the drill/exercises to make it safer for students.
WARNER BUILDING CODES, PERMITTING, INSPECTIONS							
2023	CE State Building Code (International	Contains a suite of residential, commercial, plumbing, electrical, mechanical, energy, and existing buildings.	Entire Town	High	Code Enforcement Officer	State adopted the new 2018 code in 2022. Town applies codes to	Apply the new 2018 codes. Inspect when necessary. When State

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 or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
	al Building Code IBC 2018)	Includes International Residential Code (IRC).				building construction.	adopts new codes, Town will too.
2023	CE State Life Safety Code 2018, Construction	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 with Fire Dept assistance	State adopted the new 2018 code in 2022. Town applies codes to construction	Apply the new 2018 codes. Inspect when necessary. When State adopts new codes, Town will too.
2024	FD NFPA 101 Life Safety Codes 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, Large Residential	High	Fire Department	Conducted life safety inspections. State adopted the new 2018 code in 2022. FD issued permits for 2018 code.	Apply the new 2018 codes. Inspect when necessary. When State adopts new codes, Town will too.
2023	FD NFPA 1 Fire Codes and Permitting	Section 1:12, and Table 1.12.7a specifically outline instances when permits are required	Select Structures	High	Fire Department	State adopted the new 2018 code in 2022. FD issued permits for 2018 code.	Apply the new 2018 codes. Inspect when necessary. When State adopts new codes, Town will too.
Feb 2024 Preliminary Maps May 2022	BOS FEMA Flood Insurance Rate Maps	Adopted by Town, used for River, streams, brooks. Necessary for compliance with the National Flood Insurance Program (NFIP).	Floodplains	High	BOS/ Bldg Dept Staff	Study created new preliminary Flood Maps for communities. Meetings held to advise public of new study.	Approve new maps and include in Town Ordinance. Reference maps in Town offices and note any substantial

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							deviations. Use the FEMA online flood maps for most current information.
2023	PW Bridge Inspections	Routine inspections of the 19 Town-owned bridges in Warner. The State conducts by-annual inspections of all bridges.	19 Town-owned Bridges	High	Public Works Dept	Funds added to Bridge CIP for repairs. Monitor the condition of bridges, particular attention to red listed bridges.	Silver Brook bridge placed on State Bridge Aid Program for 2026-27.
Dec 2023	PW Infrastructure Inspections	DPW conducts routine inspections and general maintenance of the Town's infrastructure.	Town Buildings	High	Public Works Dept	Completed routine inspections of Town buildings and roads.	Funds into operating budgets to address infrastructure repairs and upgrades into the Capital Improvements Program (CIP).
WARNER LAND USE ORDINANCES, TOWN ORDINANCES, REGULATIONS							
Feb 2024	BOS Street Numbering Ordinance	Establishes a procedure for administration and enforcement of uniform addressing system for residential, multi-family and commercial structures with the Town of Warner.	Entire Town	High	Selectmen Office/911 Coordinator	New numbers assigned for driveway permits. Update 911 book used by emergency responders.	Assign new numbers for driveways as needed. Coordinate with the State on 911 updates Receive updated Maps.
Mar 1995	BOS/EM Emergency Management Ordinance	The ordinance covers planning, training, operating emergency functions in town. Town Director updated the Selectmen as needed. Emergency Operations Plan developed and exercised.	Entire Town	High	Emergency Management	New EOP approved in 2021. Several exercises held. Storm events in 2022 and 2023.	Update Ordinance to reflect new changes to RSA's Hold training, exercises, update BOS on Emergency Management matters.
Jan 2019	BOS/ PD Parking Ordinance	Requires that vehicles not be parked on Town roads between the hours of midnight and 6:00 AM from Nov 15 thru Apr 15.	Entire Town	High	Selectmen, Police Dept	Enforcement of the Ordinance.	Revise as necessary to comply with State

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							Statue/Town Ordinance
March 2006	BOS/PW Solid Waste Ordinance	Disposal of refuse by commercial haulers and the residents of Warner. Mandatory Recycling of cardboard, paper, plastics, glass, metal, aluminum. Use of the Transfer Station.	Entire Town	Moderate	Selectmen Office/ DPW	Enforcement of Ordinance. Encourage recycling by businesses and residents.	Monitor enforcement of the Ordinance Public education on recycling by businesses and residents.
Mar 1995	EM Hazard Materials Cost and Recovery Ordinance	Ordinance covers spills, clean-up costs. Special fund established for replacement of equipment and training. Spillers are billed by the Town.	Entire Town	High	Fire Dept / Emergency Mgt	Restock material used for minor spills not billable.	Update to stay current with State changes as necessary. Hold training for F/D personnel.
March 2024	PB Zoning Ordinance	Zoning ordinance are adopted at Town Meetings to promote the health, safety and welfare of inhabitants, and preserve the values and charm now attached to the Town.	Entire Town	High	Planning Board	Reviewed by Board to reflect new updated to State Statue. Revision to Chapter XV to be voted on 2024 town meeting.	Review and update as necessary to comply with State Law.
2023	PB Subdivision Regulations	Rules and regulations to control the subdivision of land pursuant to RSA 674:35,36, New Hampshire Revised Statutes Annotated (RSA), 1983, as amended. As provided in said Laws, no subdivision, either public or private, shall be authorized in the Town until it has been submitted and approved by the Warner Planning Board.	New Subdivisions	High	Planning Board	2023 Discussion started to review and update. To be updated in 2024.	Review and revise as necessary to comply with State Statue.
Nov 2023	PB Site Plan Review Regulations	Site Plan Review Regulations and the site review procedure for nonresidential and multi-family development within the town and its environs as stated in RSA 674:44 is to provide for the safe and attractive development of the site	Entire Town	High	Planning Board	Updated in 2023 and used by PB when reviewing applications	Revise the Site Plan application process to streamline review

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		and guard against such conditions as would involve danger or injury to health, safety, or prosperity					
March 2010	PB Floodplain Development Ordinance	Regulations in this ordinance shall apply to all lands designated as special flood hazard areas by the Federal emergency Management Agency (FEMA) in its "Flood Insurance Study for Merrimack County, NH" dated Apr 19, 2010, or as amended, together with the associated Flood Insurance Rate Maps dated Apr 19, 2010 or as amended, which are declared to be a part of this ordinance and are hereby incorporated by reference.	All land designated in special flood hazard areas as defined by FEMA Flood Maps.	High	Planning Board/Building Inspector	Review Building permits and Site Plans submitted for compliance with Flood Hazard areas. 2024-Update Ordinance to reflect changes suggested by NH Office of Planning and Development.	Review and update as necessary to comply with FEMA. Enforce the regulations.
2023	PB Earth Excavation Regulations	Regulation to: provide for reasonable opportunities for excavation; minimize safety hazards which can be created by open excavations; ensure that the public health and welfare will be safeguarded; protect natural resources and the environment; and *** the aesthetic features of the Town. No earth materials in the Town shall be removed except in conformance with these regulations.	Entire Town	Moderate	Planning Board	Conducted site visits to monitor existing sites for compliance. Review and approve new excavation sites.	Monitor existing sites for compliance. Review and approve new excavation sites.
March 2014	PB Wireless Telecommunication Facility Ordinance	Ordinance is designed and intended to balance the interests of the residents of Warner, telecommunications providers, and telecomm customers in the siting of telecommunication facilities within the Town	Entire Town	High	Planning Board	Review applications for new towers and/or new carriers on existing towers.	Update Ordinance as necessary. Process application for new towers and/or carriers on existing towers.

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		of Warner, so as to ensure coordinated development of communications infrastructure while preserving the health, safety, and welfare of the town and its residents.					
2023	PB/PW Driveway Regulations	These regulations shall apply to the installation of all temporary and permanent access points onto the Town of Warner roads, including any changes to existing driveways beyond normal maintenance. All developments located on a state road must obtain a driveway permit from the NH Department of Transportation prior to the issuance of a certificate of occupancy for new construction or final acceptance for existing construction	Entire Town	Moderate	Public Works Director/Planning Board	PW Department issues permits for temporary & Permanent driveways. Inspected for compliance with regulations.	Ensure compliance with regulation. Continue to issue permits as requested.
Feb 2017	PB Soils Erosion and Sediment Control Plan Requirement (Subdivision & Site Plan)	Erosion Plan – major subdivisions and site plans must provide an engineered erosion & sedimentation control plan. Some individual house lots have bonds to cover their culverts.	Entire Town (New Developments)	Moderate	Planning Board	Slated to be reviewed and revised as necessary as part of Subdivision & Site Plan review. In 2024.	Review the regulation and update as necessary to fit Warner’s changing needs.
Feb 2017	PB Drainage and Grading Plan Requirement (Subdivision & Site Plan)	Engineered Drainage and Grading Plan ensures that storm drainage is infiltrated on site and does not cause erosion.	Entire Town (New Developments)	Moderate	Planning Board	Slated to be reviewed and revised as necessary as part of Subdivision & Site Plan review. In 2024.	Periodically update in response to emerging technology.
Feb 2017	PB Road Design and Construction Standards	Road design and construction provide specifications for building new & private Town roads and driveways. PB updated documents	Entire Town (New Developments)	High	Planning Board, with Public Works Dept	Slated to be reviewed and revised as necessary as part of Subdivision &	Review the regulation and update as necessary to fit Warner’s changing needs.

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	(Subdivision Regulations	recently. Engineer contracted for application to follow the standards				Site Plan review. In 2024.	
March 1995	PD Obstruction of Street Law	Adopted State of NH RSA 31:39, 47:11 Enforce free passage of public safety on public highways and sidewalks.	Entire Town	High	Police Dept	Review and revise as necessary.	Monitor and enforce as necessary. Consider updates.
Mar 1995	PD Open Container Ordinance	Open Container Law 95-4 prohibits any person to possess an open container or alcohol or consume an alcoholic beverage on public property or to possess an open container in a motor vehicle on public property.	Entire Town	High	Police Dept	Enforce the Ordinance.	Monitor and enforce as necessary. Consider updates.
Oct 1998	PD Animal Control Ordinance	Requires persons with animals to maintain control of their animals to ensure free passage and safety of pedestrians or vehicular traffic.	Entire Town	High	Police Dept	Enforced the Ordinance.	Revise as necessary to comply with State Statue and or Town Ordinance.
Feb 2024	WV Wellhead Protection Regulations	Drinking water protection areas as designated by State RSA. Designated area is posted.	Precinct Area	High	Warner Village Water District	Coordinated with Conservation Commission on Ground Water Protection Ordinance. Monitor proposed construction sites for possible contamination.	Monitor proposed construction etc around wellhead.

ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The administrative and technical capabilities in **Table 6.2** 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 6.2
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 or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
WARNER ADMINISTRATIVE PROGRAMS, POLICIES, MUTUAL AID AGREEMENTS, PARTNERSHIPS, OPERATIONS, PROCEDURES							
Sep 2015	BOS Class VI Road Policy	Must upgrade roads to bring up to Class V standards before building or logging. Director of Public Works will bring updates to the Selectmen as needed.	Class VI roads	High	Selectmen Office	Policy in place-References State RSA's. VI Roads.	Monitor and update policy as necessary to address current and potential issues.
Oct 2008	EM NIMS Adoption	Resolution to adopt National Incident Management System (NIMS) for all emergencies within the Town. Requires the use of ICS by all town departments/agencies involved in emergency Management activities.	Entire Town	High	Emergency Management	Used by all Depts engaged in emergency response-Exercise in 2022.	Conduct training of new EOC staff in NIMS. EOC drills and exercises to test procedures.
2023	EM MOU with Magdalen College	Memorandum of Understanding (MOU) with Magdalen College to utilize Administration building as a Warming Center/Shelter during emergencies.	Entire Town	High	Emergency Mgt	2023 College announced that it is closing in May 2024. Will need to acquire new MOU.	Review and update MOU as necessary. Conduct joint training and exercises to become better prepared to handle emergencies.
Jan 2024	EM Reverse 911 Policy for Use in Warner	NH911 changed to new provider -Genasys in Jan 2024. This replaces Code Red system for Reverse 911 program. New policy will allow communities to send out more information on emergency situations.	Entire Town	Moderate	Emergency Mgt	Training required to operate the new system. 1	Establish Town procedure for use by emergency responders. Public education on new system.

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 or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
Jan 2024	EM Capital Area Public Health Network Member	Regional calibration of communities in planning for and dealing with Public Health issues including the distribution of vaccines or pharmaceuticals for communicable disease, human, biological problems, exposure to chemicals, etc. Regional Shelter for communities.	Entire Town	High	Emergency Mgt	Attended meetings, training sessions and drills. Contact removed on. New rep hired - working to learn job.	Participate in planning for and dealing with public health issues.
March 2017	FD Constitution and By-Laws	Written Procedures by which the Fire Department operates. Committee review and submits changes to membership for vote of approval.	Entire Town	High	Fire Dept	They are always a work in progress.	Review and update and add new sections when relevant.
Jan 2023	FD Mutual Aid Agreement (MAA) with Capital Area Fire Mutual Aid Compact (CAFMAC)	Warner is a member of Capital Area Fire Mutual Aid Compact with 23 towns in the greater Concord area. Concord Fire Alarm is the dispatch center for CAFMAC. All towns required to have MAA drill in community at least every other year.	Capital Area, including Warner	High	Fire Dept	Mutual Aid drill conducted b-Annually. Drills in Warner 2023 and 2021.	Compact works to expansion of MAAs to other communities, and to enhance response and communications capabilities
Nov 2018	FD Mutual Aid Agreements (MAA) with Kearsarge Mutual Aid System (KMAS)	Warner is a member of Kearsarge Mutual Aid System with 13 towns in the greater Kearsarge area. New London Dispatch dispatches for several of the KMAS communities. Meetings are held By-monthly.	Kearsarge Mutual Aid System communities including Warner	High	Fire Dept	Participate in mutual aid drill and training.	Expansion of MAAs to other communities, to enhance response and communications capabilities
Sep 2009	FD Water Resource Plan (Dry Hydrants)	NCRC&D participated in the development in 2007. Have installed 7 dry hydrants up through 2012. Four were installed under Pre-Disaster Mitigation (PDM) FEMA Grant. Three installed with Town resources.	Entire Town	High	Fire Dept/ Emer Mgt	Plan has not been updated. Work to update to include hydrants installed.	Update plan to reflect installation of dry hydrants. Work to install new dry hydrants at identified locations
Oct 2023	FD Dry Hydrant Installation Program	Installed dry hydrants in accordance with rural fire protection program. FEMA grant to install 4 hydrants	Rural Areas: Waterloo Covered	High	Fire Dept	Test and inspect on an annual basis. Need	Seek new site for installation of new dry Install dry

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		from the plan: Waterloo Covered Bridge, Poverty Plains Road pump site, Mason Hill Road private pond, and Pleasant Pond near the Town beach in Sep 2009. Installed 3 hydrants from the plan: Melvin Road, at Warner Power on the Warner River, and at the Town's Silver Lake Dam in Sep 2012	Bridge, Poverty Plains Road, Mason Hill Road, Pleasant Pond			to rework 3 of the dry hydrants with new fittings.	hydrants, test, and inspect. Conduct maintenance as necessary.
2021	FD Call "Response Cards"	Call "Response Cards" indicates who responds to which emergencies or disasters within the Mutual Aid (MAA) Compact. Town has 8 primary zones and target areas for MAA towns coming in.	Entire Town	High	Fire Dept	Updated in 2021 to reflect changes in resources.	As Warner grows, reevaluate the effectiveness of the 8 protection zones and target areas.
Regular updates as of Jan 2024	HO State Procedures for Communication	They are reporting procedures and keep information chain open. State sends out emails regularly about reports on Salmonella, testing results, etc. for local community only.	Entire Town	Moderate	Health Officer	Works w/ State officials on health related matters.	Receive updates from the State and act accordingly with a file copy of record.
Jul 2017	PD Mutual Aid Agreement (MAA)	Mutual aid agreement with 11 towns and Merrimack County Sheriff's, in addition to State Police. Dispatch out of Merrimack County.	Entire Town	High	Police Dept	Conducted joint training with area towns on an annual basis. Assisted other Police Depts.	Address terrorism in the drills. Work on active shooter issues with businesses and schools. Review and update the Mutual Aid Agreements (new Chiefs).
2023	PD Standard Operating Procedures	Recently updated policies. Pursuit policies, death notifications, arrest procedures, etc. Very effective for a liability aspect, and a guideline for	Entire Town	High	Police Dept	Maintained, reviewed and revised outdated policies.	Review, update, and add new Standard Operating Procedures to

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		officers when gauging situations.					maintain compliance.
Feb 2024	PD Mountain Bike Patrol Unit	Program established 2013 with funding from grant Service added to department from 2013-2014.	Center of town and immediate surrounding location	High	Police Dept	Program was stopped in 2017 due to loss of staff.	Program will be re-established when sufficient personnel are on staff to implement.
July 2023	PB/PW/PD Traffic Counts	Road traffic counts are conducted on different town roads each year. Counts are used by DPW and the Planning Board. Police Dept has permanent radar signs on either side of Town on East and West Main Streets.	Town Class V Paved Roads	High	Planning Board, with Police Dept and Public Works	Annual traffic counts were conducted utilizing request from PD and DPW.	Conduct traffic counts on an annual basis on Town Roads. Road counts to be determined with input for DPW and PD.
2023	PW NH Public Works Mutual Aid Program for Highway Equipment	Member of the NH PW Mutual Aid Program. Equipment/Staff have been utilized for storm events.	Entire Town	High	Public Works Dept	Dues paid to participate in the Agreement annually.	Establish communication protocol with the Mutual Aid towns.
2023	PW Informal Winter Road (Plowing) Maintenance Policy	Plowing started at about 3” of snow. Each employee has their own route. 6 employees, plus PT people in winter. Director calls when it’s time to start route.	Entire Town	High	Public Works Dept	Draft plan being re-written to address new plow routes by DPW and Board of Selectmen.	New Plowing Policy in process by the DPW & Board of Selectmen.
2023	PW Standard Operating Guidelines	Have informal procedures which are not written. Employees typically act as required for any situation that arises.	Entire Town	High	Public Works Dept	Limited work to establish written guidelines	Work to establish written SOG’s.
2023	PW Procedures to Cutback Overgrown Limbs (Unwritten)	Removing overhanging (hazardous) limbs near power-lines will reduce that potential hazard in the Town. PW communicates with Eversource who has a system to evaluate annually to make sure that branches are cut back from power lines to reduce the	Roadways	High	Public Works Dept	Started work on a written tree policy to address roadside management of trees/brush within the	Draft written policy to address whole process utilizing best management practices for roadside tree trimming.

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		potential hazards from wind. PW follows RSAs for cutting trees along roadside.				Right of Way.	
Jan 2024	SD Remote Learning Days for Children Unable to Attend Due to Hazard Event	The School developed a Remote Learning Plan information packet if children cannot attend school for a period of time. This successful program is recurring each year.	Simonds Elementary School	High	School Principal	Teachers revised BB curriculum and added on-line capability.	Improve on-line remote tools and system for the Remote Days.
Sep 2023	SD School Evacuation and Active Shooter Procedures	Evacuations and Active Shooter/Intruders scenarios are drilled within the Simonds Elementary School.	Simonds School evacuate to Municipal Building	HIGH	School Principal /Town Responders.	Oct 2023 monthly with school.	Review and enhance procedures to address the changing potential hazards within the school systems, and work with Town entities for overall cooperation.
Jul 2023	WV Written Agreement with Concord for Septage Hauling	Agreement with Concord to ensure that when the Town sludge holding tanks start to get full, the excess sludge is transported to Concord Treatment Plant.	Precinct	High	Warner Village Water District	Agreement Updated annually.	Update the agreement with Concord to keep current with Town's needs.
Oct 2023	WV Fire Hydrant Flushing Programs	Water department flushes all hydrant within the District. Normally done twice per year.	Water Precinct	High	Warner Village Water District	2023 Flushed all hydrants..	Flushing twice per year usually in May and October.
2023	Warner River Local Advisory Committee	NH River Management and protection Plan for the Warner River. Five communities are part of the Council.	Warner River	Low	Warner River Advisory Council	Warner members sit on Council to help to advise.	Establish By-Laws and River Management Plan. Stream flow study.

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WARNER TECHNICAL SKILLS, TRAINING, AND DRILLS							
Oct 2023	BOS Attendance at Seminars by Town Officials	Seminars by NH HSEM, LGC, others attended by Selectmen, Health Officer, Planning Board. Regularly attend as workshops come up.	Entire Town	High	Town Admin	Several town officials have attended seminars/workshops on an annual basis.	Make more time and money available to more officials/staff to attend.
Feb 2024	EM Emergency Management Training	Applicable emergency management training to all town departments and EOC Staff. Conducted ICS, NIMS, EOC Workshops, and WEBEOC training.	Entire Town	High	Emergency Mgt	Attend training sessions as available thru the State to include on-line courses.	Expand trainings to include new EOC staff and Board of Selectman.
Mar 2024	EM Town Wide Drills	Work with NHHSEM to facilitate exercises. Conducted several exercises in the past, including a table-top exercise and a drill with the Amateur Radio team.	Entire Town	High	Emergency Mgt	Drills in 2021 Winter Storm T/T exercise, 2023drill with Amateur Radio.	Publicize the drill more to let the public know that the EM team is conducting drills and exercises. been conducted. .
2023	FD Central NH Haz Mat Team Drills and Training	Available through Capital Area Mutual Aid. The Warner FD department has trained with the team at the awareness level which coordinates with the hazardous materials team.	Entire Town	High	Fire Dept	Participated in a Mutual Aid haz mat drill.	Participate in training with the team and holding Department training on haz materials.
2023	FD Fire Academy Training	Fire Department personnel have undergone required training thru the Fire Academy.	Entire Town	High	Fire Dept	2023 Members attended training provided by the Fire Academy.	Members to attend trainings as scheduled and available courses to attend.
Mar 2024	FD In-Service Training	Monthly training held on equipment procedures, water rescue, mass casualty, etc. Dept has 37 volunteers, some are cross-trained for EMS also.	Entire Town	High	Fire Dept	2024 Monthly training on all areas of firefighting.	In-service training in addition to specialized training at the state fire academy.

