Plan Lapses 12-16-24

Town of Henniker

New Hampshire

Hazard Mitigation Plan Update 2019

2018 Jan- Ice Jam on Contoocook River, Western Avenue Bridge

Photo courtesy of Jim Morse, Fire Dept

2018 Jun - Severe Storm Treefall, Quaker St

Photo courtesy of Stefanie Costello, Fire Dept

Adopted by the Henniker Board of Selectmen

December 3, 2019

NH HSEM/FEMA Approved December 16, 2019

Plan Lapses 12-16-24

Town of Henniker

New Hampshire

Hazard Mitigation Plan Update 2019

Selectmen Adopted December 3, 2019

NH HSEM/FEMA Approved December 16, 2019

Town of Henniker
18 Depot Hill Road
Henniker, NH 03242
Phone: (603) 428-3221
www.henniker.org

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 (NH DOS)
NH Homeland Security and Emergency Management (NH HSEM)
33 Hazen Drive
Concord, NH 03305 *(Mailing Address)*

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://apps.nh.gov/blogs/hsem

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

U.S. Department of Homeland Security
FEMA Region I
99 High Street, Sixth Floor
Boston, MA 02110-2132

FEMA

JAN 0 6 2020

Alexxandre Monastiero, State Hazard Mitigation Officer
New Hampshire Department of Safety, Homeland Security and Emergency Management
33 