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							Investigate outside training sources as available.
Feb 2024	FD CPR/First Aid Training	CPR and First Aid training for Fire and Rescue members. Goal is to have all members certified in CPR/First Aid.	Entire Town	High	Fire Dept	Hold refresher training.	Receive training and certificate.
Dec 2018	PD Three Levels of Police Training	Progressive training is available to officers: first, Police Academy basic training, second, field training program by three field training officers who document training to Town. Third, annual in-service training: including but not limited to computer crime, taser, urban rifle, accident reconstruction.	Entire Town	High	Police Dept	Added taser training.	Train officers to maintain professional qualifications and certifications.
Feb 2024	PD CPR/First Aid Training	CPR and First Aid training for Police Dept. personnel	Entire Town	High	Police Dept	Participate in the CPR and first aid trainings	Receive training and possess new certificate.
2023	PW Dept of Public Works Training	Employees attend training for equipment, winter maintenance at LGC. At UNH T2, try to send some employees to training, to include: culvert installation, roadway maintenance, gravel maintenance, etc.	Entire Town	High	Public Works	DPW personnel attended culvert Maintainer course in 2023.	Search out and attend courses so that employees can be more proficient at their job.
Sep 2017	PW Training, Road Agent Certified as a Master Roads Scholar	This is a consistent effort to improve service delivery through education acquired by participating in online training activities and program offered through the LGC.	Entire Town	High	Public Works Dept	Department personnel have attended training sessions. Working toward Road Scholar Certification	Work to send Department staff for training as available.
Oct 2023	SD Pre-Determined Evacuation Sites (2)	First Simonds School evacuation site: United Church, 43 E Main St (have arranged for bus pickup at that site). Second off-site	Simonds Elementary School	High	School Principal	Offsite evacuation drill to the Church in Oct 2023.	Hold evacuation exercise annually.

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		evacuation Bussed to Middle School.				Student release part of this drill	
Jul 2023	SD Bus Company Contract for Student and Driver Safety	Contract with Transportation and Student company. New bus has camera and radios to enhance student and driver safety, communication, and discipline. Student transportation of America 603-938-6464	Simonds Elementary School	High	School Principal	Coordinated regarding routes and discipline	Monitor the new routes implemented to shorten travel time
Feb 2024	SD Ten Drills Per Year	Drills include fire, hazardous materials, off-site evacuation, lock down drill, Shelter in place, etc. Two people sweep for wheelchairs or walkers after all children have left the building. Includes metal fire escapes which are used at least once a year.	Simonds Elementary School	High	Kearsarge Regional SAU 65	School conducts drill monthly	School and District Safety Committee revise and update drill annually.
Aug 2023	SD Crisis Prevention Institute (CPI) Training	This is District wide training for school staff in crisis prevention.	Simonds Elementary School	High	Kearsarge Regional SAU 65	All teachers working with students in crisis are CPI trained.	Train all school staff in CPI
Jan 2024	SD CPR/ First Aid	School District provides training for staff in CPR and First Aid. Only a few staff members are certified in CPR/ First Aid	Simonds Elementary School	Low	Kearsarge Regional SAU 65	Staff have recertified	Certify more staff members in CPR/ First Aid
WARNER ASSETS, SECURITY, AND RESOURCES (SPECIALIZED EQUIPMENT)							
Oct 2023	EM Base Radio for EOC	A base radio serves the primary EOC at the Fire Station, funded through the State in Dec 2010.	Entire Town	High	Emergency Mgt	2023 Base radio re-programmed to stay current with Statewide Radio programing.	Coordinate with AERES for agreement to operate amateur radio in New EOC.
Feb 2024	EM Emergency Operations Center	Primary operations center located at Fire Station, 148 West Main Street. EOC has a dedicated office with	Fire Station, West Main	High	Emergency Mgt	EOC Partial activation in 2023 for flooding	Replace computers with new. EMPG grant

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		desks, computers, phone lines, two-way radio system, TVs and white boards. Building is equipped with Fire Alarm and Sprinkler System.				event in July. AREAS drill in 2023 utilizing EOC. New camera system & buzz-in system installed in 2023 under EMPG grant.	for new computers in process 2024. Conduct drill and exercises to continue to train EOC staff.
Jan 2024	EM Warming Center Shelter	Cooling/Warming center designated at Town Hall. MOU w/United Church of Warner & Magdalen College. Coordinate shelter ops with CAPHN.	Town Hall. Magdalen College	High	Emergency Mgt	Warning center opened in 2023 during power outage.	Conduct training and drill on shelter operations.
Feb 2024	EM Back-up Generator for Town Hall	Town Hall is equipped with backup generator and auto Transfer Switch for building. EMPG funded.	Town Hall	High	Emergency Mgt	Tested weekly under load. Contract for normal maintenance .	Weekly testing and perform maintenance as required.
2022	EM List of Priority Buildings for Electrical Power Restoration	Coordinate with Eversource for power restoration of Priority Buildings such as the Schools, Fire Department, Police Department, Town Hall. Also consider the Exit 9 area.	Town Buildings, Main Street, Exit 9 Area	High	Emergency Mgt	2022- removed old fire station from priority list	Update Priority list as necessary.
2019	EM Equipment Vendors List	The list of private contractors/ vendors and the equipment they own can be tapped as a resource during disasters and emergencies to fill in where labor and equipment is necessary but is in short supply.	Entire Town	Moderate	Emergency Mngt.	List needs to be updated as part of the EOP Resource list. Last updated in 2019	Work with Departments/ Agencies to update the list as necessary.
Dec 2023	FD Station Backup Generator	Generator is a 50 KW fixed unit fueled by propane. Automatic Transfer Switch provides backup power for interrupted service to Fire Station which is the Town's primary Emergency Operations Center	Entire Town	High	Fire Dept	Gen rebuilt in 2023. Tested on a weekly basis.	Conduct routine maintenance. Weekly test on generator.

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2023	FD Radio Communication	FD has multi-channel radios in Radio Room and in vehicles and portables on digital system. State programming grant to update channels to reflect new Statewide Programming Guidelines	Entire Town	High	Fire Dept	Replaced portables radios in 2020 thru 2023. All radios are APCO 25 complaint	Replace existing portables with new units as grants/local budget permits.
2023	FD OHRV & Four Wheeler	Equipment includes one OHRV and Four-Wheeler. Having these vehicles provides better access which may not have been possible and a higher level of life safety. The OHRV is equipped w/two-way radio and tracks for seasonal use. Both units are on trailers. The FD also has a light trailer.	Entire Town	High	Fire Dept	Training held annually for FD personnel.	Conduct training sessions and maintenance as required.
Feb 2024	LI Informal Warming/Cooling Shelter	Seating capacity: Lower level (wheelchair accessible) meeting room 40, children's room 34, Upper level 35-40 seats, other floor space as needed between bookstacks. AED available, Town Water and sewer, 2 bathrooms, kitchenette, and two other sinks plus custodial sink, toys, books. Installed a generator in 2009. Oil heat available on generator.	Pillsbury Free Library	High	Library Director	Can now send messages via Constant Contact to 1,030 subscribers. Upgraded A/C in 2022 throughout Library.	Could function as a secondary or alternative communications center - Main Street location, Internet, generator, computers, projector, OWLs, Fiber TV
Feb 2024	PD Generator-Backup Power	15KW generator with 1,000 gallon propane tank in the Police Station. Now equipped with Auto Transfer Switch. Had been transferred from DPW after their upgrade to Police Dept so the entire building can be operational.	Entire Town	High	Police Dept	Provided power to entire building. Exercised on a weekly basis	Conduct maintenance on the generator and system. Test run under full load to ensure capability.
Jun 2023	PD Radios	Purchased in 2020 but had to wait 2 years to receive. New base radio, 2 remote units in patrolman's room and prisoner processing area. Have 4 older carry	Police Department	High	Police Department	New radios purchased in June 2023.	Reprogram as required to access the new channel banks or add new channel.

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		portable radios, and 3 mobile units in cars.					Replace portable and mobile units within the next 5 years.
Feb 2024	PW Department Backup Generator	39 KW generator installed with auto transfer switch. This unit will power the whole building	Public Works Dept	High	Public Works	Tested weekly under load. Required maintenance performed on a regular basis..	Test weekly and conduct maintenance on the generator.
2023	PW Radios for Highway Department with Town Frequency	Highway Department reworked mobile radios and establish common frequencies with Town Departments to be more able to respond to emergencies.	Entire Town	High	Public Works	FCC License updated in 2022 for new 10 year period. Two new radios installed in vehicles.	Conduct radio test with EOC to verify communication. Replace radios including portables to increase capability of department.
Feb 2024	SD Buzz-in Locked Door for Elementary School	Elementary school has a buzz-in lock door. Card swipe system installed. Personnel will require a card to enter the school.	Simonds Elementary School	High	School Principal	Ensured all emergency responders have a swipe card for quick access	Increase the number of doors with card swipe system
2022	SD Security Camera and New Entrance	Security measures -new HD security camera installed at all entrances.	Simonds Elementary School	Medium	Kearsarge Regional SAU 65	Security camera installed at all entrances. Access shared with Warner PD.	Safe Grant to install additional cameras behind the building.
Sep 2023	SD Teacher Emergency Supply Backpacks	Emergency supplies like rubber gloves, flashlight, toilet paper, clipboard, space blankets for every child, granola bars, scissors, first aid kit, duct tape, class lists, etc in every classroom. Master backpack with emergency information for every child, incident command vest in office.	Simonds Elementary School	High	School Principal	2023 Outdated and expired supplies were replaced.	Review needed supplies on an annual basis. Training on backpack usage

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Mar 2024	WV Royce Well Generator	Pump site is equipped with a backup generator to power the water pumps. Generator comes on automatic.	Water Precinct Areas	High	Warner Village Water District	generator exercised weekly. Routine maintenance as required.	Conduct weekly testing and maintenance as required
2022	WV Two (2) Water Supply Wells	Water Precinct currently has 2 public water wells. Looking to establish a third water source, away from the Warner River, to have 3 wells service the area.	Water Precinct Areas	High	Warner Village Water District	Both wells rehabbed in 2022. Water supply adequate for precinct users.	Relocate a third water source away from the River.
Jul 2023	WV Two (2) Water Tanks for Backup Water Source	Water Precinct capacity of two tanks is nearly 300,000 gallons. Serves as backup water source and for fire protection.	Water Precinct Areas	High	Warner Village Water District	Tanks inspected in 2023	Inspect annually and clean as required.
Feb 2024	WV Sewage Treatment Plant Backup Generator	60 KW backup generator with transfer switch installed for automatic operation.	Waste Water Treatment Plant	High	Warner Village Water District	Generator tested weekly and maintenance as required	Conduct weekly test and perform maintenance as required

FINANCIAL CAPABILITIES

The financial resources in **Table 6.3** 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) 2023 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 6.3
Financial Capabilities

Latest Adoption or Version Date	Capability Assessment: Financial	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
WARNER FINANCIAL PROGRAM OR FUNDING RESOURCE FOR HAZARD MITIGATION PROJECTS							
Jul 2023	BOS FEMA Public Assistance Grants (Disaster Recovery Costs)	Public Assistance Categories A-G may become available when disasters are declared if the community has with an unexpired approved Haz Mit Plan. <i>Communities utilize the FEMA funding to help recover from declared disasters.</i>	Entire Town	High	Town Admin with Emergency Mgt	Used for Cat A Debris Removal. Used for Cat C- Road Repairs. Preliminary damage assessment for storm in 2023. County did not meet funding.	Utilize the FEMA PA program to help with disaster costs
2014	BOS FEMA Pre-Disaster Grants	Program allows communities to apply for funds for Hazard Mitigation project. Projects are identified in the Hazard Mitigation Plan.	Entire Town	Moderate	Selectmen, Emergency Mgt	Used to install 4 dry hydrants	Utilize the FEMA Pre-Disaster Grant Program for projects that help reduce disaster costs
Nov 2023	PB Capital Improvements Program 2024-2029 Project Funding	Program reviewed on an annual basis. Sets aside funds for large equipment/ projects.	Entire Town	High	Planning Board	Funds have been added into Capital Reserve Fund for bridge improvements	CIP could include expensive or long-term hazard mitigation projects

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WARNER FUTURE FINANCIAL RESOURCES TO EXPLORE FOR HAZ MIT PROJECTS							
March 2024	BOS Town Operating Budget	Budget can contain funding for outreach programs, mitigation projects. Town Meeting will determine figure for Operating Budget-BOS can move funds from one line to another as necessary.	Entire Town	High	Town Admin. All department budgets	2024 Operating budget includes funding for selected road projects. CIP funding included for projects.	Town Warrants will include funding for selected Haz Mit project.
2023	BOS/PW NH Department of Transportation (NH DOT) Bridge Program	The bridge program is an 80/20 funding opportunity, with only 20% required by towns. Using the CIP Capital Reserve Funds, communities can set aside money until Sate aid funds are available for local bridge projects.	Local Bridges in Warner	Moderate	Town Admin, Public Works Dept	Used to replace the Bartlett Loop Bridge. Application submitted to repair/replace bridge on North village Rd.	Identify Bridges and submit applications.
March 2000	CC Current Use Penalty-Conservation Easements	Tax penalty for land taken out of current use goes to special fund for Conservation Easement	Entire Town	High	Cons Comm	Funds collected are used to conserve farmland, Mink Hill forest and stream frontage. Worked with local land trusts.	Seek easements to conserve land and resources within Warner. Consider land along the Warner River for additional flood capacity and recreation.
2023	EM Emergency Management Operating Budget	Budget for operations of the EOC and can contain funding for outreach programs, mitigation projects. Can also be used for match under EMPG grants.	Entire Town	High	Emergency Mgt	EMPG grant for cameras installed outside Fire Station. Funds used to install buzz-in system at rear entry door to Station.	EMPG Rant pending for new computers to be used at the EOC. Use Emergency Management Operating Budget to finance future hazard mitigation improvements

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Nov 2023	PB Capital Improvements Program 2024-2029 Project Funding	Sets aside funds for large equipment/projects.	Entire Town	High	Planning Board	Reviewed annually and updated to reflect new projects.	CIP could include expensive or long-term hazard mitigation projects

Source: Warner Hazard Mitigation Committee

EDUCATION AND OUTREACH CAPABILITIES

In **Table 6.4**, 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 6.4

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 or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
WARNER PUBLIC OUTREACH PROGRAM, EDUCATIONAL ACTIVITY, NOTIFICATIONS							
Feb 2024	BOS Public Notification Procedure (EOP)	Radio stations to notify public in the event of emergency are 99.1 and 102.3.	Entire Town	Moderate	Board of Selectmen	Has not yet been used. Annual reminder to residents of stations.	Place radio information on the Town's website and Town Report.
Feb 2024	EM Warner Alerts on Town Website	Emergency management and Board of Selectmen can access the Warner Alert emergency section of the Town's website. An email goes out to people who have signed up, thought to be a low number. Sign up is included in the Library Newsletter.	Entire Town (people who subscribe)	Low	Emergency Mgt	Last used for July 2023 for road closures.	Increase the number of subscribers by active promotion. Include option for text notification.
Jan 2024	EM (New) Reverse 911 Notification System for Use in Warner	New State system (Genasys) enacted Jan 2024. Access to new reverse 911 will allow Town Officials to send emergency notification to anyone in Warner using a mapping system as identified by EM for landlines only. Cell phones need sign up. Replaces State's CodeRed.	Entire Town	Moderate	Emergency Mgt	New State system (Genasys) enacted Jan 2024 for enlisted landline phones. Warner had not used service prior.	Attend training in use of system. Encourage cell phone users to sign up for Genasys – include how on Town website (sign up @ www.readynh.gov). Consider landline benefits as an emergency service.
Feb 2024	EM	General info on natural hazards and personal	Entire Town	Moderate	Emergency Mgt	Placed and/or	Update Town website to allow

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	Public Outreach for General Hazards	preparedness available in Library, Town Hall, and Town’s website.				updated information about preparing for emergencies in Town Report and on Town website.	more information be available to post.
Feb 2024	EM Functional/ Medical Needs Survey for Residents	Functional Needs Survey is available to town residents for voluntary sign-up on the Town website. The Functional/Medical Needs survey results are not available to emergency responders. Confidentiality is problematic unless there’s a power of attorney to use and share the information. For wellness checks or in case of disasters.	Entire Town	Low	Emergency Mgt	Presently, not acted upon because of confidentiality difficulties. Needs more work.	Review the survey and how it is used and whether the information can continue to be collected. A medical release of some sort would be needed. Information would need to be securely kept, managed, and sharable.
Feb 2024	EM EAS (Emergency Alert System)	In place in the state, working on regionally. Not a town function, Television, radio, via national alert service. National Weather Service alerts go out.	Entire Town	High	National Weather Service, NH HSEM	Has been used for severe weather alerts to warn public on cell phones. General notifications go out to weather radios,TVs.	Inform the public of EAS and its functions on the Town website.
Oct 2023	FD Public Outreach	FD holds Open House thru the summer on Sundays, participate in community functions, Fire Prevention Week, tours for school children, standby at Fall Foliage Festival annually, holds periodic safety days with Police Dept at Simonds	Entire Town	High	Fire Dept	Oct Fire Prevention week at School. --Held Open House May-Aug on Sundays. --Standby at Fall Foliage	Update Department page on Town website and Facebook more frequently with new activities.

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 or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
		Elementary School (had been consistent up to 2020), uses Facebook to announce activities.				Festival annually. --Held periodic safety days with Police Dept at Simonds Elementary School (to 2020). -Used Facebook to announce activities.	
May 2020- Feb 2024	LI Notifications and Newsletters	Emails Warner Community Newsletter created and sent by the Pillsbury Free Library staff weekly, includes informational notices provided by EM and other departments as requested. The Library has Facebook, Instagram and X (former Twitter) accounts that could be used, bulletin boards and display space.	1025 email Subscribers and 20 food pantry clients, 68% open rate from Pillsbury Free Library	High	EM and LI (other depts can send info to LI for inclusion)	Began during the COVID-19 pandemic, has grown to be a widely read source for local information.	Library Director could access Constant Contact account to send emergency info to subscribers if power /internet available.
Feb 2024	PD Drug Take Back Box and Protocol	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. Box on-site but can receive from people, log into evidence room, and obtain court order for incineration.	Police Station	High	Police Dept	Box installed 2020 in lobby, which is monitored by camera & accessible to the public during lobby open hours or by officer opening. Pick-up of drugs is monthly, box is used successfully.	Educate the public about the ability to safely dispose of prescription drugs – notice on Department page of Town website and Facebook page, can call ahead for an officer to open lobby.
Feb 2024	PD/SD LEAD	Law Enforcement Against Drugs (LEAD) – 10 week program	Simonds Elementary School	High	PD and Simonds	Switched over to LEAD (from DARE)	Promote the LEAD program and re-certify

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Town of Warner, NH Hazard Mitigation Plan Update 2024

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 or Progress Since Last Haz Mit Plan (2019) If none, how was it used?	Future Improvements to Capability (2025-2029) Desired or planned
	Program	annually with 5 th graders to interactive promote healthy relationships and student wellness. Improvement on the DARE program.				in 2023. Students and staff are pleased with new program.	instructors (Warner PD officer). Prepare young students for entry into middle and high school system.
2023	SD MOU School District/Sutton PD	MOU with Sutton PD to address school truancy issues for Simonds and Kearsarge District.	Simonds Elementary (also for School, Middle and High Schools in Sutton)	High	District/Sutton PD	Updated MOU on an annual basis.	Hire a full-time resource officer for the District if funds are available.
Feb 2024	SD School District Automated Calling System	Used only for school emergencies. Automated phone, text, email service to parents for alert. Used for snow delays and snow days-Blackboard Connect	Entire Town	High	Kearsarge Regional SAU 65	2023 Sep Update Blackboard Connect contact information	District is reviewing potential new system to replace the Blackboard Contact system.
Jun 2024	SD Bicycle Safety Education K-1	Through the Bike-Walk Alliance of NH in 2023, partners donated a fleet of strider/balance bicycles and related gear to the Kearsarge Regional School District so the PE teachers in the four elementary schools could teach all the kids in Kindergarten and first grade how to ride bikes. The result is every child in the seven town district will be taught how to ride in school.	Simonds Elementary	TBD, likely High	Kearsarge Regional SAU 65, Warner Police Dept, multiple partners, Friends of Concord - Lake Sunapee Rail Trail	Warner received bikes in 2024, program was widely regarded by the community.	If program is successful (it was just started in 2023), the partners may try to get bikes for the older children in the KRSD.
Feb 2024	WV Well Head Protection Area Signage Indicating Location and Restrictions	Signage informing the public about where the watershed is posted along Main Street about the Watershed Protection Area.	Water Precinct Areas	High	Warner Village Water District	Monitor signage for vandalism.	Monitor signage and replace signs that have been removed or vandalized.

Source: Warner Hazard Mitigation Committee

7 PRIOR ACTION STATUS

The **Hazard Mitigation Plan Update 2019** provided a basis to begin Action development, many of which originated from prior **Plans**. A review of the **2019** Actions is provided by the Hazard Mitigation Committee, determining which Actions have been **Completed**, **Deleted**, or **Deferred** to the **2024 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 **2019 Plan’s deferred** Actions in addition to the **New** Actions from the **2024 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 **2019 Plan** are listed in **Table 7.1** along with completion dates.

Actions which were **Deleted** from the **2019 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 Warner’s activities. Deleted Actions are listed in **Table 7.2**.

Actions which were **Deferred** from the **2019 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 7.3** and have been re-prioritized with the **New** Actions in the **Mitigation Action Plan**.

Changes in priority of the **Deferred 2019** Actions occurred over the last five years. The **2024 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 **2024 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> .

Review of 2019 Actions

Warner’s mitigation Actions from the **2019 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 the first **Plan** which were **Completed** or **Deleted** and identified as such in the **2019 Plan** were not given numerical identifiers (**#NA**).

HMP	Action # Range	
2004 Plan	#01- 2003 to	#08- 2003
2008 Plan	#09- 2008 to	#67- 2008
2014 Plan	#68- 2014 to	#93- 2014
2019 Plan	#94- 2019 to	#115- 2019
2024 Plan	#116- 2024 to	#138- 2024

COMPLETED ACTIONS

A total of **38** mitigation Actions were **Completed** from the previous **Hazard Mitigation Plans** as shown in **Table 7.1**.

Table 7.1
Completed Mitigation Actions

Priority Score (2014-2019)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
COMPLETED AFTER 2024 Plan (from CHAPTER 8)						
		See Chapter 8 – HMC to add completed Actions				
COMPLETED FROM 2024 Plan (12)						
57	#41-2008	Acquire and Install Portable Generator for McDonald Pump Station to Maintain Water Quality During Power Outages	2023	Warner Village Water District	\$10,000	Earthquake, Wind, Tropical, Utility Outage, Flood, Health
71	#42-2008	Promote Public Awareness of Watershed Protection Regulations to Protect the Water Quality of Town Wells	2023	Warner Village Water District	\$0	Flood, Earthquake, Public Health, (Water Quality), River
70	#43-2008	Encourage Recycling by Businesses and Residents to Reduce the Risk of Fires, Hazardous Materials Spills, and to Preserve Public Health and Water Quality	Bi-annual (fall 2022)	Board of Selectmen	\$700	Hazardous Materials, Public Health, (Water Quality), River
74	#61-2008	Add Watershed Protection Regulation Updates to Planning Board Regulations to Protect the Water Quality of Town Wells	Mar 2023	Planning Board	\$200	Flood, Earthquake, Public Health, (Water Quality), River
70	#65-2008	Encourage Development of New Flood Insurance Study to More Accurately Depict Location of Floodplains in Warner	Mar 2024, TBD	Board of Selectmen	\$0	Flood, River Ice Jam, Scouring & Erosion, Tropical
69	#75-2014	Upgrade Collins Road Culverts over Intermittent Streams to Reduce the Impact of Floods and Erosion	2023	Public Works Department	\$6,000 - \$10,000	Flood, Ice Jam, Scouring & Erosion, Debris
69	#83-2014	Upgrade Henniker Road Culvert over Intermittent Stream to Reduce the Impact of Floods and Erosion	2023	Public Works Department	\$5,000 - \$10,000	Flood, Ice Jam, Scouring & Erosion, Debris

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Town of Warner, NH Hazard Mitigation Plan Update 2024

7 PRIOR ACTION STATUS

Priority Score (2014-2019)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
71	#85-2014	Retrofit the Town Hall with a Sprinkler System to Reduce the Impact of Fire Events	Dec 2023	Board of Selectmen	\$75,000 - \$100,000	Lightning, Fire, Hazardous Materials, Conflagration
67	#93-2014	Update the Zoning Ordinance to Comply with NFIP Requirements to Reduce the Impact of Flooding	Mar 2024, TBD	Planning Board	\$200	Flood, River Ice Jam, Scouring & Erosion, Tropical
75	#99-2019	Upgrade the Drainage of the Dalton/Joppa Covered Bridge Abutments to Ensure Adequate Drainage and Reduce Flooding and Scouring of Bridge	2020	Public Works Department	\$3,000	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human
55	#101-2019	Replace the Simonds School Roof Fire Escape to Reduce the Injury Potential During Evacuations	2022	Kearsarge Regional School District, with help from Simonds Elementary School	\$20,000	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human
73	#113-2019	Install Water Line on Kearsarge Mountain Road	Fall 2019	Warner Village Water District with Town	\$160,000	Earthquake, Drought, Public Health, Water Quality
COMPLETED FROM 2019 Plan (16)						
---	n/i 2008	Complete the Natural Resource Inventory	Jan 2009	Conversation Commission	\$ unknown	Lightning, Wildfire, River, Wind/Tropical, Dam Release
32	n/i 2008	Develop Information/Schooling Packet (Blizzard Bags) for Children Unable to Attend Due to Hazard Event	Oct 2009	Simonds School Principal	\$0	Winter, Public Health, Extreme Temps
33	#9-2008	Install Dry Hydrant in Rural Areas (at Waterloo Covered Bridge)	Sept 2009	Fire Chief	\$5,000	Lightning, Wildfire
33	#10-2008	Install Dry Hydrant in Rural Areas (on Poverty Plains Road)	Sept 2009	Fire Chief	\$5,000	Lightning, Wildfire
33	#11-2008	Install Dry Hydrant in Rural Areas (on Pleasant Pond)	Sept 2009	Fire Chief	\$5,000	Lightning, Wildfire
33	#12-2008	Install Dry Hydrant in Rural Areas (on Mason Hill Road)	Sept 2009	Fire Chief	\$5,000	Lightning, Wildfire
32	#13-2008	Update Town Building Code to Current State Statutes	Ma 2010	Planning Board	\$250	Earthquake, Lightning, Wildfire, Wind/Tropical
34	#14-2008	Obtain Digitized NFIP Maps from FEMA	Apr 2010	Board of Selectmen, Emergency Management	\$0	Inland Flooding, River Haz

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Town of Warner, NH Hazard Mitigation Plan Update 2024

7 PRIOR ACTION STATUS

Priority Score (2014-2019)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
32	#15-2008	Purchase Buzz-in Locked Door for Elementary School	Aug 2010	Simonds Elementary Principal	\$2,500	Human, Cyber
33	#16-2008	Complete the Master Plan Update	May 2011	Planning Board	\$16,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat
32	#17-2008	Purchase 8-10 Additional Portable Digital Radios for Fire Department	Dec 2011	Fire Chief	\$17,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat, Mass Casualty, Radiological, Terrorism
34	#18-2008	Investigate and Install a Permanent Generator for Fire Station	Feb 2012	Fire Chief	\$22,000	Extreme Temps, Wind/Tropical, Winter, Utility, Haz Mat, Mass Casualty,
33	#19-2008	Install Dry Hydrant in Rural Areas (on Melvin Road)	Sep 2012	Fire Chief	\$5,000	Lightning, Wildfire
33	#20-2008	Install Dry Hydrant in Rural Areas (at Warner Power (Warner River))	Sep 2012	Fire Chief	\$5,000	Lightning, Wildfire
33	#21-2008	Install Dry Hydrant in Rural Areas (at Silver Lake Dam)	Sep 2012	Fire Chief	\$5,000	Lightning, Wildfire
	#22-2008	Develop and Implement a Plan to Place Real-Time Public Notification Information on Town Website	Dec 2012	Board of Selectmen	\$300 - \$1,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat, Mass Casualty, Radiological, Terrorism
32	#23-2008	Acquire Digital Radios for Highway Department and Establish Common	Jan 2013	Public Works Director	\$6,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland

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Town of Warner, NH Hazard Mitigation Plan Update 2024

7 PRIOR ACTION STATUS

Priority Score (2014-2019)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
		Frequencies with Town Departments				Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat, Mass Casualty, Radiological, Terrorism
COMPLETED FROM 2014 PLAN (10)						
35	#32-2008	Erect New Water Protection Area Signage along Main Street	Fall 2014	Warner Village Water District	\$1,000	Public Health (Water Quality)
36 R	#42-2008	Promote Public Awareness of Watershed Protection Regulations	Nov 2014 (signage)	Warner Village Water District	\$600	Public Health (Water Quality)
36 R	#43-2008	Encourage Recycling by Businesses and Residents	Apr 2015 (brochure)	Board of Selectmen	\$700	Public Health (Water Quality), Haz Mat
36 R	#57-2008	Update the Subdivision and Site Plan Regulations to Reflect Updated Master Plan	2016 (last updated)	Planning Board	\$200	Earthquake, Landslide, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Aging Infrastructure, Utility, Crash, Haz Mat
36 R	#59-2008	Update the Zoning Ordinance to Reflect Updated Master Plan	2016 (last updated)	Planning Board	\$1,500 - \$2,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat
36	#72-2014	Resurface Face of Silver Lake Dam	Fall 2013	Public Works Department	\$3,000	Inland Flooding, Dam, Aging Infrastructure
35	#74-2014	Replace/Repair North Road Culvert over French Brook	Aug 2013	Public Works Department	\$10,000 or \$220,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
35	#78-2014	Replace Old Denny Hill Road Culvert along Ditch Line	Oct 2014	Public Works Department	\$5,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion

Priority Score (2014-2019)	Action Number	Action	Completed By Date	Who is Responsible	Approx \$ Cost	Natural Hazards Addressed
29	#88-2014	Replace/ Repair Fish & Game Culvert on Bartlett Loop Road over Willow Brook	Apr 2015	Public Works Department	\$6,000 or \$220,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
36 R	#93-2014	Update the Zoning Ordinance to Comply with NFIP Requirements	2010 (last updated)	Planning Board	\$0	Inland Flooding, River

DELETED ACTIONS

The pink highlighted rows indicate the total Deleted Actions in Table 7.2 from previous Hazard Mitigation Plans which will not be incorporated into the 2024 Plan as Deferred Actions. Many of the first set of Actions were Deleted because they were preparedness, response or recovery items and more appropriately belonged in the Town’s Emergency Operations Plan.

Table 7.2 Deleted Mitigation Actions

Priority Score (2014-2019)	Action Number	Action	Deleted Date	Who is Responsible	Approx \$ Cost	Why Deleted? The Action...
DELETED AFTER 2024 Plan (from CHAPTER 8)						
		See Chapter 8 – HMC to add deleted Actions				
DELETED FROM 2024 Plan (6)						
50	#67-2008	Identify and Map Cell Tower Communication Gaps in Warner to Raise Awareness of Possible Communication Issues During Disasters	Apr 2024	Emergency Management	\$12,000	Was unrealistic, financially infeasible.
69	#91-2014	Educate Property Owners on Warner River Erosion along Susceptible Roads to Reduce the Risk of Erosion, Scouring and Washout	Apr 2024	Conservation Commission	\$700	Was incorporated into another activity

Priority Score (2014-2019)	Action Number	Action	Deleted Date	Who is Responsible	Approx \$ Cost	Why Deleted? The Action...
69	#95-2019	Install Transfer Station Fire Suppression System to Reduce the Impact of Fire Events	Apr 2024	Public Works Department	\$80,000	Was incorporated into another activity
66	#105-2019	Replace Sewer Lines on West Main Street from Warner Community Center, and Other Sewer Pipes to Protect Watershed Water Quality	Apr 2024	Warner Village Water District	\$300,000	Was incorporated into another activity
68	#108-2019	Provide Public Education on Emergency Shelter Activations to Reduce the Risk of Disasters to the Population	Apr 2024	Emergency Management	\$0	Is an ongoing Action, incorporated into Capability Assessment
68	#109-2019	Provide Public Education on Subscribing to Emergency Warning Systems	Apr 2024	Emergency Management	\$0	Is an ongoing Action, incorporated into Capability Assessment
DELETED FROM 2019 Plan (9)						
33	#1- 2003	Provide Outreach to Dam Owners	Jan 2013	Emergency Management	\$500	Was modified and incorporated into another activity
25	#2- 2003	Provide Funding for Conservation Easement Monitoring	Jan 2013	Conservation Commission	\$200	Was financially infeasible
29	#3- 2003	Develop Town-wide Alarm System	Feb 2013	Emergency Management Director	\$5,000 - \$10,000	Was modified and incorporated into another activity
30	#4- 2003	Identify Additional Shelters, Both In and Out of Town	Feb 2013	Emergency Management Director	\$0	Was modified and incorporated into another activity
35	#26- 2008	Raise Manhole Pits on West Joppa Road and Construct Levee	Jan 2013	Warner Village Water District	\$200,000 or higher	Duplicated existing efforts
35	#27- 2008	Perform Drill on Silver Lake Dam	Jan 2013	Emergency Management	\$250	Was modified and incorporated into another activity
32	#28- 2008	Develop Flyers to Promote Roof Shoveling	Feb 2013	Fire Department	\$500	Duplicated existing efforts
32	#29- 2008	Encourage Bradford's Severe Storm Monitoring of Lakes Todd, & Massasecum	Feb 2013	Emergency Management Director	\$50	Was modified and incorporated into another activity
30	#30- 2008	Fund Conflict Resolution Workshop for Town Officials and Staff	Feb 2013	Board of Selectmen	\$1,000	Duplicated existing efforts
DELETED FROM 2014 Plan (32)						
35	#7- 2003	Utilize Town Website and Newsletter to Publicize	Jan 2019	Emergency Management	\$600 - \$700	Was a preparedness,

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Town of Warner, NH Hazard Mitigation Plan Update 2024

7 PRIOR ACTION STATUS

Priority Score (2014-2019)	Action Number	Action	Deleted Date	Who is Responsible	Approx \$ Cost	Why Deleted? The Action...
		Emergency Management Information				response or recovery activity
34	#8- 2003	Develop a Disaster Pamphlet for Residents	Jan 2019	Emergency Management	\$750	Was a preparedness, response or recovery activity
36	#31- 2008	Install Railing Around Roof of Elementary School	Jan 2019	Simonds Elementary	35,000	Was an unrealistic activity
31	#34- 2008	Enforce Town 911 Ordinance	Jan 2019	Board of Selectmen	\$1,000	Was a preparedness, response or recovery activity
31	#35- 2008	Encourage NH DES Enforcement of Dam Regulations and Communication with Town	Jan 2019	Emergency Management	\$250	Was a preparedness, response or recovery activity
36	#36- 2008	Monitor Weather and Warner River Water Levels	Jan 2019	Emergency Management	\$250 annually	Was a preparedness, response or recovery activity
36	#37- 2008	Replace Emergency Supply Items in Teacher Backpacks	Jan 2019	Simonds Elementary	\$100	Was a preparedness, response or recovery activity
33	#38- 2008	Develop Enhanced Communications Systems	Jan 2019	Emergency Management	\$2,500 annually	Was a preparedness, response or recovery activity
33	#40- 2008	Maintain Communication System with Bradford for Lake Todd Dam Breach & Lake Massasecum	Jan 2019	Emergency Management	\$50	Was a preparedness, response or recovery activity
36	#44- 2008	Promote CIP at Town Meeting and in Town Report	Jan 2019	Planning Board	\$0	Was a preparedness, response or recovery activity
35	#45- 2008	Publicize Town-wide Drills and Exercises	Jan 2019	Emergency Management	\$0	Was a preparedness, response or recovery activity
36	#46- 2008	Plan and Execute Terrorism Drills and Active Shooter Drills in Vulnerable Buildings	Jan 2019	Police Department	\$2,000 annually	Was a preparedness, response or recovery activity
36	#47- 2008	Enable Expanded Highway Department Training	Jan 2019	Public Works Department	\$1,000	Was a preparedness, response or recovery activity
36	#48- 2008	Train Highway Department on Silver Lake Dam Procedures	Jan 2019	Public Works Department	\$0	Was a preparedness, response or recovery activity

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Town of Warner, NH Hazard Mitigation Plan Update 2024

7 PRIOR ACTION STATUS

Priority Score (2014-2019)	Action Number	Action	Deleted Date	Who is Responsible	Approx \$ Cost	Why Deleted? The Action...
36	#49-2008	Undertake Hazardous Response Training	Jan 2019	Fire Department	\$240	Was a preparedness, response or recovery activity
36	#50-2008	Hold Annual Evacuation Plan Exercise for Elementary School	Jan 2019	Simonds School	\$100	Was a preparedness, response or recovery activity
36	#51-2008	Enable Expanded Police Department Training on Current Topics	Jan 2019	Police Department	\$1,000	Was a preparedness, response or recovery activity
35	#52-2008	Continue to Investigate Outside Training Resources for Fire Department	Jan 2019	Fire Department	\$0	Was a preparedness, response or recovery activity
34	#53-2008	Train Town Personnel and Officials on Emergency Management Procedures and NIMS Compliance	Jan 2019	Emergency Management	\$500	Was a preparedness, response or recovery activity
32	#54-2008	Train with and Utilize Haz Mat ALOHA, CAMEO, and MARPLOT on a Regular Basis	Jan 2019	Emergency Management	\$0	Was a preparedness, response or recovery activity
36	#55-2008	Update Police Department Standard Operation Procedures	Jan 2019	Police Department	\$0	Was a preparedness, response or recovery activity
36	#56-2008	Establish Improved Communication Protocol with Local Highway Mutual Aid Towns	Jan 2019	Public Works Department	\$500	Was a preparedness, response or recovery activity
36	#58-2008	Develop Pandemic Response Plan for Elementary School	Jan 2019	Simonds School	\$0	Was a preparedness, response or recovery activity
36	#60-2008	Update Personal Safety and Evacuation Plans for Children with Disabilities at Elementary School	Jan 2019	Simonds School	\$0	Was a preparedness, response or recovery activity
35	#62-2008	Produce Written Standard Operating Procedures for Highway Department	Jan 2019	Public Works Department	\$50	Was a preparedness, response or recovery activity
34	#63-2008	Update Emergency Management Plan, and Add Waste/ Debris Management Section	Jan 2019	Emergency Management	\$2,502	Was a preparedness, response or recovery activity
33	#64-2008	Develop Plan for Evacuation of Animals and Identify Shelters	Jan 2019	Emergency Management	\$200	Was a preparedness, response or recovery activity

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Town of Warner, NH Hazard Mitigation Plan Update 2024

7 PRIOR ACTION STATUS

Priority Score (2014-2019)	Action Number	Action	Deleted Date	Who is Responsible	Approx \$ Cost	Why Deleted? The Action...
33	#66-2008	Encourage Village Businesses to Develop Business Emergency Plan	Jan 2019	Kearsarge Chamber of Commerce	\$0	Was a preparedness, response or recovery activity
32	#86-2014	Install a Fire Suppression System at the Public Works Department and Transfer Station	Jan 2019	Public Works Department	\$70,000 - \$80,000	Was incorporated into another activity
33	#89-2014	Develop Volunteer List for Warming Center Staffing	Jan 2019	Emergency Management & Board of Selectmen	\$100	Was a preparedness, response or recovery activity
32	#90-2014	Identify At-Risk Populations	Jan 2019	Emergency Management	\$250	Was a preparedness, response or recovery activity
34	#92-2014	Participate in National Flood Insurance Program (NFIP) Training	Jan 2019	Building Department	\$100	Was a preparedness, response or recovery activity

DEFERRED ACTIONS

The tan highlighted rows in Table 7.3 indicate the 34 Deferred mitigation Actions from the 2019 Plan which also appear in the forthcoming 2024 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 2025 standards in later sections.

Table 7.3
Deferred Mitigation Actions

Priority Score (2019)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
61	#57-2008	Update the Subdivision and Site Plan Regulations to Reflect Updated Master Plan to Reduce the Risk of Natural Hazards to Property	Apr 2024	Planning Board	\$300	More time is needed	Drought, Earthquake, Temperature, Wind, Flood, Landslide, Lightning, Health, River, Winter, Solar, Tropical, Wildfire
64	#59-2008	Update the Zoning Ordinance to Reflect Updated Master Plan to Reduce the Risk of Natural Hazards to Property	Apr 2024	Planning Board	\$1,500 - \$2,000	More time is needed	Drought, Earthquake, Temperature, Wind, Flood, Landslide, Lightning, Health, River, Winter, Solar, Tropical, Wildfire
71	#94-2019	Obtain Dam Emergency Action Plans for the Significant Lake Todd and Low Hazard Silver Lake & Bear Pond Dams	Apr 2024	Emergency Management	\$0	Lower priority than other activities	Dam, River, Debris
73	#5-2003	Establish Culvert Replacement Program to Reduce the Impact of Floods and Erosion	Apr 2024	Public Works Department	\$2,500	More time is needed	Flood, Ice Jam, Scouring & Erosion, Debris, Sinkhole
49	#6-2003	Develop a Feasibility Study of Emergency Access from Kearsarge Mountain Road for Evacuation to Reduce the Risk of Wildfire, Winter	Apr 2024	Emergency Management	\$12,500	More time is needed	Winter, Wind, Wildfire, Tree Debris, Utility Outage

Priority Score (2019)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
		Storms, Fallen Trees and Power Outages					
75	#33-2008	Identify, Designate and Sign Class VI Roads As Fire Lanes to Reduce Wildfire Damage	Apr 2024	Fire Department, with Board of Selectmen	\$250 posting + \$750 signage	More time is needed	Lightning, Wildfire, Wind, Winter, Tree Debris, Utility
69	#68-2014	Upgrade Ladd Lane Culvert over Davis Brook to Reduce the Impact of Floods and Erosion	Apr 2024	Public Works Department	\$10,000	More time is needed, more funding is needed	Flood, Ice Jam, Scouring & Erosion, Debris
71	#69-2014	Reconstruct 250 Feet of Retreat Road to Reduce Erosion and the Risk of Washouts	Apr 2024	Public Works Department	\$7,000	More time is needed, more funding is needed	Flood, Scouring & Erosion, Debris
74	#70-2014	Install Dry Hydrant on West Joppa Road By Covered Bridge to Reduce the Impact of Fire, Wildfire and Lightning	Apr 2024	Fire Department	\$7,500	More time is needed	Lightning, Wildfire, Drought, Hazardous Materials, Fire
74	#71-2014	Install Dry Hydrant on West Roby District Road to Reduce the Impact of Fire, Wildfire and Lightning	Apr 2024	Fire Department	\$7,500	More time is needed	Lightning, Wildfire, Drought, Hazardous Materials, Fire
68	#73-2014	Upgrade a Box Culvert Bridge on 189/099 North Village Road over Silver Brook At the Dam to Reduce the Impact of Floods and Erosion	Apr 2024	Public Works Department	\$220,000	More time is needed	Flood, Ice Jam, Scouring & Erosion, Debris
65	#76-2014	Install a Box Culvert on Schoodac Road Culvert over Intermittent Stream to Reduce the Impact of Floods and Erosion	Apr 2024	Public Works Department	\$300,000	More time is needed, more funding is needed	Flood, Ice Jam, Scouring & Erosion, Debris
65	#77-2014	Install a Box Culvert on Poverty Plains Road Culvert over Schoodac Brook to Reduce the Impact of Floods and Erosion	Apr 2024	Public Works Department	\$350,000	More time is needed, more funding is needed	Flood, Ice Jam, Scouring & Erosion, Debris
68	#79-2014	Install Two Box Culverts on Red Chimney Road over	Apr 2024	Public Works Department	\$380,000 (\$260k grant), plus	More time is needed	Flood, Ice Jam, Scouring & Erosion, Debris

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Town of Warner, NH Hazard Mitigation Plan Update 2024

7 PRIOR ACTION STATUS

Priority Score (2019)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
		Ballard Brook and to Reduce the Impact of Floods and Erosion			\$300,000 for second		
65	#80-2014	Install a Box Culvert on Mink Hill Lane over Silver Brook to Reduce the Impact of Floods and Erosion	Apr 2024	Public Works Department	\$350,000	More time is needed, more funding is needed	Flood, Ice Jam, Scouring & Erosion, Debris
66	#81-2014	Install a Box Culvert on East Joppa Road over Bartlett Brook to Reduce the Impact of Floods and Erosion	Apr 2024	Public Works Department	\$600,000	More time is needed	Flood, Ice Jam, Scouring & Erosion, Debris
67	#82-2014	Upgrade Newmarket Road Culvert over Davis Brook to Reduce the Impact of Floods and Erosion	Apr 2024	Public Works Department	\$75,000	More time is needed, more funding is needed	Flood, Ice Jam, Scouring & Erosion, Debris
74	#84-2014	Install Dry Hydrant on Burnt Hill Road to Reduce the Impact of Fire, Wildfire and Lightning	Apr 2024	Fire Department	\$7,500	More time is needed, more funding is needed	Lightning, Wildfire, Drought, Hazardous Materials, Fire
67	#87-2014	Encourage the Installation of a Standby Generator for North Ridge Elderly Housing to Reduce the Impact of Wind, Storm or Winter Events	Apr 2024	Select Board with Emergency Management, North Ridge Board	\$0	Lower priority than other activities	Temperature, Fire, Public Health, Wind, Winter
69	#96-2019	Install Public Works Building Fire Suppression System and Cistern to Reduce the Impact of Fire Events	Apr 2024	Public Works Department	\$275,000	More time is needed, more funding is needed	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human
67	#97-2019	Replace Old Sewer Pipes As Necessary In Coordination with Other Projects to Protect Groundwater and Reduce Risk from Flooding and Earthquake	Apr 2024	Warner Village Water District	\$200,000	More time is needed	Flood, Scouring & Erosion, Earthquake, Water Quality, Public Health
75	#98-2019	Upgrade Existing Dry Hydrant Fittings on the Pleasant Pond,	Apr 2024	Fire Department	\$7,500	More time is needed	Lightning, Wildfire, Drought,

Priority Score (2019)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
		Mentis Scientific Inc, Poverty Plains, Retreat Road Dry Hydrants to Reduce the Impact of Rural Wildfires					Hazardous Materials, Fire, Human
63	#100-2019	Install Simonds School Fire Suppression System to Reduce the Impact of Fires and a Generator to Reduce the Impact of Wind, Storm or Winter Events	Apr 2024	Kearsarge Regional School District, with help from Simonds Elementary School	\$750,000	More time is needed	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human
70	#102-2019	Install Lightning Rods and Grounding Panels At the Police Department, New Fire Station, Transfer Station, Public Works Facility, Town Hall, and Pillsbury Free Library to Reduce the Impact of Lightning	Apr 2024	Board of Selectmen with Fire Department and Emergency Management assistance	\$140,000 (\$20,000 per building)	Lower priority than other activities, more funding is needed	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human
75	#112-2019	Install a Static River Gage At West Roby District Road on the Warner River to Reduce the Impact of Flooding	Apr 2024	Emergency Management	\$4,000	Lower priority than other activities	River, Flood
62	#39-2008	Develop a Study on a Potential Third Municipal Water Well and Drill the Well to Protect Water Quality	Apr 2024	Warner Village Water District	\$1,000,000	More funding is needed, lower priority than other activities	Earthquake, Drought, Public Health, Hazardous Materials, Water Quality
69	#103-2019	Research and Install Beaver Deceiver or Alternative Devices At a Trial Location Where Beaver Activity Is Highest to Discourage the Development of Natural Dams	Apr 2024	Public Works Department	\$2,500	Lower priority than other activities	Flood, Dam, Wind, Debris
75	#104-2019	Develop a Hazard Tree Removal Policy Enabling the Advance Trimming of Hazardous Trees	Apr 2024	Public Works Department with Emergency Management	\$250	More time is needed	Wind, Tropical, Winter, Lightning, Wildfire

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Town of Warner, NH Hazard Mitigation Plan Update 2024

7 PRIOR ACTION STATUS

Priority Score (2019)	Action Number	Action	Deferred Date	Who is Responsible	Approx \$ Cost	Why Deferred? Because...	Hazards Addressed
		to Reduce Storm Damage					
62	#114-2019	Develop Stormwater Infrastructure Asset Management Plan for Stormwater Runoff In the Village	Apr 2024	Town Administration, Public Works Dept assistance	\$25,000	More funding is needed, lower priority than other activities	Flood, Scouring & Erosion, Earthquake, Water Quality, Public Health
71	#106-2019	Develop a Public Education Program About Potential Water Contamination In Village Area from Sewer Line Breakage	Apr 2024	Warner Village Water District	\$300	More time is needed, lower priority than other activities	Earthquake, Public Health, (Water Quality)
71	#107-2019	Develop a Public Education Program for Tying Down Propane Tanks In Areas Susceptible to Flooding to Reduce the Risk of Explosion and Hazardous Spills	Apr 2024	Emergency Management with Town Office assistance	\$500	More time is needed, lower priority than other activities	Flood, Hazardous Materials, Fire / Explosion
71	#110-2019	Require Town Staff to Take Courses Related to the Prevention of Cyberattacks on the Town Computer Systems	Apr 2024	Town Administration with IT assistance	\$0	More time is needed, more staffing is needed	Cyber
67	#111-2019	Provide Public Education on How to Personal Prevent Cyber Attacks and Breaching of Data, Identify Theft	Apr 2024	Police Department, Welfare Office	\$0	Lower priority than other activities	Cyber
61	#115-2019	Obtain Information on Municipal Protection from Electromagnetic Pulse (EMP) and Provide Public Education on Personal Protection	Apr 2024	Emergency Management	\$0	More time is needed, lower priority than other activities	Solar, Geomagnetic Storms, Terrorism

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 Warner 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 **2024 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 Warner.

Several uncompleted **Deferred (2019)** Warner mitigation Actions have been carried forward into the **2024 Plan** with the updates to the evaluation, cost, prioritization, etc.

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DESCRIPTION OF ACTION MATRIX

A listing of 34 Deferred mitigation Actions from 2019 and 23 New mitigation Actions from 2024 important to the Town of Warner 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 2024 Plan. The 2024 Actions begin where the prior Actions left off, #116- 2024 through #138- 2024. Over time, the Actions can be tracked to see which have been Deferred and to organize the Completed or Deleted Actions, placed into 7 PRIOR ACTION STATUS. 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 2019 Actions and the New 2024 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.

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Warner’s Mitigation Action Plan 2024

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 2024, the Mitigation Action Plan shown in Table 8.1 Planning and Regulatory; Table 8.2 Structure and Infrastructure; Table 8.3 Natural Systems Protection; and Table 8.4 Education and Outreach should be able to guide future hazard mitigation efforts in the Town through an annual implementation process.

MITIGATION ACTION PLAN

Thirty-four (34) Deferred Actions from 2019 and 23 New Actions from 2024 combine to develop the 57 Actions of the 2024 Mitigation Action Plan. The Deferred Actions’ cells are highlighted in tan.

The Actions (projects) for the Town to work on and/or complete over the duration of this Plan include:

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Table 8.1
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
#57-2008	Update the Subdivision and Site Plan Regulations to Reflect Updated Master Plan to Reduce the Risk of Natural Hazards to Property	<u>Short Term</u> <u>1-2 Years</u>	60	Planning Board	\$300	Project will reflect the Town’s input into the updated 2020 Master Plan and will enable the Town to have a basis for new and updated regulations. Site Plan and Subdivision Regulations were updated last in 2017. When more housing is created, more volume and concentration creates runoff and other natural hazards. Runoff from construction and homes will end up in the rivers and streams, need turnouts and infiltration and impervious surface to enable percolation of water. Culverts and road construction. Last completed MP was 2011. SPR & Sub regs working on PB in Mar 2024, to be completed this year. No substantial revisions related to natural hazards. PB is now updating Chapter by Chapter, Housing is in 2024.	Drought, Earthquake, Temperature, Wind, Flood, Landslide, Lightning, Health, River, Winter, Solar, Tropical, Wildfire	Entire Town	Cost is for public noticing for two public hearings.	Planning Board Budget
#59-2008	Update the Zoning Ordinance to Reflect Updated Master Plan to Reduce the Risk of Natural Hazards to Property	<u>Long Term</u> <u>4 to 5 Years</u>	58	Planning Board	\$1,500 - \$2,000	Project will reflect the Town’s input into the updated 2011 Master Plan and will enable the Town to have a basis for new and updated Zoning Ordinances. The Housing Chapter is being updated in 2024. More time is needed. One Chapter per year is being discussed.	Drought, Earthquake, Temperature, Wind, Flood, Landslide, Lightning, Health, River, Winter, Solar,	Entire Town	Cost is for public noticing for two public hearings and legal review of new ordinances as well as printing new Zoning Ordinances.	Planning Board 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
							Tropical, Wildfire			
#94-2019	Obtain Dam Emergency Action Plans for the Significant Lake Todd and Low Hazard Silver Lake & Bear Pond Dams	<u>Short Term</u> <u>1-2 Years</u>	71	Emergency Management	\$0	Newbury Dam High Street/Lake Todd – if breached would severely impact the Warner River downstream. The two Low Hazard Dams, Bear Pond owned by Contoocook Village Precinct and Silver Lake owned by Town, have Dam Emergency Action Plans. This information can help reduce injuries or property damage if Town officials could plan for the possibility or encourage necessary repairs. With greater severity of storms now, there may be a greater risk today of dam failure. 'Lower Priority (had some updates to Town owned Silver Lake DEAP)	Dam, River, Debris	Silver Pond & Bear Pond Dams	Cost is in-kind staff and volunteer labor.	N/A
#116-2024	Consider Adopting the Approved HMP Into the Warner Master Plan to Enable a Greater Integration of Natural Hazards and Actions Into Town Planning	<u>Medium Term</u> <u>3-4 Years</u>	74	Planning Board, with help from Emergency Management	\$300	For integration into Town documents, adopt the Hazard Mitigation Plan into the Town Master Plan. Precedence in the NH RSAs for adoption of Natural Hazards element into local MPs.	Drought, Earthquake, Temperature, Wind, Flood, Landslide, Lightning, Health, River, Winter, Solar, Tropical, Wildfire	Entire Town	Cost is for public noticing for two public hearings.	Planning Board Budget
#117-2024	Review and Modernize the 2014 Telecomm Ordinance to Make It Easier for	<u>Long Term</u> <u>4 to 5 Years</u>	47	Planning Board, with RF Study input	\$2,000	Communication remains spotty for cellular and emergency communications. Fiber internet is lost daily at businesses and is	Wildfire, Winter, Ice, Cold, Heat, Earthquake	Entire Town	Cost is for ordinance update by a consultant	Planning Board 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
	Towers to be Constructed to Enable Better Communication Across Warner					regularly extremely slow. Cell towers need to be connected to a central Office (see above) to operate. TDS is the only supplier of the fiber internet. Town survey has shown that residents need better internet service. Town Depts have both Fire & Rescue, Highway analog and PD has digital (FD received grant funds for latest radios, annual update of older radios). EOC has same capability. DPW has analog. Also spotty radio communications in places. AT&T is best provider in Warner, Verizon & US Cellular are spotty. Providers are concentrating on 5G and are ignoring the lower speeds. May be able to obtain internet upgrade funding. Expensive rates.	, Solar, Wind, Thunderstorm, Downburst, Lightning, Tornado, Hail, Tropical, Tech/ Human		and public hearing costs.	potential grants
#118-2024	Preserve the Remote, Class VI Gravel Roads and Trails in the Mink Hills Area to Protect the Watersheds from Erosion and Degradation	<u>Long Term</u> <u>4 to 5 Years</u>	54	Mink Hills Stewardship Committee	Unknown	Ideas include: 2011 OHRV policy update, signage, old (Boundtree) Committee for multi-use trail users. Maintaining ditch lines, create turnouts & detention ponds. Davis Road Class VI old town plank bridge washed out, people detouring along the Warner River with vehicles, horses, bikes, on foot, etc. May have to convert to a fire lane per RSAs. New Committee just formed in April 2024. Mission is to protect the Class VI roads and watershed. A lot of research and preparation is necessary before any Class VI work could be undertaken.	Thunderstorm, Rainstorm, Flood, Erosion, Water Quality	Mink Hills Class VI Roads	Cost could be for labor and materials for a box culvert or a 48" culvert pipe, or for Public Works labor.	Research grants, Public Works 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
#119-2024	Work with the State Legislature to Introduce a Bill to Increase Cellular Coverage to the Entire Town of Warner Area	<u>Long Term 4 to 5 Years</u>	50	Board of Selectmen, with RF Study input	\$300	After the RF study, work with legislators to obtain full cellular coverage in Warner. (for internet, most are fiber based, satellite) Communicating with people at the state via letter writing.	Wildfire, Winter, Ice, Cold, Heat, Earthquake, Solar, Wind, Thunderstorm, Downburst, Lightning, Tornado, Hail, Tropical, Tech/ Human	Entire Town	Cost is for meeting publicity and /or travel expenses to Concord.	Board of Selectmen Operating Budget
#120-2024	Work with the Consumer Advocate of NH for Assistance with the Public Utilities Commission with the Goal of Obtaining Full Cellular Coverage Across Warner	<u>Long Term 4 to 5 Years</u>	50	Board of Selectmen, with RF Study input	\$300	After the RF study, work with PUC to obtain full cellular coverage in Warner. (for internet, most are fiber based, satellite) Communicating with people at the PUC via letter writing.	Wildfire, Winter, Ice, Cold, Heat, Earthquake, Solar, Wind, Thunderstorm, Downburst, Lightning, Tornado, Hail, Tropical, Tech/ Human	Entire Town	Cost is for meeting publicity and /or travel expenses to Concord.	Board of Selectmen Operating Budget
#121-2024	Develop a Radio Frequency Cellular Communications Study to Understand Where the Dead Zones Are Located and What Options	<u>Medium Term 3-4 Years</u>	56	Board of Selectmen, with Emergency Management	\$12,000	Limited cell phone coverage could prevent people from calling in emergency events on remote trail systems. Accessing people on unmaintained trails can cause response delays. After an event, a FirstNet AT&T cell on wheels van	Wildfire, Winter, Ice, Cold, Heat, Earthquake, Solar, Wind, Thundersto	Entire Town	Cost would pay for a consultant to produce a study.	Potential US Homeland Security Grant, otherwise 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
	the Town Has to Obtain Complete Cellular Coverage Across the Town					can be requested by Police Dept, but they might not be available to deploy. See Bow's 2024 RF study.	rm, Downburst, Lightning, Tornado, Hail, Tropical, Tech/ Human			
#122-2024	Develop a New Town Fund for Emergency Management Expenditures	Short Term 1-2 Years	64	Board of Selectmen, with Emergency Management help	\$15,000 annually	Currently, there's not enough funding set aside in the event of a general public emergency. Capital Reserve Funds or Expendable Trust or Emergency Contingency Fund can help for saving for capital hazard mitigation projects, including grant match. Also, when a large property becomes developed, there will be a need for increased Town services and facilities, and respective increases in CRF contributions to these other funds will need to occur annually too. \$15,000 and a greater life than 3 years is CIP capital project definition. Develop a plan for what to spend funds on and how with the Budget Committee and Selectmen. See Emergency Management Ordinance for some definitions.	Drought, Wildfire, Winter, Ice, Cold, Heat, Dam, Flood, River, Earthquake, Landslide, Health/ Biologic, Solar, Wind, Thunderstorm, Downburst, Lightning, Tornado, Hail, Tropical, Tech/ Human	Entire Town	Cost is appropriated annually for a future emergency project.	Annual Warrant Article into CRF or Fund
#123-2024	Develop a Policy for Calling In Satellite Backup Coverage for Telephone and Internet Communications By Emergency	Short Term 1-2 Years	64	Police Department, Emergency Management, Public Works and Fire Dept	\$0	The TDS remote stations are set up for TDS communications are spotty around town. The TDS remote stations in Warner are set up for generators, but do not have them. Batteries are on station but will not support them for long. Have hook-	Winter, Ice, Cold, Heat, Solar, Wind, Thunderstorm, Downburst,	Municipal Buildings	Cost is in-kind staff and volunteer labor. https://about.att.com/p	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
	Responders Through AT&T Firstnet or Other Services During Major Storm Events					ups for single phase generators. TDS portable - 110v (single phase) or 220v and 440v three phase electricity can be used to run. The central TDS Telephone Office no longer has a standby generator, so if they lose electricity all landline telephone, internet & fiber communications will go out in Warner after the local batteries fail. This would also be a three-phase portable electricity generator. INFO: TDS covers 7-8 towns locally, office and equipment are located in Contoocook on Kearsarge Avenue. Since the 2008 ice storm, outage problems have not been significant. Warner has local contacts for getting assets on site and any outages fixed by TDS repair team with TDS contractors for heavy construction work. Policy would determine when they are called in, who calls them in and coordinates, which locations get service, coordinate with carriers.	Lightning, Tornado, Hail, Tropical, Tech/ Human		ages/disaster-recovery/firstnet	
#124-2024	Revise Subdivision and Site Plan Review Regulations to Require All Electric Wires Are Placed Underground and Require Tree Planting In the Business Commercial District and Intervale District Areas to Reduce the	Medium Term 3-4 Years	66	Planning Board	\$300	Revise the regulations to ensure underground wires are placed for new development. Ensure new plant trees for extreme heat mitigation in the Business District, Commercial District, and Intervale District. Can also consider benches, flags for beautification purposes.	Winter, Wind, Ice, Thunderstorm, Extreme Heat	Business District and Commercial District, Intervale Exit 9	Cost is for public noticing for two public hearings.	Planning Board 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
	Impact of Winter, Wind, Ice, and Extreme Heat Events									
	HMC ADD NEW ACTION HERE after 2025									
	HMC ADD NEW ACTION HERE after 2025									

Source: Warner Hazard Mitigation Committee

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Table 8.2
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
#5- 2003	Establish Culvert Replacement Program to Reduce the Impact of Floods and Erosion	<u>Short Term</u> <u>1-2 Years</u>	72	Public Works Department	\$2,500	A plan will be developed to ensure proper drainage to prevent erosion of roadways and damage to public and private property. UNH has a program to have people come out and GPS the culverts and place into a software program. More time. DPW will use the Culvert Assessment done by NH Fish & Game, NH Geological Survey, NH DOT to develop.	Flood, Ice Jam, Scouring & Erosion, Debris, Sinkhole	Entire Town	Cost is for developing the plan, GPSing the culverts and generating a map, and public hearing on the document. Other costs will be in-kind staff labor.	Public Works Department Budget
#6- 2003	Develop a Feasibility Study of Emergency Access from Kearsarge Mountain Road for Evacuation to Reduce the Risk of Wildfire, Winter Storms, Fallen Trees and Power Outages	<u>Long Term</u> <u>4-5 Years</u>	58	Emergency Management	\$12,500	Project will develop a plan to understand alternative egress for 600 residents and the general public. The College and tourists on the Mountain could total up to a thousand people on the weekend and special events. The EMD has brought the project to the CIP Committee and Board of Selectmen, and the project had been included in the CIP for the last 5 years and continues to be an action items in the CIP. This project may run beyond the timeframe of this Plan. An easement from the College to the Town owned land may be possible. 'More Time (\$12,500 in CIP, RFP generated in 2021 for study but no firms responded. Needs to	Winter, Wind, Wildfire, Tree Debris, Utility Outage	Kearsarge Mountain Road	Cost is for engineering study on a location, not construction. An RFP was sent out around COVID, needs to be reworded and resent out.	Capital Reserve Fund funded by residents many years ago

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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
						be redone). Kearsarge Mountain Road has many trees regularly falling down on the roadway, forcing isolation for a period of time. Options are available for easements for an egress but more work needs to be done.				
#33-2008	Identify, Designate and Sign Class VI Roads As Fire Lanes to Reduce Wildfire Damage	Short Term 1-2 Years	67	Fire Department , with Board of Selectmen	\$250 posting + \$750 signage	Policy under RSA 229:5 will protect private and public property for wildfires and fires in addition to recreation access. Fire Chief will partner with the Board of Selectmen to identify and designate the roads and erect signage. Davis Road could be a good one. More Time	Lightning, Wildfire, Wind, Winter, Tree Debris, Utility	Multiple Class VI town unmaintained roads	Cost will pay for the public hearing notice required for the Board of Selectmen hearing and signage for 5 roads (10 signs at \$75).	Fire Department Operating Budget
#68-2014	Upgrade Ladd Lane Culvert over Davis Brook to Reduce the Impact of Floods and Erosion	Short Term 1-2 Years	66	Public Works Department	\$10,000	Two 36" culverts on Ladd Lane are rotted out and need to be upsized to 48" corrugated steel. More Time, More Funding. Possible completion in 2025	Flood, Ice Jam, Scouring & Erosion, Debris	Ladd Lane over Davis Brook	Cost is for replacement of failing culverts with a new 48" X 30 ft PVC pipe.	DPW Budget
#69-2014	Reconstruct 250 Feet of Retreat Road to Reduce Erosion and the Risk of Washouts	Medium Term 3-4 Years	66	Public Works Department	\$7,000	Stop on-going erosion occurring to the road bed by adding 60' of 24" pipe and raise roadbed. More Time, More Funding. Other projects with higher priority first.	Flood, Scouring & Erosion, Debris	Retreat Road area	Cost is for upgrading existing road bed.	DPW Budget
#70-2014	Install Dry Hydrant on West Joppa Road By Covered Bridge to Reduce the Impact of	Short Term 1-2 Years	74	Fire Department	\$7,500	Improved fire protection by installing dry hydrant to protect public and private property. Hydrant to be installed in accordance with the Rural Water	Lightning, Wildfire, Drought, Hazardous	West Joppa Road on Warner River	Cost is for permits, installation of 8" PVC pipe for dry	CRF Reserve Dry Hydrant Fund

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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
	Fire, Wildfire and Lightning					Supply Plan. More Time (may be done in 2024-2025)	Materials, Fire		hydrant & fittings and obtaining new easement documentation.	
#71-2014	Install Dry Hydrant on West Roby District Road to Reduce the Impact of Fire, Wildfire and Lightning	<u>Short Term</u> <u>1-2 Years</u>	74	Fire Department	\$7,500	Improved fire protection by installing PVC pipe dry hydrant to protect public and private property. Will update Rural Water Supply Plan once completed. More Time (may be done in 2024-2025)	Lightning, Wildfire, Drought, Hazardous Materials, Fire	West Roby District Road on Warner River	Cost is for permits, installation of 8" PVC pipe for dry hydrant & associated fittings and obtaining new easement documentation.	CRF Reserve Dry Hydrant Fund
#73-2014	Upgrade a Box Culvert Bridge on 189/099 North Village Road over Silver Brook At the Dam to Reduce the Impact of Floods and Erosion	<u>Medium Term</u> <u>3-4 Years</u>	73	Public Works Department	\$220,000	After work for the dam, cost increased. Added to the state bridge list. Culvert is 7 X 9 X 50 Ft multi-plate that is rotting below water line. To be replaced with open bottom box culvert. More Time (on NH DOT Bridge Aid program for 2025-27 time frame. 189/099 (Town) North Village Road Bridge over Silver Brook is still red listed. Planned for the NH DOT Ten Year bridge list for 2026-2027 rehabilitation. Town pays 20% from CRF. in 2026 from Town CRF on	Flood, Ice Jam, Scouring & Erosion, Debris	North Village Road at Silver Brook	Cost is for 20% of design and installation of open bottom box culvert engineered to handle storm surge. Total cost to town is about \$80,000.	Towns' cost is 20%, NH DOT Bridge Aid 80%
#76-2014	Install a Box Culvert on Schoodac Road Culvert over	<u>Short Term</u> <u>1-2 Years</u>	72	Public Works Department	\$300,000	The undersized culvert of Schoodac Road needs to be upsized to a box culvert and the road bed needs to	Flood, Ice Jam, Scouring &	Schoodac Road over	Cost is for culvert replacement	CIP, Cap Reserve Fund (design

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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
	Intermittent Stream to Reduce the Impact of Floods and Erosion					be raised by several feet. When the Warner River backs up and the intermittent stream flows, the road floods and the shoulders erode. 'More Time, More Funding. Currently designed and permitted.	Erosion, Debris	Intermittent Stream	with upgraded open bottom box culvert adequately sized by engineer.	work) Bridge & DPW Budget. Hazard Mitigation Grant Program but couldn't fulfill BCA.
#77-2014	Install a Box Culvert on Poverty Plains Road Culvert over Schoodac Brook to Reduce the Impact of Floods and Erosion	Long Term 4-5 Years	72	Public Works Department	\$350,000	Existing 7 X 9 X50 ft multi plate culvert is rotted below the waterline. Replace this multi plate culvert with a bottomless box culvert. Need to be replaced when funds become available. 'More Time, More Funding - DPW to investigate in 2024	Flood, Ice Jam, Scouring & Erosion, Debris	Poverty Plains Road over Schoodac Brook	Cost is for design and installation of open bottom box culvert, approx. size 8' X 8" X 60 ft.	CIP, Cap Reserve Fund Bridge. Hazard Mitigation Grant Program if can fulfill BCA
#79-2014	Install Two Box Culverts on Red Chimney Road over Ballard Brook and to Reduce the Impact of Floods and Erosion	Short Term 1-2 Years	73	Public Works Department	\$380,000 (\$260k grant), plus \$300,000 for second	First culvert is 5' by 40 ft concrete undersized. To be replaced with an 8 or 9 foot open bottom box culvert. Replace with an 8 to 9 foot open bottom pipe taking into consideration fish migration. More Time (to be done in 2024, grant funds through Cons Comm ARMS and ARPA to be spend by end of 2026). Second culvert to be replaced is 4' x40 ft oval pipe culvert as a second project.	Flood, Ice Jam, Scouring & Erosion, Debris	Red Chimney Road over Ballard Brook	Cost is for design, permitting and installation of open bottom box culvert. Currently waiting for the delivery of the structure April 2024.	ARMS \$160,000 and ARPA \$100,000 Funds available. Town portion from Bridge and Highway Construction CRFs
#80-2014	Install a Box Culvert on Mink Hill Lane over Silver Brook to Reduce the Impact of Floods and Erosion	Long Term 4-5 Years	69	Public Works Department	\$350,000	Existing culvert has been repaired, but the project is not in CIP for any funding available now. Multi-plate that is rotting below water line. Needs to be repaired in-kind and	Flood, Ice Jam, Scouring & Erosion, Debris	Mink Hill Lane over Silver Brook	Cost is for design & installation of Open Bottom Box	CIP, existing Capital Reserve Funds, may

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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
						when funds are available, to be replaced. 7'X 9' by 50ft Replace with Open Bottom Box Culvert to be sized by engineer. 'More Time, More Funding. Concrete invert installed.			Culvert with rip rap to protect opening of culvert.	apply for grants
#81-2014	Install a Box Culvert on East Joppa Road over Bartlett Brook to Reduce the Impact of Floods and Erosion	<u>Long Term 4-5 Years</u>	71	Public Works Department	\$600,000	Existing pipe is 24" by 80 ft Concrete pipe. More likely scenario is to replace with a box culver instead of replacing with 5 FT ' by 80 ft plastic pipe and add rip rap as appropriate at ends. More Time, More Funding (ARMS grant might be funding as secondary project). Design & permitting being done as part of ARMS grant in 2024, total cost estimated to be \$1.2 million.	Flood, Ice Jam, Scouring & Erosion, Debris	East Joppa Road over Bartlett Brook	Cost is for design, permitting and installation of open bottom box culvert.	CIP, ARMS grant, existing Capital Reserve Funds, may apply for grants
#82-2014	Upgrade Newmarket Road Culvert over Davis Brook to Reduce the Impact of Floods and Erosion	<u>Long Term 4-5 Years</u>	69	Public Works Department	\$75,000	Culvert is Concrete undersized 30" by 60 ft causing washouts. Replace with 5 ft by 60 ft plastic culvert pipe. More Time, More Funding is needed.	Flood, Ice Jam, Scouring & Erosion, Debris	Newmarke t Road over Davis Brook	Cost is for purchase and installation of culvert pipe	CIP, Highway Construction Capital Reserve Funds
#84-2014	Install Dry Hydrant on Burnt Hill Road to Reduce the Impact of Fire, Wildfire and Lightning	<u>Medium Term 3-4 Years</u>	74	Fire Department	\$7,500	Improved fire protection by installing PVC pipe dry hydrant to protect public and private property Will update Rural Water Supply Plan once completed. Discussions have been held with landowner and an easement is required. 'More Time, More Funding	Lightning, Wildfire, Drought, Hazardous Materials, Fire	Burnt Hill Road	Cost is for permit, installation of 8" PVC pipe for dry hydrant & associated fittings. Need to obtain an easement.	Capital Reserve Fund for Dry Hydrants

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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
#87-2014	Encourage the Installation of a Standby Generator for North Ridge Elderly Housing to Reduce the Impact of Wind, Storm or Winter Events	<u>Short Term</u> <u>1-2 Years</u>	67	Select Board with Emergency Management, North Ridge Board	\$0	Talk with North Ridge Elderly Housing to install Standby Generator capable of providing power to the 35 units during loss of power. Assist the facility with obtaining funding for the generator. This will enable residents to remain at the facility during storm/disaster events. Many residents do not have vehicles for transportation. Cost is unknown, perhaps \$20,000 - \$25,000, but not paid for by the Town. Lower Priority	Temperature, Fire, Public Health, Wind, Winter	North Ridge Elderly Housing	Cost is in-kind staff and volunteer labor.	Generator grants to be researched for the facility by the Town, possibly EMPG
#96-2019	Install Public Works Building Fire Suppression System and Cistern to Reduce the Impact of Fire Events	<u>Long Term</u> <u>4-5 Years</u>	65	Public Works Department	\$275,000	The Transfer Station and Highway Department (new 20 year steel frame building) do not have a fire suppression systems. A single water source cistern for both buildings (\$200,000) is needed, plus the fire suppression for Public Works building. More Time, More Funding	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human	Public Works Building	Cost is for installation of cistern or well and associated pumps to be able to supply PWD building with water in the event of fire.	CIP, CRF Highway \$190,000 and DPW Operating Budget
#97-2019	Replace Old Sewer Pipes As Necessary In Coordination with Other Projects to Protect Groundwater and Reduce Risk from Flooding and Earthquake	<u>Long Term</u> <u>4-5 Years</u>	67	Warner Village Water District	\$200,000	Warner Village Water District has some 100-year old iron sewer pipes in need of replacement on West Main, East Main, Kearsarge Mtn Road. When underground Town projects are initiated, the pipes may be replaced in these areas. Project likely more than 5 years. 'More Time (replaces when underground construction projects are completed). Town water & sewer stops at second apartment at 115 Kearsarge Mountain Road.	Flood, Scouring & Erosion, Earthquake, Water Quality, Public Health	Warner Village Water District	Cost is for permits and pipe replacement	WV District Warrant article

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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
#98-2019	Upgrade Existing Dry Hydrant Fittings on the Pleasant Pond, Mentis Scientific Inc, Poverty Plains, Retreat Road Dry Hydrants to Reduce the Impact of Rural Wildfires	<u>Short Term</u> <u>1-2 Years</u>	75	Fire Department	\$7,500	Some of the Town's dry hydrants do not work because the connection between the metal and plastic fittings are not sealed properly- may work sometimes and not others. The need exists to fix these long term. More Time.	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human	Pleasant Pond, Warner Power, Poverty Plains, Retreat Road	Cost is for replacement of dry hydrant fittings on 4 # of hydrants.	Capital Reserve Fund - Dry Hydrants
#100-2019	Install Simonds School Fire Suppression System to Reduce the Impact of Fires and a Generator to Reduce the Impact of Wind, Storm or Winter Events	<u>Long Term</u> <u>4-5 Years</u>	63	Kearsarge Regional School District, with help from Simonds Elementary School	\$750,000	Simonds School needs a installed generator to run the school functions in the event of power outage. The building does not have a sprinkler system, but there is a fire alarm system. Limited location for evacuation of children, shuts down entire Main Street area. Kids drill evacuation to the Church, buses pick them up, worked well. 7 communities in District. Students will be evacuated to the KRSD Middle School if power outages occur. Placing an installed generator may require fuel delivery. Project may go beyond 5 years. Water main pipe must be extended into school ground for system. 'More Funding.	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human	Simonds School	Cost is for sprinkler system installation labor, pipe materials, (\$575,000), installation of generator with labor, material and pad (\$150,000).	School District CIP, then Warrant Article (School)
#102-2019	Install Lightning Rods and Grounding Panels At the Police Department, New Fire Station, Transfer Station, Public Works Facility, Town Hall, and Pillsbury Free Library to Reduce the Impact of Lightning	<u>Medium Term</u> <u>3-4 Years</u>	69	Board of Selectmen with Fire Department and Emergency Management assistance	\$140,000 (\$20,000 per building)	Most Town Buildings do not have lightning rods and surge protectors at the main electrical box source to offset lightning strikes. Lightning is a concern as the computer systems are vulnerable as well as the buildings themselves and their contents. Lightning has caused similar problems in surrounding	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human	Police Department, New Fire Station, Transfer Station, Public Works Facility, Town Hall,	Estimated cost is for 7 Town Buildings rod, electrical panel, wires and labor.	Operating Budget of Town Depts or CIP to get all Buildings done at once

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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
						communities. Lower Priority, More Funding		and Pillsbury Free Library		
#112-2019	Install a Static River Gage At West Roby District Road on the Warner River to Reduce the Impact of Flooding	<u>Short Term</u> <u>1-2 Years</u>	69	Emergency Management	\$4,000	Install a static river gage on the West Roby District Road bridge to have an immediate, monitorable early warning system for high flood events. This is a low-cost measure that could be observed by the public. Lower Priority (seek completion in 2024, coordinate with dry hydrant install)	River, Flood	Old Bridge Abutment at West Roby	Estimated cost is for installation and materials for a static river gage.	Emergency Management Operating Budget or EMPG or HMGP
#125-2024	Redesign the Transfer Station with a Fire Suppression System and Generator to Reduce the Impact of Fire Events	<u>Long Term</u> <u>4-5 Years,</u> <u>Phase I of II</u>	63	Public Works Department	\$500,000 - \$2 million	The Transfer Station is too small for its the growth and waste of the Town and does not have fire suppression systems. Encourage more recycling, and include a fire suppression system and generator on the existing site -> long-term project between 2026-2034. Cistern to be included with the Public Works building. Separate for efficiency, upgrade equipment and building, keep public safe from recycling and equipment. Add-enlarge the space, add storage, use safety and environmental conscious features,	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human	Public Works Building	Cost is for installation of cistern or well and associated pumps to be able to supply PWD building with water in the event of fire.	Warrant article, Bond, CRF Highway and CRF Transfer Station Article, add to Capital Improvement Program
#126-2024	Work with NHDOT on Design of the New NH 127 Bridge over the Warner River to Ensure Ice Jams, Scouring and Flooding Will be Addressed	<u>Short Term</u> <u>1-2 Years</u>	74	Public Works Department	\$0	Discuss with NH DOT regarding Bridge 254/180 NH 127 at Dustin Road over Warner River- Bridge Replacement, in project design in 2024 (out about 1 year of service, construction in 2025). Possible bicycle lane under consideration. Lots of ice jams in this area and	River, Ice, Scouring, Flood	Bridge 254/180 NH 127 at Dustin Road over Warner River	Cost is in-kind staff and 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
						flooding. Want to install a dry hydrant as part of the design. The dynamic USGS river gage is outside of the project area and will remain.				
#127-2024	Encourage the NHDOT to Rehabilitate the Handrail and Guardrails on 187/122 At NH 103 over Willow Brook and Upgrade the Sidewalk to ADA Compliance Standards	Short Term 1-2 Years	68	Public Works and Board of Selectmen	\$0	Discuss with NHDOT the need for rehabilitation and handrails/guardrails at this location. 187/122 (State) NH 103 over Willow Brook. East Main Street Bridge @ Handrail/guardrails on both sides of Main Street adjacent to sidewalks are rusted and unsafe, in a state of disrepair. Sidewalk does not meet ADA compliance. Public safety issue. Location is at the Maples Apartments.	Public Safety	187/122 (State) NH 103 over Willow Brook (East Main Street Bridge)	Cost is in-kind staff and volunteer labor.	N/A
#128-2024	Retrofit the Warner Community Center to Current Code Compliance to Reduce the Impact of Wind and Winter Storms	Long Term 4-5 Years, Phase I of II	57	Board of Selectmen	\$750,000 - \$1,500,000	Important historical building, Old Graded School, used for community services. Discussions being held for elevator \$800,000 (or other lower cost options like a lift), stairway handrails, ballasts. Building already has fire suppression, and any structural stability for earthquake or wind events. The State of NH International Building Codes 2018 are the latest adopted by the state, and Warner will automatically adopt the latest versions.	Earthquake, Tornado, Hurricane, Public Safety	Warner Community Center	Cost range is for the structural improvements and materials for the building.	Warrant article, USDA Community Rural Development grants, LCHIP grant, NH Preservation Alliance
#129-2024	Develop An Engineering Study for Structural Upgrade of Kearsarge Regional School District Schools (Including Simonds School) to	Study is Short Term 1-2 Years, Improvements Long Term 4-5 Years,	65	KRSD & Simonds School Principal	\$0 to Town (unknown to School District)	KRSD hired an architectural firm to complete an engineering study of Simonds School and other district schools. This study will help to determine the needed infrastructure projects for a long term plan. Simonds School does have some potential structural issues	Drought, Wildfire, Winter, Ice, Cold, Heat, Dam, Flood, River, Earthquake	Simonds School	Cost is to cover the engineering study, paid for by the KRSD.	School District CIP, then Warrant Article (School)

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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
	Improve Resilience to Natural Hazards	Phase I of II				in the old section of the building. Retrofit and upgrade as recommended to provide resilience to severe weather events, natural hazards, and human and tech hazards.	, Landslide, Health/ Biologic, Solar, Wind, Thunderstorm, Downburst, Lightning, Tornado, Hail, Tropical, Tech/ Human			
	HMC ADD NEW ACTION HERE after 2025									
	HMC ADD NEW ACTION HERE after 2025									

Source: Warner Hazard Mitigation Committee

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Table 8.3
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
#39-2008	Develop a Study on a Potential Third Municipal Water Well and Drill the Well to Protect Water Quality	<u>Long Term</u> <u>4-5 Years,</u> <u>Phase I of III</u>	66	Warner Village Water District	\$1,000,000	Project will locate a well that is farther away from the existing wells and to mitigate a potential hazardous material spill impact to the Warner River. During drought conditions, having a backup well is prudent. Good sources further north on the River, have land that should be feasible from previous studies. More Funding, Lower Priority. Study is first, \$50,000, Wells were rehabilitated, working as they are supposed to now. The existing study (done 1995) would be updated for a potential new well (3rd) to be located elsewhere.	Earthquake, Drought, Public Health, Hazardous Materials, Water Quality	To be determined	Cost is will fund an engineering study, permitting, piping to identify a suitable location for a third well.	Warner Village Water District user fees, additional tax in Precinct, USDA Rural Utilities Development and CDBG Grants
#103-2019	Research and Install Beaver Deceiver or Alternative Devices At a Trial Location Where Beaver Activity Is Highest to Discourage the Development of Natural Dams	<u>Short Term</u> <u>1-2 Years</u>	57	Public Works Department	\$2,500	Beaver dam issues have been experienced in the Mink Hills, French Brook/North Road, Mason Hill/Bagley Pond, Poverty Plains Road/wetland culvert, Schoodac Road/Schoodac Brook, Childrens Brook/Pumpkin Hill Road, Silver Lake. Breakage at some locations may washout roads. Talk with other communities for their experiences in using them and other techniques. Lower Priority	Flood, Dam, Wind, Debris	Entire Town	Cost is for hiring an outside contractor to install purchased devices.	NH Fish and Game, seek grants, DPW Operating Budget
#104-2019	Develop a Hazard Tree Removal Policy Enabling the Advance Trimming of Hazardous Trees to Reduce Storm Damage	<u>Short Term</u> <u>1-2 Years</u>	75	Public Works Department with Emergency Management	\$250	There are many vulnerable Populations and groups of residents in Warner residing on roads with only one way in/out. Sky Island apartments on Waldron Hill is vulnerable to power outages because of multiple trees down	Wind, Tropical, Winter, Lightning, Wildfire	Entire Town	Cost is for public hearing noticing.	Town Office 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
						along the one access road (North Village Road). Could evacuate on Flanders Road (maintained), but limited access in and out depending where tree falls. Kearsarge Mountain Road has this same problem (about 60 homes) as does Magdalen College. Developing a hazardous tree removal policy may help eliminate some of these situations. Also, many trees have fallen into the West Branch River and may cause a debris impacted infrastructure if a large flood event occurs. More Time (should be done in 2024)				
#114-2019	Develop Stormwater Infrastructure Asset Management Plan for Stormwater Runoff In the Village	Long Term 4-5 Years	75	Town Administration, Public Works Dept assistance	\$25,000	Stormwater treatment system would be necessary before release of water into the Warner River. Later on, will need the construction component of the stormwater system. Odd Fellows Home drainage needs to be into a new catchment area. Lower Priority, More Funding. Research needed on this Action - Public Works to review material and report back to HMC	Flood, Scouring & Erosion, Earthquake, Water Quality, Public Health	Village	Cost is for the Plan. https://www.des.nh.gov/water/stormwater	Reimbursement grant from NHDES, forgivable loan - Safe Water Revolving Funds
#130-2024	Remove the Trees from and Repair the Retaining Wall At the Laing Bridge on the Warner River with the Cooperation of the State	Short Term 1-2 Years	73	Public Works Department with NH DOT	\$10,000	Trees in the retaining wall are within the NHDOT right of way, who also owns the wall. Old Iron Laing Bridge 151/037 (Town owned) has had ice jams (2018 was last) from the Warner River. Future potential for damage, flooding, debris. Water heads at the bend into the bank (the retaining wall has trees	River, Scouring, Erosion, Debris Impacted Infrastructure	Old Iron Laing Bridge 151/037 on Warner River	Cost is for the potential cost share of retaining wall repair and tree removal.	DPW 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
						growing on through it) on NH 103, scouring of bank and wall.				
#131-2024	Work with Eversource to Take Down the Identified Dead and Diseased Trees Proactively on Kearsarge Mountain Road to Reduce the Impact of Wind and Winter Storms	Short Term 1-2 Years	74	Public Works Department	\$0	Kearsarge Mountain Road has many trees regularly falling down on the roadway, forcing isolation for a period of time. Options are available for easements for an egress but more work needs to be done. INFO: Have 178 trees left to cut on KMR per Eversource, have been marked for several years but not yet removed.	Winter, Ice, Health/Biologic, Wind, Thunderstorm, Downburst, Lightning, Tornado, Hail, Tropical, Tech/Human	Kearsarge Mountain Road	Cost is in-kind staff and volunteer labor.	N/A
#132-2024	Develop a Policy to Provide Water to Farms in the Event of Extreme Drought	Short Term 1-2 Years	66	Agriculture Commission with Warner Village Precinct and Emergency Management	\$0	Drought conditions can result in loss of water to agricultural operations, pasture & vegetable, orchards, and horse farms. Water needed for irrigation and for animals. [Water restrictions are imposed by Warner Village Water District Precinct during drought conditions - recreational water, lawn, car washing, etc but they only apply to those within the area of the district.] Arrangements may be possible to obtain low cost water from the Precinct to agricultural farms outside of the boundary.	Drought	Agricultural operations	Cost is in-kind staff and volunteer labor.	Grants might be sought for longer-term water options
#133-2024	Encourage the Pleasant Lake Campground to Test the Lake and Private Beach for Cyanobacteria and Water Contamination	Short Term 1-2 Years	66	Emergency Management with Health Officer	\$0	Water contamination or cyanobacteria can occur at the privately owned Pleasant Lake campground- 17 acres- (not tested by NHDES) which has a boat launch. Parks & Rec will post closures quickly pending test results (1 day).	Extreme Heat, Public Health, Biologic	Pleasant Lake Campground	Cost is in-kind staff and 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
						Test weekly during the summer months and enact regular closure measures when the levels are high enough to maintain public health.				
	HMC ADD NEW ACTION HERE after 2025									
	HMC ADD NEW ACTION HERE after 2025									

Source: Warner Hazard Mitigation Committee

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Table 8.4
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
#106-2019	Develop a Public Education Program About Potential Water Contamination In Village Area from Sewer Line Breakage	<u>Short Term</u> <u>1-2 Years</u> <u>then</u> <u>Ongoing</u>	67	Warner Village Water District	\$300	Water contamination or loss of water or sewage due to earthquake in the Warner Village area may have public health effects on businesses and residents. Some pipes are 100 years old and are more susceptible to breakage. Educational materials are sent out regularly on various topics, business inspections, in quarterly invoices. More Time, Lower Priority	Earthquake , Public Health, (Water Quality)	Warner Village Water District	Cost is for paper and printing, can place info into bills.	Warner Village District Operating Budget or User Fees
#107-2019	Develop a Public Education Program for Tying Down Propane Tanks In Areas Susceptible to Flooding to Reduce the Risk of Explosion and Hazardous Spills	<u>Short Term</u> <u>1-2 Years</u> <u>then</u> <u>Ongoing</u>	67	Emergency Management with Town Office assistance	\$500	(Haz Materials) Flooding along the Warner River can result in flooding to the tanks at Kearsarge Heating Oil. Tom’s Pond from Mentis Scientific and along Warner River. Small and large gas, propane, LP tanks (including personal propane grill tanks) can float down the river during flooding conditions. Information can be placed in the quarterly newsletter, Town report. May work with fuel companies to have them hand out flyers. Can place fact sheets, laminated sign at locations where refillable grill propane tanks are sold. Reach out to gas companies for their assistance. More Time, Lower Priority	Flood, Hazardous Materials, Fire / Explosion	Warner River, Floodplains , Brooks	Cost is for paper and mailing to Warner River abutting property owners. Ask fuel companies to send out info with their bills.	Emergency Management Budget
#110-2019	Require Town Staff to Take Courses Related to the Prevention of Cyberattacks on the Town Computer Systems	<u>Short Term</u> <u>1-2 Years</u> <u>then</u> <u>Ongoing</u>	73	Town Administration with IT assistance	\$0	US Dept Homeland Security will evaluate Town Hall infrastructure. Cyber attack prevention taught by Primex. Care must be taken with municipal data. With sophisticated cyber attack methods, the Town staff in all Departments should be trained in how to identify threats and where to	Cyber	Town Computer Systems	Cost is for multiple employees to attend an in-person class, then following up with webinars. Town	US Homeland Security, Primex

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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
						report them. IT has evaluated systems, as has Primex (for liability). Town systems firewall needs some additional work. More Time, More Staffing (courses available through Primex)			staff and volunteer labor is in-kind.	
#111-2019	Provide Public Education on How to Personal Prevent Cyber Attacks and Breaching of Data, Identify Theft	Medium Term 3-4 Years	64	Police Department, Welfare Office	\$0	Bank sends out information to customers. Can send out newsletters referring govt sites, subscriptions, monitoring for malware. Newsletter articles. Police Dept has flyers in the lobby. Social media, websites. "Coffee with the Cops" types of local presentations could be held in town (Andover did this). Lower Priority	Cyber	Entire Town	Cost is for in-kind staff and volunteer labor.	N/A
#115-2019	Obtain Information on Municipal Protection from Electromagnetic Pulse (EMP) and Provide Public Education on Personal Protection	Short Term 1-2 Years then Ongoing	53	Emergency Management	\$0	Website, newsletter, brochures about developing EMP protection plan to protect municipal and personal electronics. There are several ways to protect against an EMP attack. One EMP protection technique is known as electrical shielding. If an electrical cable includes a grounded shield, the electromagnetic pulse won't penetrate the shield. The town must research, be prepared and provide the information to residents for public awareness. More Time, Lower Priority	Solar, Geomagnetic Storms, Terrorism	Entire Town	Cost is for in-kind staff and volunteer labor.	N/A
#134-2024	Provide Education and Outreach with Ideas for How Homeowners Can Protect Themselves Against the Impacts of Solar Storm Events	Long Term 4-5 Years Then Ongoing	68	Emergency Management	\$0	Solar storms can produce an electromagnetic pulse that takes out radio, satellite, electrical grid. This can apply to the whole town and all regional systems such as the emergency communications, and water, sewer systems. New information should become over time	Solar, Tech (Outages)	Entire Town	Cost is for in-kind staff and 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
						as to how municipalities and towns can protect themselves.				
#135-2024	Encourage the United Church of Warner to Assess and/or Reinforce the Structure Resiliency for Earthquake, Storm, or Extreme Temp Events and Provide Resources to the Community	<u>Short Term</u> <u>1-2 Years</u> <u>then</u> <u>Ongoing</u>	73	Emergency Management, with United Church of Warner	\$0	An earthquake, high wind, and lightning can result in potential building damage to the wooden churches in Warner. Power and internet loss can occur. United Church of Warner has a generator to prevent closure of this community building that opens as a backup shelter/warming center. There is a lightning rod with grounding wire on the steeple. On Town water and sewer. The steeple could be the most vulnerable but was rehabilitated less than 10 years ago. Assessing downstairs windows for potential replacement. It is the emergency evacuation site for Simonds School.	Winter, Ice, Cold, Heat, Dam, Flood, River, Earthquake, Solar, Wind, Thunderstorm, Downburst, Lightning, Tornado, Hail, Tropical, Tech/Human	United Church of Warner	Cost is for in-kind staff and volunteer labor.	N/A
#136-2024	Engage In Public Outreach and Education on the Benefits of Lightning Rods and Grounding Systems to Wooden, Historic Buildings Including Barns and Private Homes	<u>Short Term</u> <u>1-2 Years</u> <u>then</u> <u>Ongoing</u>	75	Fire Department with Building Inspector	\$0	Lightning can result in potential fire to any of the historic buildings, which may have people inside requiring rescue, and which may cause severe damage to or potential loss of the facility. Town website, Library newsletter, social media. Incorporate into Building Permit checklist. Could enforce through Zoning Ordinance (an update would be needed) for new development. NPS Brief #50 Lightning Protection for Historic Structures	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human	Entire Town, New Development	Cost is for in-kind staff and volunteer labor.	N/A
#137-2024	Develop a Single Flyer to Educate Residents In Flood Prone Areas About Fertilizers, Septic Systems, Erosion, and Tank	<u>Short Term</u> <u>1-2 Years</u> <u>then</u> <u>Ongoing</u>	75	Emergency Management with Town Office assistance	\$1,000	Provide a single flyer that lists issues for floodprone property owners which includes links for more information. This will help to educate land owners in delicate areas of potential damage and in remediation actions, how to	Health-Water Quality, Biologic, Flood, Erosion and	Warner River, Floodplains, Brooks, Ponds,	Cost is for copies done at Town Hall and a mailing. Produce a color mailer (copy	Emergency Management, Town 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
	Tie-Down Importance to Reduce the Risk of Erosion, Scouring and Washout Explosion Potential and to Increase Water Quality					treat their property and permits to seek. Includes temporary and permanent erosion control. Nitrogen, fertilizer for lawns, geese, high temperatures, people, and the level of the water can create contamination or cause cyanobacteria to flourish. At Silver Lake Beach (Warner Town Beach), an aerator was installed in 2023 but was not found to be helpful. Seasonal septic systems constructed decades ago now support full-time homes around Silver Lake, Pleasant Pond, Tom Pond are unlikely to function properly. A public education campaign would be useful to ensure the public understands what types of activities are harmful to water quality. Coordinate with Warner River Local Advisory Committee. Place BMPs, articles, links to resources in Library newsletter and on Town website.	Scouring, River, Hazardous Materials, Fire / Explosion	Susceptible Roads	cardstock) for \$400, then mail to every PO box and address in Warner for \$600 using Every Door Direct Mail (EDDM).	Conservation Commission Budget, Donations
#138-2024	Provide Repeated Information and Exposure to Residents on Basic Emergency Preparedness for Severe Weather Events	Short Term 1-2 Years then Ongoing	62	Emergency Management - info sent to all Town Depts and School for redistribution. Capital Area Public Health Network	\$1,500	Resident awareness of existing information on the Town website is limited. 72-hour emergency kit, family emergency plan, basic emergency preparedness, smoke detector batteries is needed. www.readynh.gov Repeated exposure from different venues is necessary to ensure households prepare adequately for an emergency based on a severe weather event and natural disaster. Repeated locations: Town Facebook page, Fire Department FB, Police Dept FB, Let's Talk about Warner FB, Simonds PTO FB, United Church of	Drought, Wildfire, Winter, Ice, Cold, Heat, Dam, Flood, River, Earthquake, Landslide, Health/Biologic, Solar, Wind, Thunderstorm,	Entire Town	Cost is for flyer development, copying, costs for in person booths. Time is volunteer.	Donations (Festival Committee, Girl Scouts, Non-Profits, etc), Emergency Management Budget, Capital Area

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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
						Warner FB, Town Library newsletter, Town website, Library Instagram, Library X (Twitter), Simonds School paper flyer distribution, Action developed from Survey. One on one education is also needed - set up and staff emergency preparedness booths at Fall Foliage Festival, Election events, Food Pantry. Ask Visiting Nurses and home care organizations to find out if they can go over what is needed with their clients. Older people keeping warm during the winter is a concern, those with pets have a tendency to not visit shelters. Work with the Girl Scouts (made a flyer 8 years ago). Place flyer at Town Clerk Office, Sugar River Bank, Library, local restaurants. Have a mock "go to bag" at 3 locations, like Bank, Town Office. Include emergency contact information.	Downburst, Lightning, Tornado, Hail, Tropical, Tech/ Human			Public Health Network
	HMC ADD NEW ACTION HERE after 2025									
	HMC ADD NEW ACTION HERE after 2025									

Source: Warner Hazard Mitigation Committee

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 **2024**, 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.

There is latitude in the **2024 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 (except the three new questions regarding funding, staffing, and historic preservation) 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?
- Does the action offer reasonable benefits compared to its cost in implementing?
- Is the action legal?
- Is the action support or protect the environment?

Action Completion Achievability	
RANKING	SCORE
Excellent	75 - 60
Good	45 - 59
Fair	44 - 30
Poor	29 - 15

- 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. Warner’s **Mitigation Action Plan** STAPLEE rating is shown in **Figure 8.A** and includes a basic benefit-cost ranking as shown in yellow.

Figure 8.A

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, long term goals, Comm goals?)	Meet Regulations? (If there are any)	Protect Sensitive Structures? (Buildings, roads, culverts, trails, human-made things?)	Implemented Quickly? (See also Action Plan for Timeframe)	Socially Acceptable? (People/neighbors/residents/landowners like project?)	Politically Acceptable? (Public officials & decision makers like project?)	Administratively Feasible? (Have admin skills, can do permitting or special paperwork, office-ability?)	Technically Feasible? (Have tech skills, technology or special equipment, engineering, field-ability?)	Have a Reasonable Cost to Benefits Gained? (Will project save \$5 in long term? Increase public health?)	Legal? (Or will be legal upon completion)	Support or Protect the Environment? (Natural resources?)	Have the Funding? (Can funding be obtained?)	Have Necessary Staff or Volunteers? (Personnel, contractors, to work on Action?)	Support Historic Preservation? (Sites, neighborhoods, Town culture, historic markers, new trails?)	Ranking Score 15-75
#57-2008	Update the Subdivision and Site Plan Regulations to Reflect Updated Master Plan to Reduce the Risk of Natural Hazards to Property	5	5	5	4	4	3	4	4	4	4	5	5	2	2	4	60
#59-2008	Update the Zoning Ordinance to Reflect Updated Master Plan to Reduce the Risk of Natural Hazards to Property	5	5	5	4	2	3	4	4	4	4	5	5	2	2	4	58
#94-2019	Obtain Dam Emergency Action Plans for the Significant Lake Todd and Low Hazard Silver Lake & Bear Pond Dams	5	5	5	4	4	4	5	5	5	5	5	5	5	5	4	71
#116-2024	Consider Adopting the Approved HMP Into the Warner Master Plan to Enable a Greater Integration of Natural Hazards and Actions Into Town Planning	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	74
#117-2024	Review and Modernize the 2014 Telecomm Ordinance to Make It Easier for Towers to be Constructed to Enable Better Communication Across Warner	3	4	5	3	2	3	2	5	5	3	5	1	2	3	1	47
#118-2024	Preserve the Remote, Class VI Gravel Roads and Trails in the Mink Hills Area to Protect the Watersheds from Erosion and Degradation	5	5	5	4	2	3	3	3	2	4	3	5	2	3	5	54
#119-2024	Work with the State Legislature to Introduce a Bill to Increase Cellular Coverage to the Entire Town of Warner Area	5	5	5	4	2	4	3	2	2	3	5	2	2	3	3	50
#120-2024	Work with the Consumer Advocate of NH for Assistance with the Public Utilities Commission with the Goal of Obtaining Full Cellular Coverage Across Warner	5	5	5	4	2	4	3	2	2	3	5	2	2	3	3	50
#121-2024	Develop a Radio Frequency Cellular Communications Study to Understand Where the Dead Zones Are Located and What Options the Town Has to Obtain Complete Cellular Coverage Across the Town	5	5	5	4	3	4	4	3	3	3	5	4	2	3	3	56
#122-2024	Develop a New Town Fund for Emergency Management Expenditures	5	5	5	5	4	3	3	4	5	3	5	5	3	4	5	64
#123-2024	Develop a Policy for Calling In Satellite Backup Coverage for Telephone and Internet Communications By Emergency Responders through AT&T Firstnet or Other Services During Major Storm Events	5	5	5	5	4	3	3	4	5	3	5	5	3	4	5	64
#124-2024	Revise Subdivision and Site Plan Review Regulations to Require All Electric Wires Are Placed Underground and Require Tree Planting in the Business Commercial District and Intervale District Areas to Reduce the Impact of Winter, Wind, Ice, and Extreme Heat Events	5	5	5	5	2	4	3	4	5	4	5	4	5	5	5	66
#5-2003	Establish Culvert Replacement Program to Reduce the Impact of Floods and Erosion	5	5	5	5	4	4	4	5	5	5	5	5	5	5	5	72
#6-2003	Develop a Feasibility Study of Emergency Access from Kearsarge Mountain Road for Evacuation to Reduce the Risk of Wildfire, Winter Storms, Fallen Trees and Power Outages	4	5	5	5	2	2	2	4	4	3	5	5	4	5	3	58
#33-2008	Identify, Designate and Sign Class VI Roads As Fire Lanes to Reduce Wildfire Damage	5	5	5	5	3	3	4	5	4	3	5	5	5	5	5	67
#68-2014	Upgrade Ladd Lane Culvert over Davis Brook to Reduce the Impact of Floods and Erosion	4	5	5	5	4	4	4	5	5	3	5	5	3	5	4	66
#69-2014	Reconstruct 250 Feet of Retreat Road to Reduce Erosion and the Risk of Washouts	4	5	5	5	4	4	4	5	5	3	5	5	3	5	4	66
#70-2014	Install Dry Hydrant on West Joppa Road By Covered Bridge to Reduce the Impact of Fire, Wildfire and Lightning	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	74
#71-2014	Install Dry Hydrant on West Roby District Road to Reduce the Impact of Fire, Wildfire and Lightning	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	74
#73-2014	Upgrade a Box Culvert Bridge on 189/099 North Village Road over Silver Brook At the Dam to Reduce the Impact of Floods and Erosion	5	5	5	5	4	5	5	5	5	5	5	5	4	5	5	73
#76-2014	Install a Box Culvert on Schoodic Road Culvert over Intermittent Stream to Reduce the Impact of Floods and Erosion	5	5	5	5	3	5	5	5	5	5	5	5	4	5	5	72
#77-2014	Install a Box Culvert on Poverty Plains Road Culvert over Schoodic Brook to Reduce the Impact of Floods and Erosion	5	5	5	5	3	5	5	5	5	5	5	5	4	5	5	72
#79-2014	Install Two Box Culverts on Red Chimney Road over Ballard Brook and to Reduce the Impact of Floods and Erosion	5	5	5	5	4	5	5	5	5	5	5	5	4	5	5	73
#80-2014	Install a Box Culvert on Mink Hill Lane over Silver Brook to Reduce the Impact of Floods and Erosion	5	5	5	5	2	5	5	5	5	5	5	5	2	5	5	69
#81-2014	Install a Box Culvert on East Joppa Road over Bartlett Brook to Reduce the Impact of Floods and Erosion	5	5	5	5	3	5	5	5	5	5	5	5	3	5	5	71

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Town of Warner, NH Hazard Mitigation Plan Update 2024

8 MITIGATION ACTION PLAN

Action Number	Does the Action..... or Is the Action.....	Reduce Damage? (or Injury)	Contribute to Town Objectives? (Supported by Master Plan, long term goals, Comm goals?)	Meet Regulations? (If there are any)	Protect Sensitive Structures? (Buildings, roads, culverts, trails, human-made things?)	Implemented Quickly? (See also Action Plan for Timeframe)	Socially Acceptable? (People/neighbors/residents/landowners like project?)	Politically Acceptable? (Public officials & decision makers like project?)	Administratively Feasible? (Have admin skills, can do permitting or paperwork, office-ability?)	Technically Feasible? (Have tech skills, technology or special equipment, engineering, field-ability?)	Have a Reasonable Cost to Benefits Gained? (Will project save \$5 in long term? Increase public health?)	Legal? (Or will be legal upon completion)	Support or Protect the Environment? (Natural resources?)	Have the Funding? (Can funding be obtained?)	Have Necessary Staff or Volunteers? (Personnel, contractors, to work on Action?)	Support Historic Preservation? (Sites, neighborhoods, Town culture, historic markers, new trails?)	Ranking Score 15-75
#82-2014	Upgrade Newmarket Road Culvert over Davis Brook to Reduce the Impact of Floods and Erosion	5	5	5	5	2	5	5	5	5	5	5	5	2	5	5	69
#84-2014	Install Dry Hydrant on Burnt Hill Road to Reduce the Impact of Fire, Wildfire and Lightning	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	74
#87-2014	Encourage the Installation of a Standby Generator for North Ridge Elderly Housing to Reduce the Impact of Wind, Storm or Winter Events	5	5	5	4	4	5	5	5	5	5	5	1	5	5	3	67
#96-2019	Install Public Works Building Fire Suppression System and Cistern to Reduce the Impact of Fire Events	5	5	5	5	3	4	5	5	4	5	5	4	4	5	1	65
#97-2019	Replace Old Sewer Pipes As Necessary in Coordination with Other Projects to Protect Groundwater and Reduce Risk from Flooding and Earthquake	5	5	5	5	2	5	5	5	5	5	5	5	2	5	3	67
#98-2019	Upgrade Existing Dry Hydrant Fittings on the Pleasant Pond, Mentis Scientific Inc., Poverty Plains, Retreat Road Dry Hydrants to Reduce the Impact of Rural Wildfires	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#100-2019	Install Simonds School Fire Suppression System to Reduce the Impact of Fires and a Generator to Reduce the Impact of Wind, Storm or Winter Events	5	5	5	5	2	5	5	5	3	5	5	4	2	2	5	63
#102-2019	Install Lightning Rods and Grounding Panels At the Police Department, New Fire Station, Transfer Station, Public Works Facility, Town Hall, and Pillsbury Free Library to Reduce the Impact of Lightning	5	5	5	5	3	4	5	5	5	5	5	5	2	5	5	69
#112-2019	Install a Static River Gate at West Roby District Road on the Warner River to Reduce the Impact of Flooding	5	5	5	5	4	5	5	5	5	5	5	5	3	4	3	69
#125-2024	Redesign the Transfer Station with a Fire Suppression System and Generator to Reduce the Impact of Fire Events	5	5	5	5	3	3	5	5	4	5	5	5	2	5	1	63
#126-2024	Work with NHDOT on Design of the New NH 127 Bridge over the Warner River to Ensure Ice Jams, Scouring and Flooding Will be Addressed	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	74
#127-2024	Encourage the NHDOT to Rehabilitate the Handrail and Guardrails on 387/122 At NH 103 over Willow Brook and Upgrade the Sidewalk to ADA Compliance Standards	5	5	5	5	5	5	5	5	5	5	5	2	5	5	1	68
#128-2024	Retrofit the Warner Community Center to Current Code Compliance to Reduce the Impact of Wind and Winter Storms	4	5	5	5	2	4	5	5	3	3	5	1	2	3	5	57
#129-2024	Develop An Engineering Study for Structural Upgrade of Kearsarge Regional School District Schools (Including Simonds School) to Improve Resilience to Natural Hazards	5	5	5	5	3	4	5	5	5	5	5	3	2	5	3	65
#39-2008	Develop a Study on a Potential Third Municipal Water Well and Drill the Well to Protect Water Quality	5	5	5	5	2	5	5	5	5	5	5	4	2	5	3	66
#103-2019	Research and Install Beaver Deceiver or Alternative Devices At a Trial Location Where Beaver Activity is Highest to Discourage the Development of Natural Dams	5	5	5	5	3	3	3	3	3	3	5	4	2	5	3	57
#104-2019	Develop a Hazard Tree Removal Policy Enabling the Advance Trimming of Hazardous Trees to Reduce Storm Damage	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#114-2019	Develop Stormwater Infrastructure Asset Management Plan for Stormwater Runoff in the Village	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#130-2024	Remove the Trees from and Repair the Retaining Wall At the Laing Bridge on the Warner River with the Cooperation of the State	5	5	5	5	4	5	5	5	5	5	5	5	4	5	5	73
#131-2024	Work with Eversource to Take Down the Identified Dead and Diseased Trees Proactively on Kearsarge Mountain Road to Reduce the Impact of Wind and Winter Storms	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	74
#132-2024	Develop a Policy to Provide Water to Farms In the Event of Extreme Drought	5	5	5	1	4	5	5	5	5	5	5	5	5	5	1	66
#133-2024	Encourage the Pleasant Lake Campground to Test the Lake and Private Beach for Cyanobacteria and Water Contamination	5	4	5	1	5	5	5	5	5	5	5	5	5	5	1	66
#106-2019	Develop a Public Education Program About Potential Water Contamination In Village Area from Sewer Line Breakage	5	5	5	5	3	4	5	4	5	5	5	5	5	5	1	67
#107-2019	Develop a Public Education Program for Tying Down Propane Tanks In Areas Susceptible to Flooding to Reduce the Risk of Explosion and Hazardous Spills	5	5	5	5	3	5	5	5	5	5	5	5	3	5	1	67
#110-2019	Require Town Staff to Take Courses Related to the Prevention of Cyberattacks on the Town Computer Systems	5	5	5	5	5	5	5	5	5	5	5	3	5	5	5	73
#111-2019	Provide Public Education on How to Personal Prevent Cyber Attacks and Breaching of Data, Identify Theft	5	5	5	2	5	5	5	5	5	5	5	1	5	5	1	64
#115-2019	Obtain Information on Municipal Protection from Electromagnetic Pulse (EMP) and Provide Public Education on Personal Protection	2	5	5	3	2	5	5	2	3	3	5	2	5	5	1	53
#134-2024	Provide Education and Outreach with Ideas for How Homeowners Can Protect Themselves Against the Impacts of Solar Storm Events	5	5	5	3	4	5	5	5	5	5	5	5	5	5	1	68
#135-2024	Encourage the United Church of Warner to Assess and/or Reinforce the Structure Resiliency for Earthquake, Storm, or Extreme Temp Events and Provide Resources to the Community	5	5	5	5	5	5	5	5	5	5	5	3	5	5	5	73
#136-2024	Engage in Public Outreach and Education on the Benefits of Lightning Rods and Grounding Systems to Wooden, Historic Buildings Including Barns and Private Homes	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#137-2024	Develop a Single Flyer to Educate Residents In Flood Prone Areas About Fertilizers, Septic Systems, Erosion, and Tank Tie-Down Importance to Reduce the Risk of Erosion, Scouring and Washout Explosion Potential and to Increase Water Quality	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#138-2024	Provide Repeated Information and Exposure to Residents on Basic Emergency Preparedness for Severe Weather Events	5	5	5	2	4	5	5	4	5	5	5	3	4	4	1	62

Source: Warner 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.

PROJECT PHASES

Although there are none in this **2024 Plan**, some Actions could be anticipated for completion beyond after the **5-year** lifespan of a **Plan**. For instance, Long Term Actions (Years **4-5** of the Plan’s lifespan) may run several years beyond **2029**. For these Actions, a series of Phases would be identified, each representing a **5-year** lifespan of the Plan. For example, a **Long Term Phase 1 of 3** Action indicates that through **2029**, **5** years of the project are expected to be worked on, plus an additional **10** years (two more **5-year** Plan lifespans) of the project are expected.

Long Term (4-5 Years of the Plan)

Phase 1 (5 Years = lifespan of the current Plan)

Phase 2 (10 Years = 2 lifespans of the Plan)

Phase 3 (15 Years = 3 lifespans of the Plan)

Currently, the Town has not identified any projects beyond **Long Term, 4-5 Years**.

COST TO BENEFIT ANALYSIS

A simple **Cost to Benefit Analysis** ranking is contained within the enhanced STAPLEE criteria as displayed in the previous **Figure**.

Addressing Hazards with Actions

For the purposes of Action development, the main hazard categories of **Drought, High Wind/Tropical, Wildfire/Fire/Lightning, Flood/River, Winter, Extreme Temperatures, Earthquake/Landslide, Public Health/Biological, Solar** are considered precise enough to represent the hazards being addressed.

Many hazards overlap when an event occurs in Town. With individual, and often similar, natural hazards evaluated in this Plan, it is not always practical to list each one when describing potential Actions to address vulnerabilities. In many cases, listing the more encompassing main hazard categories should accurately define the issues of most 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.

Main Hazard Category	Specific Hazards Included
Drought	Drought
High Wind/Tropical/Storms	Thunderstorms, Downbursts, High Winds, Tornadoes, Tropical and Post-Tropical Cyclones, Hail
Wildfire/Fire/Lightning	Wildfire, Lightning, Fire
Flood/River/Dam	Dam Failure, Inland Flooding, River Hazards
Winter/Ice	Winter Storms, Blizzard, Ice Storm
Extreme Temperatures	Cold Wave, Heat Wave
Earthquake/Landslide	Earthquake, Landslide
Public Health/Biological	Swimming Water Quality, Air Quality, Drinking & Surface Water Quality, Infectious Diseases, Arboviral Diseases, Tickborne Diseases
Solar	Geomagnetic Storms, Solar Radiation, Radio Blackout
Hazardous Materials/Radiological	Hazardous Materials, Radiological
Human Hazard	Crash, Mass Casualty Incident, Cyber Event, Terrorism/ Violence
Technological	Aging Infrastructure, Conflagration (Fire), Long Term Utility, Outage

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 **Thunderstorms, Hail**) or **Tree Debris** from the **Wind** category, **Water Quality** from the **Public Health** category, or **Communications** from the **Long Term Utility Outage**, to provide the specific information needed to understand certain issues in Warner.

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 specific Actions associated with them in the **Mitigation Action Plan**. Otherwise, the reasons why no specific or feasible Actions were developed for the highest **Concerns** is described in **Table 8.5**.

Table 8.5

Committee Assessment of Natural Hazards with Mitigation Actions

CONCERN	Natural Hazard	Committee Assessment of Actions
HIGH	Drought	See Actions related to Drought, Lightning, Extreme Temperatures, and Fire.
MED	Wildfire	See Actions for Wildfire, Tree Debris, Lightning.
HIGH	Winter	See Actions related to Winter, overall Storms, Ice, Tree Debris, Utility Outage.
HIGH	Ice	See Actions related to Winter, overall Storms, Snow, Utility Outage, Tree Debris.
MED	Cold Wave (Extreme Temps)	See Actions related to Drought, Climate Change, Winter Weather, Extreme Heat.
MED	Heat Wave (Extreme Temp)	See Actions related to Drought, Climate Change, Winter Weather, Extreme Cold, Storms.
LOW	Dam Failure	See Actions related to River, Flood, Dam, Erosion, Landslide and overall Storms.
HIGH	Inland Flooding	See Actions related to Flood, Dam, Erosion, River, and Aging Infrastructure.
HIGH	River Hazards	See Actions related to River, Flood, Dam, Erosion, Landslide and overall Storms.
LOW	Earthquake	See Actions related to Earth, Landslide, Erosion, Earthquake, Aging Infrastructure.
LOW	Landslide/Erosion	See Actions related to Earth, Landslide, Erosion, Earthquake, Aging Infrastructure.
EXTR	Public Health/Biologic	See Actions related to Public Health, Health (Water Quality), Infectious, Life & Safety and general natural disaster.
EXTR	Solar Storms and Space Weather	See Actions related to Extreme Temperatures, Aging Infrastructure, Utility Failure.
MED	High Wind	See Actions related to Wind/Thunderstorm/Rain, Tropical, Tree Debris, overall Storms, Utility Outage.

CONCERN	Natural Hazard	Committee Assessment of Actions
MED	Thunderstorms	See Actions related to Wind/Thunderstorm/Rain, Tropical, Hail, Tree Debris, overall Storms, Utility Outage.
MED	Downburst	See Actions related to Wind/Thunderstorm/Rain, Tropical, Tree Debris, overall Storms, Utility Outage.
LOW	Lightning	See Actions related to Wildfire, Wind/Tropical (Storms), Fire, Tree Debris.
MED	Tornado	See Actions related to Wind/Thunderstorm/Rain, Tropical, Tree Debris, overall Storms, Utility Outage.
LOW	Hail	See Actions related to Wind/Thunderstorm/Rain, Tropical, Tree Debris, overall Storms, Utility Outage.
MED	Tropical and Post-Tropical	See Actions related to Wind, Tropical, Tree Debris, overall Severe Weather Storms, Utility Outage.

Source: Warner Hazard Mitigation Committee

Mitigation Action Funding Resource Links:

- US Grants.gov
<https://www.grants.gov>
- FEMA Hazard Mitigation Assistance Grants
<https://www.fema.gov/grants/mitigation>
- Grantwatch (federal, non-profit, business individual grants)
<https://www.grantwatch.com>
- NH Department of Agriculture Markets and Food Conservation Grant Program
<https://www.agriculture.nh.gov/divisions/scc/grant-program.htm>
- NH Department of Environmental Services Business and Community Loans and Grants
<https://www.des.nh.gov/business-and-community/loans-and-grants>
- NH Department of Homeland Security and Emergency Management Resource Center
https://prd.blogs.nh.gov/dos/hsem/?page_id=839
- US Department of Agriculture Natural Resources Conservation Service Programs and Initiatives
<https://www.nrcs.usda.gov/programs-initiatives>
- US Department of Agriculture Rural Development Programs and Services
<https://www.rd.usda.gov/programs-services>
- NH Department of Transportation Community Assistance Programs
<https://www.dot.nh.gov/doing-business-nhdot/municipalities-community-assistance>
- NH State Parks Recreational Trails Program
<https://www.nhstateparks.org/find-parks-trails/find-trails-maps-clubs/grants/recreational-trails-program>
- National Park Service Community Assistance
<https://www.nps.gov/articles/community-assistance-national-regional-programs.htm>
- US Environmental Protection Agency Grant Programs
<https://www.epa.gov/grants/specific-epa-grant-programs>
- FEMA Hazard Mitigation Assistance (HMA) Programs Summary
<https://www.fema.gov/fact-sheet/summary-fema-hazard-mitigation-assistance-hma-programs>

- FEMA: Is a Mitigation Plan Required?** (active, non-lapsed local community Town/City HMP) <https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning/requirements>

The table below summarizes hazard mitigation plan requirements for state, tribal, territorial and local officials that are applying to FEMA for assistance, either directly or through a state as sub-applicants.

Hazard mitigation plans need to be updated and re-submitted for FEMA approval every five years to maintain eligibility.

FEMA Assistance Program (as of April 2024) Click hyperlinks to access grant programs	HMP Required for a Tribal/Local Sub-Applicant (Warner)?
Enabling Legislation: Stafford Act	
Individual Assistance (IA)	No
Public Assistance (PA) Categories A and B (e.g., debris removal, emergency protective measures)	No
Public Assistance (PA) Categories C through G (e.g., repairs to damaged infrastructure, publicly owned buildings)	No
Fire Mitigation Assistance Grants (FMAG)	No
Hazard Mitigation Grant Program Post Fire	Yes
Hazard Mitigation Grant Program (HMGP) planning grant	No
Hazard Mitigation Grant Program (HMGP) project grant	Yes++
Building Resilient Infrastructure and Communities (BRIC) planning grant	No
Building Resilient Infrastructure and Communities (BRIC) project grant	Yes**
Safeguarding Tomorrow Revolving Loan Fund Program	Yes
Enabling Legislation: National Flood Insurance Act	
Flood Mitigation Assistance (FMA) planning grant	No
Flood Mitigation Assistance (FMA) project grant	Yes**
Enabling Legislation: Water Infrastructure Improvements for the Nation (WIIN) Act	
Rehabilitation of High Hazard Potential Dam (HHPD) Grant Program	Yes#

NOTES

+ At the time of the Presidential major disaster declaration and at the time of obligation of HMGP grant funds.

** At the time of obligation of HMGP grant funds for mitigation projects.

* By the application deadline and at the time of obligation of the BRIC or FMA award.

** By the application deadline and at the time of obligation of BRIC or FMA grant funds for mitigation projects.

Mitigation plans must include all dam risk in accordance with the requirements set forth in the [Rehabilitation of High Hazard Potential Dams Grant Program Guidance](#). Dams owned by nonprofit organizations must be located in a jurisdiction with a FEMA-approved local or tribal mitigation plan that includes all dam risks to receive funds.

9 ANNUAL IMPLEMENTATION AND EVALUATION

The Town received FEMA approval for the prior **Hazard Mitigation Plan** in **June 2019**. 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 will 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 will be able to contribute to the relevancy and usefulness of the Plan and to communicate with the Hazard Mitigation Committee where changes will 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 Warner will review, monitor, and update its new **Warner Hazard Mitigation Plan Update 2024**.

Implementation Challenges and Successes

Implementing a Hazard Mitigation Plan is not easy for a small New Hampshire community. No funding is available to oversee the Plan's implementation, and funding might not be available for individual projects. A permanent, volunteer Committee will be needed to control this effort on a regular basis under direction of a Town staff member. There are many aspects to be considered for implementation, whether successful or unsuccessful.

GREAT MITIGATION PROJECTS... AND THE REALITIES OF PROJECT IMPLEMENTATION IN NH

These important but costly and/or time-consuming mitigation projects identified in Warner's **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 will continue.

New Hampshire relies on the **payment of property taxes** and a small selection of **limited state and federal funding opportunities** to develop annual municipal operating budgets that must be approved by voters (residents and property owners) at Town Meetings in most communities. Our population is aging and many are on a fixed income. 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 Town of Warner). Limitations for Action completion exist after the Hazard Mitigation Committee has developed its **Mitigation Action Plan**:

- ✧ **Town Meeting voters decide whether to approve new zoning ordinances** which can help mitigate hazards, and the Planning Board must first be supportive of any ordinance changes.
- ✧ **Town Meeting voters decide upon the \$ amount available to Department Operating Budgets** which often is just sustainable to enable. Voters try not to increase property taxes, which does not allow flexibility to plan ahead.
- ✧ **Town Meeting Voters decide upon expensive warrant articles and CIP items which may not include the Mitigation Action Plan** projects, and they may vote to not expend funds (Capital Reserve Fund) for, nor accept funds (grant) from, a mitigation project.
- ✧ **Town staff have much to accomplish for their normal duties and may not consider Mitigation Action Plan projects a priority.**
- ✧ **Town volunteers** are relied upon to do much of the hazard mitigation work in communities. Many volunteers are at or near retirement age and have held their positions for a decade or more. Few younger people are stepping up to take the place of exiting volunteers.
- ✧ **Town Boards and Departments set their internal priorities** which may not be the same as the **Mitigation Action Plan** projects, including regulation revisions, education and outreach, structural improvements, etc.
- ✧ **Communities often wait years to obtain grant funding for their priority projects** like bridge or road rehabilitation, stormwater upgrades, or brownfields assessments. Most funding programs require a cash match which is where most discretionary monies and Town staff time are channeled.
- ✧ **Communities do not have allocated funding for staff to review and evaluate the Plan** yearly as a Hazard Mitigation Committee, despite federal preference for this activity to occur. Many **Mitigation Actions** will be completed organically by local Departments and Boards instead of being led by a Hazard Mitigation Committee.
- ✧ **Communities feel more comfortable applying for State of New Hampshire grants than for federal grants.** Our State motto is “Live Free or Die” and this independent pride is carried over into people looking for municipal and state problem-solving funding first over federal funding. Grant administration is part of the equation, with less time available to spend administering complex funding programs.

From the outcomes of **2019 Plan**, the Hazard Mitigation Committee considered some of the specific challenges or barriers to its implementation:

2019 PLAN IMPLEMENTATION CHALLENGES







- ➔ **COVID-19 cumulative effects.** This national disaster led to local isolation of residents, reduction of volunteer activities. Town Administration and Town Hall were regularly sick, resulting in a disruption of normal business. Little sense of momentum for any activities. For Meetings, Town used Zoom. Fire and Rescue and Police Department saw similar staffing and volunteer issues. There was a shortage of masks, PPE, hand sanitizer for the duration. State COVID response influenced Town Plan implementation. Focus was on COVID and not on hazard mitigation or any exercises, EOPs. HSEM held Zoom weekly to update to Towns, EMD first, then to other officials later. Momentum was lost in Warner for several years in many areas.
- ➔ **2023-2024 Town Hall and Volunteer Instability.** Select Board reported turmoil & instability in the Town Offices. Two of three Select Board members resigned (temporary Board appointed by Court), Planning Board Chair resigned, Town Administrator resigned, and Tax Collector retired. Volunteers are aging out. Many sick staff members out for an extended duration. Lots of turnover resulted in the lack of consistent business able to be held. Lack of staff and volunteer capacity to implement the Hazard Mitigation Plan, not paid for this work and too many competing activities.
- ➔ **Funding.** Funding is always an issue. The Town must obtain approval of Town voters for projects, for placement into the Capital Improvements Program, and to place funding into Capital Reserve Funds. For grants, the Town must approve and raise matching funds which is a challenge. Currently, there is a lot of competition for other (non-mitigation, non-emergency) projects and funding in Warner.
- ➔ **Inability to hold consistent HMC meetings.** HMC was not able to meet twice per year – this fell apart partially during COVID. It was difficult to get organized without Town Office support. Emergency Management volunteers were focused on solving direct problems, not on long-term planning.
- ➔ **Technology.** Broadband limitations were discovered during COVID. Zoom was new and systems were overloaded until the internet speed caught up. There was a learning curve on the technology. Since 2019, the Town Website was updated significantly but still frustrates many residents (needs to be updated again). Residents cannot find what they are looking for – posted meetings, documents, etc. The site must be made more user friendly (initiative in progress).
- ➔ **Enforcement of codes (or lack of) is seen to be a significant problem.** How regulations can be enforced is another concern. Warner has a paid, part-time Building Inspector on staff. Code Enforcement is the responsibility of the volunteer Select Board.

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- ➔ **Disasters were not declared for Merrimack County.** Storms do not follow County lines - western and eastern Merrimack County experience different damages for different types of events. Not all municipalities in Merrimack County apply under the Pre-Disaster Damage Assessment. April 2024 storm damages did not meet threshold for County disaster and the Town of Warner had to absorb these high expenses into existing budgets. This is just one example of the overall problem.

Understanding the **2019 Plan** challenges enabled the Hazard Mitigation Committee to consider “lessons learned.” These lessons will become important for successful implementation of the **2024 Plan**:

2019 PLAN LESSONS LEARNED

-  **Set up and hold permanent, regular HMC meetings** (2-4 times per year) annually in the interim to review the Plan sections and actions. State the meeting dates and stick to the schedule.
-  **Coordinate between haz mit issues, annual budgeting process, and Town Departments.** Inform the public about the mitigation and emergency management issues to obtain financial support. Tie projects and funding into the annual Department budgets, Town Meeting, warrant articles, and Capital Reserve Funds.
-  **Conduct public outreach for the Hazard Mitigation Plan,** get residents involved, raise overall community awareness of natural hazards and potential mitigation, preparedness, responding issues, funding needs and options.
-  **Coordinate with neighboring communities** to pool resources and knowledge and keep communication lines open. Take a regional approach during response to hazard events.
-  **Prepare for increasingly severe weather** (more events, longer events, more severe events) by getting volunteers ready, increasing budgets, having enough staff on hand, and having more robust infrastructure in place.
-  **More state and federal funding is needed.** To mitigate better, the Town needs to take greater advantage of state and federal grant programs to fund the local and regional needs for hazard mitigation and infrastructure improvement, especially the mandated or regulated projects.
-  **Complete the building permit application update.** When a building permit application is completed, there is currently no requirement for a property plat prepared by a licensed surveyor. The responsibility of adhering to setbacks is spelled out in the building permit and falls on the landowner. Without certified plot plans, determining exact setback measurements (to property line, or proposed or existing buildings) can be difficult. Code Enforcement is often triggered too late or there is pushback by owner. Re-write of the building permit is being completed now (2024).

Even with the challenges, the Town of Warner counted many successes since the **2019 Plan**. Important projects were started or completed and new Committees are working to accomplish priorities that often enhance the capability of hazard mitigation planning:

2019 PLAN SUCCESS STORIES (INCLUDING ACTIONS COMPLETED, RELATED SUCCESSES)

- ✓ **2023 Groundwater Protection Ordinance** was very successful. Endeavor included public education and town approval of ordinance to protect groundwater in the Exits 8-9 vicinity.
- ✓ **2022 Warner follows State Building Codes 2018**, approved by State in 2022.
- ✓ **Box culvert** installed on Joppa Road. Smaller culvert projects were completed on other local roads. Culvert replacement plan is underway.
- ✓ **Roads were upgraded** with new drainage, new subsurfaces, including Pumpkin Hill Road, Schoodac Road, Melvin Road. Resurfacing, ditch lines, redoing edge of roads will reduce the risk of flooding and erosion. Some projects are paid for by taxation, some by NHDOT. Infrastructure investment is critical for security
- ✓ **Dry hydrants** were repaired so they can be used, including Poverty Plains, Pleasant Lake, others.
- ✓ **Gate valve at Silver Lake Dam** was rebuilt. This allows the Town to control the water level.
- ✓ **Grants have been helpful** in keeping the Town operations working at better standards. EMPG for camera system for EOC, buzz in system for EOC. EMPG for EOC operations, replacing computers and an OWL camera. NHDES ARMs grant for replacement of 5' culvert pipe with a box culvert on Red Chimney Road.
- ✓ **Pillsbury Free Library digital newsletter** reaches 1,200+ subscribers, sent weekly. Keeps subscribers aware of what is happening in Warner.
- ✓ **Community Power (2023)** – to be implemented in 2024, enables residents and municipality to opt-in to lower-cost electricity.
- ✓ **Online tax mapping** to replace the paper tax maps (Cartographic Associates), integrating the assessors database (Avitar). All parcels and tax cards will be on the internet now. Implemented in 2024, new, easier assessing software.
- ✓ **Warner Housing Advisory Committee (2024)** is working to address the various housing issues in the Town. A large community survey was undertaken and a revised Housing Master Plan chapter has been drafted.
- ✓ **Town Clerk's Office** has a new records storage room. Dry, water proof. Accessible by the public, escorted by Town Clerk.
- ✓ **Eversource tree trimming** has had some success. They are working on removing old dead trees has a positive impact. Tree limbing has been very successful. Communications process has been improved. But nearly 200 old trees have been tagged to be removed and but have not been removed after a couple of years.

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- ✓ **Many Zoning Ordinance** and Subdivision Review Regulations, Site Plan Review Regulations amendments between 2019-2024.
- ✓ **Note list of Completed Actions** in **7 PRIOR ACTION STATUS**.

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. Despite the different ways of evaluation and prioritization shown within the **Hazard Mitigation Plan 2024**, completion of Actions or implementation of the Plan may not occur within the next **5** years unless there is an urgent need such as a declared major disasters or emergency declaration (DR- or EM). A natural disaster may serve as the catalyst for project implementation and grant application, including the opening of federal grant funds.

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Town Duties: Annual Monitoring and Update of the Mitigation Action Plan (CH 8)

The Select Board will 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 Town Administrator designee will continue to serve as Chair of the Committee for Hazard Mitigation meetings and will 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 shall include:

- Emergency Management Director
Deputy Emergency Management Director (if appointed)
Town Administrator or designee
Fire Chief or designee
Police Chief or designee
Public Works Director or designee
Building Inspector/ Code Enforcement Officer
Health Officer
Select Board member
Planning Board member
Budget Committee member
Simonds School/Kearsarge Regional School District Representative
Pillsbury Free Library Representative
Historical Society member
Conservation Commission member
Parks and Recreation Committee member
Economic Development Advisory Committee member
Warner Village Water District representative
Eversource representative (Stakeholder)
Community Stakeholders at Large

Stakeholders who shall be solicited to attend meetings and to participate equitably in the Plan development process include representatives from Kearsarge Regional School District, Pillsbury Free Library, Pine Rock Manor, Mt. Kearsarge Indian Museum, NH State Parks, local trails groups, neighborhoods, local State Representatives, agricultural/farming operations, business leaders, local non-profits including the Capital Area Public Health Network, area emergency management directors, local, State or other Federal agency representatives (such as NH HSEM), utility representatives (such as TDS and Eversource), and other members of the public. This composition provides a wide spectrum of potential interests and opportunities for partnership to develop and accomplish Actions.

HMC INTERIM MEETINGS AND ACTIVITIES

This Committee will aim to meet up to 2 or more 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 9.1.

Table 9.1

Hazard Mitigation Committee Preliminary Annual Future Meetings and Activities

Meeting or Activity Month	ANNUAL Preliminary HMC Interim Meeting Agenda Items and Activities
January-March <i>Budgets Determined</i>	Town operating budgets are determined for the next year. HMC assists Select Board and Budget HMC with getting their mitigation projects funded and written into budgets. Action implementation continues. HMC continues update to the Mitigation Action Plan using Department Mitigation Action Progress Reports and an updated Action Status Tracking sheet. HMC 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 ensures Department Heads are provided with information to work on their Actions. HMC 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 <i>Infrastructure Projects Underway</i>	Infrastructure projects will be underway. HMC requests a Progress Report #1 for This Year’s & Next Year’s Actions from responsible Depts/Bds by beginning of July. HMC completes Annual Evaluation of the Plan File. HMC works with the CIP Committee to get certain projects placed into the CIP. Depts/Bds to begin placement of Next Year’s high-cost Action Plan items into the CIP.
July- August	HMC assists Depts/Bds with their Operating Budget requests to include Next Year’s Actions, and to determine which Actions will have Warrant Articles. HMC staff continues assistance to Depts/Bds for Action Plan items. HMC continues update to the Action Plan Status Tracking sheet. HMC staff & members ensure Haz Mit Actions are added into the CIP.
SEPTEMBER HMC Meeting <i>CIP updated, Budgets drafted</i>	HMC to review Action Plan and identify Next Year’s Actions to accomplish (including \$0). HMC attends Select Board budget meetings and suggests warrant articles for Action Plan items. HMC attends Budget Committee meetings scheduled through January to champion Action item funding. If time permits, HMC polls Depts/Bds for new Hazard Events descriptions/impacts/locations/date to add to CHAPTER 4 Local Hazard Event History Table, requests photos of Hazard Events and updates APPENDIX Photographic History. CIP begins. HMC reviews and revises CHAPTER 4 HIRA Table if needed.
October- December	HMC attends Select Board Dept/Bd Operation Budget meetings and suggests Warrant Articles for Action Plan items. HMC attends Budget Committee meetings scheduled through January to champion Action item funding.

Sources: Warner Hazard Mitigation Committee

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For each of the Hazard Mitigation Committee implementation meetings, the Emergency Management Director (or Staff Coordinator) will invite other Department members, Board and Committee members, Town Department staff, Pillsbury Free Library, School District representatives, Stakeholders, and other participants of the **2024 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 Warner, and will be posted on the Town of Warner website at <https://Warnernh.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, shall be retained and compiled for inclusion into **APPENDIX C**.

The Emergency Management Director and Department heads will work with the Select Board 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.

Town Duties: Implementation and Evaluation of the Plan (Ch 8)

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 **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 9.1**. The primary implementation tasks are to be completed depending on when the Town prepares and receives its yearly operating budgets and warrant articles.

MAIN ANNUAL HMC IMPLEMENTATION TASKS

The rolling list of the Hazard Mitigation Committee's annual main tasks to update and implement the Plan sections shall include:

1. Document New Hazard Events that Occurred in Town.

- ➔ Reevaluate the Hazard Identification and Risk Assessment (**CHAPTER 4** HIRA Table in Plan, HIRA file) ratings for natural hazards.
- ➔ Add new events to Local and Area History of Disaster and Hazard Events (**CHAPTER 4** Local History Table in Plan).
- ➔ Submit photos of events to add to the **APPENDIX F** Photographic History file.

2. Coordinate Annual Completion of Priority Mitigation Actions by Assigning to Departments.

- ➔ **APPENDIX B** Mitigation Action Progress Report file.

3. Ensure Departments Acquire Funding for Actions & Document the Status of Priority Actions.

- ➔ **APPENDIX B** Mitigation Action/Project Status Tracking file.

4. Evaluate Effectiveness of the Plan Each Year.

- ➔ **APPENDIX B** Plan Evaluation Worksheet file.

5. Request Semi-Annual Progress Reports from Departments & Update Status File.

- ➔ **APPENDIX B** Mitigation Action/Project Status Tracking file.

6. Update Mitigation Action Plan, Reprioritize Actions for Current Year, Update Supporting Plan Sections.

- ➔ Update Mitigation Action Plan (**CHAPTER 8** Tables in Plan), place **Completed** or **Deleted** Actions into respective **CHAPTER 7** Prior Action Status Tables in Plan.
- ➔ Enhanced STAPLEE Prioritization (**CHAPTER 8** Figure in Plan, STAPLEE file).
- ➔ Update other sections as needed/if time permits including:
 - **CHAPTER 5** Critical and Community Facilities (narrative in Plan, Tables in file, and **APPENDIX A**),
 - **CHAPTER 5** Problem Statements narrative in Plan,
 - **CHAPTER 5** Culverts to Upgrade Table in Plan,
 - **CHAPTER 6** Capability Assessment Tables in Plan,
 - and more.
- ➔ Make note of everything added/changed in the **2024 Plan** for so we can track the adjustments and copy them over into the new **2029 Plan** update! The latest approved format and content will be different than the **2024 Plan**.
- ➔ Remember to invite the Stakeholders and public to all meetings, take minutes as needed, and keep PDF copies of publicity. Add to **APPENDIX C MEETING INFORMATION**.

Figure 9.A is a graphic display of the repeating annual interim activities of the Hazard Mitigation Committee to update and implement the **Hazard Mitigation Plan 2024** actions and while preparing for the **2029 Plan Update**.

Figure 9.A
Annual Interim Plan Implementation, 2025-2029



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ANNUAL INTERIM IMPLEMENTATION FILES 2025-2029

To get the permanent Hazard Mitigation Committee started on its activities during the Interim Update Meetings, APPENDIX B Evaluation and Implementation Worksheets are provided. These example working documents include administrative and organizational Word and Excel format files, draft Agendas, a Mitigation Acton Progress Report, a file to track the progress of Actions to completion, and a file to evaluate the effectiveness of the Plan (a way to make notes for future improvement). These documents are only a starting point for Towns to help guide implementation during the interim years of Plan approval (2025) through Plan lapse (2029).

Committee Organization and Publicity Documents

- Select Board: Motion & [Permanent] Hazard Mitigation Committee Membership
Interim Meeting Publicity- Template Press Release and Public Notice Meeting Poster

Meetings & Working with the Mitigation Actions

- Example Agenda for Interim Meeting 1 with recommended task list
Example Agenda for Interim Meeting 2 with recommended task list
Mitigation Action Status Tracking Sheet
Mitigation Action Progress Report for Departments (optional)
Annual Hazard Mitigation Plan Evaluation Worksheet

NEXT 5-YEAR PLAN UPDATE 2030

The next 5-year full Plan update will evaluate the existing Actions in the same manner, add new Actions, review natural hazard vulnerability, update data, and will fulfill a complete update of the Hazard Mitigation Plan according to approved guidelines and standards. The Town of Warner will seek a FEMA Building Resilient and Infrastructure and Communities (BRIC) grant or equivalent to contract the services of the Central NH Regional Planning Commission (CNHRPC) to prepare the next 5-year Plan update.

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 **Warner Hazard Mitigation Plan Update 2024** 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 2019 PLAN

As a successful, growing community, the Town of Warner has a comprehensive network of plans, processes, champions, regulations, and budgets to ensure its local objectives, projects and budgets are fulfilled. The **Warner Hazard Mitigation Plan 2024** is a tool for community betterment which works most effectively when partnering with existing planning mechanisms. Since the original **2003 Plan**, the overall integration and importance of the **Warner Hazard Mitigation Plan** into existing Town planning mechanisms continues to grow.

Although the **2019 Plan** was not adopted into Planning Board's amended **Master Plan 2018**, a better opportunity exists now for incorporation of the **2024 Plan**. The **Capital Improvements Program FY 2024-2029** has been recently updated and its projects influence new funding for Capital Reserve Funds and likely has helped to upgrade culverts in the **Mitigation Action Plan**. The **Zoning Ordinance** was revised annually since **2019** and continues to encourage natural systems protection (see **6 CAPABILITY ASSESSMENT**). The **Site Plan Review Regulations** were last reviewed and updated in **Nov 2023** and the **Subdivision Regulations** were updated in **Nov 2023**. These regulations indirectly support hazard mitigation planning principles (such as excavation regulations, fire and emergency access, driveway standards, drainage, landscaping, erosion, etc.). Annual budgets for Emergency Management have been very small but may be able to increase to consider the **Hazard Mitigation Plan** findings. By necessity of the overall tax dollars available as determined by voters, the Town budget limits funding for larger hazard mitigation projects such as box culvert upgrades or infrastructure inventories. The individual Town departmental budgets supported hazard mitigation planning where feasible or supported by voters, such as Capital Reserve Funds for Bridge Repair, Highway, Infrastructure improvements, Town Building Upgrades, Dry Hydrants, etc. Drainage upgrades, culvert upgrades and asset inventory and management are priorities of the Public Works Department and are important mitigation projects in Warner.

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 **2024 Plan** to be utilized. See also **6 CAPABILITY ASSESSMENT**.

MASTER PLAN

The adopted *Warner Master Plan 2011* was amended in **2018**, developed by the Planning Board with assistance from the CNHRPC. The Planning Board has the goal of rotating Chapter review and revision annually. Recent draft Chapters developed include the Housing Chapter. The Master Plan Chapters include: Demographics, Housing, Economic Development, Community Facilities, Transportation, Natural Resources, Energy Resources, Existing Land Use, Future Land Use, and Implementation. The **Hazard Mitigation Plan 2024** will eventually be adopted as an Appendix or a Chapter to the newest *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 Warner.

*To support mitigation efforts, the Planning Board shall consider adopting the **Hazard Mitigation Plan 2024** as a separate Chapter or Appendix to its Master Plan in accordance with **RSA 674:2.II(e)**.*

The **Hazard Mitigation Plan** shall be presented to the Planning Board by the Town Administrator and Emergency Management Director 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 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 the Board's 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.

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CAPITAL IMPROVEMENTS PROGRAM

Warner’s last Capital Improvements Program (CIP) was adopted in Nov 2023 for 2024-2029, but will be revised annually. The goal is to ensure the CIP is reviewed and updated each year by the CIP Committee. The HMC will 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 shall be identified where appropriate as addressing projects in the Hazard Mitigation Plan Update. The CIP in Warner is directed by the Select Board.

Process to Incorporate Actions

The Hazard Mitigation Committee (HMC)’s representative to Select Board will oversee the process to begin working with the CIP Committee to incorporate the various Hazard Mitigation Plan projects into the updated CIP. As the CIP is amended, the representative from the Hazard Mitigation Committee shall be appointed to sit on the CIP Committee or the HMC shall submit a CIP Project Application to ensure the mitigation projects are addressed as part of the CIP update process. A new Capital Reserve Fund for Hazard Mitigation Projects will be considered.

TOWN MEETING

In Warner, 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 2024 Plan Update and where the funding of specific capital projects simultaneously responds to these mitigation projects.

Process to Incorporate Actions

The Hazard Mitigation Committee (HMC)’s Town Department members will work with the Town Administrator, Budget Advisory Committee and Select Board 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 Select Board 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.

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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 workload to accommodate the Actions can put a strain on their ability to serve the public during performance of their normal job duties. When possible, Warner Departments and staff will be able to prioritize their tasks to work on **Hazard Mitigation Plan Update 2024** Actions. The in-kind staff work performed is assumed under the Operating Budget for that particular Department. The Emergency Management Department will benefit from a higher annual budget if this were brought to Town Meeting.

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 Warner improvement projects to specific projects and objectives of the **Hazard Mitigation Plan Update 2024**, 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 Administrator, will be responsible for ensuring that Town Departments and the public have adequate opportunity to participate in the planning process. Administrative staff shall again be utilized to assist with the public involvement process.

Those representatives who chose not to participate in the **2024** Hazard Mitigation Committee plan update process will not be directly identified for privacy considerations, but their organizations will be listed so they can again be contacted for the **5-year** update.

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, and Town Department heads, and local utility representatives like TDS and Eversource.
- Provide personal invitations to abutting community emergency management directors of neighboring Towns: Sutton, Wilmot, Andover, Salisbury, Webster, Bradford, Hopkinton and Henniker.
- Provide personal invitations to the major businesses, agencies, neighborhoods, non-profits, and other entities invited to participate in the **2024 Plan**: Eversource, Capital Area Public Health Network, Concord Hospital, Department of Transportation District office, Kearsarge Regional School District, Pine Rock Manor, North Ridge Senior Living, Main Street businesses.
- Seek new public involvement representation from the following businesses, agencies, neighborhoods, non-profits, and other entities: Historical Society, associations listed on **APPENDIX A Critical and Community Facilities Vulnerability Assessment** through personal invitation.
- Post public meeting notice flyers and press releases on the Town's website at <https://www.Warnernh.gov> on the Town's online calendar on the same site, and place agendas and meeting materials on a Hazard Mitigation Committee webpage.
- Post meeting notices in the Warner Town Hall, outside on the Town Hall Bulletin Board, at the Pillsbury Free Library, Post Office, Market Basket, Sugar River Bank, local schools, and other; Pillsbury Free Library for weekly newsletter;
- Submit media releases to the Concord Monitor (a paid, regional daily newspaper serving nearly half of all New Hampshire communities mostly southern New Hampshire) and other free, regional weekly newspapers serving Central region NH communities (online newspapers and newsletters have unpredictable longevity).

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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 Warner 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 Warner shall be considered for direct invitation for MITIGATION, which is a transparent process. EMERGENCY OPERATIONS planning shall have a more selective working group.

A new section of the Town website dedicated to Hazard Mitigation Committee activities and the **2024 Plan** shall be kept updated with meeting notices and materials used by the Hazard Mitigation Committee. This online location will be an optimal place to post the final **2024 Plan** and its *Maps* and *Appendices* and to continue adding materials for annual Plan updates. Additional pages shall be added for resources, information, and links to other websites for the public. Several Action Plan items which will be undertaken relate to public education and involvement and the Town website will be an exemplary method of getting the word out.

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10 APPENDICES

The following **APPENDICES A-F** are included under a separate electronic or paper document to maintain the relative brevity of this **Hazard Mitigation Plan Update**.

Listing of Warner Hazard Mitigation Plan Update 2024 Appendices

Some of these documents shall be updated annually as part of the interim Action implementation and Plan evaluation process*. The remaining **APPENDICES** could be amended with 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 **2029**.

- 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 ***
- F Hazard Mitigation and Severe Weather Community Survey Results ***

These Appendices shall be reviewed and updated minimally each year*. It is also highly recommended to update **4 HAZARD RISK ASSESSMENT Table 4.5 Local and Area Hazard Event and Disaster History** to maintain a record of the disasters, hazards, and impacts to Warner. See **9 ANNUAL EVALUATION AND IMPLEMENTATION** and **Figure 9.A** for details.

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11 MAPS

Four (4) detailed Maps were fully updated during the development of the **Warner Hazard Mitigation Plan Update 2024**. 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 2024 Maps

Map 1 Potential Hazards illustrates potential hazard event locations in Warner 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 new Preliminary **2023** Special Flood Hazard Areas (SFHAs), locations of potential flooding/ washout, fire/wildfire, bridge washout, ice and snow, steep slopes (>15%) and more.

Map 2 Past Hazards illustrates the locations of where hazard events have occurred in Warner in the past, including areas of Preliminary SFHA, flooding/washout, snowmelt, dam breach, fire/wildfire, wind damage, ice damage, and more.

Map 3 Critical and Community Facilities includes the infrastructure included in *Map 1 Potential Hazards* 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* and includes the *Map 1 Potential Hazards* and any realistic *Map 2 Past Hazards* locations where hazard events can occur again in Warner.

- ✚ **Map 1 - Potential Hazards**
- ✚ **Map 2 - Past Hazards**
- ✚ **Map 3 - Critical and Community Facilities**
- ✚ **Map 4 - Potential Hazards and Losses**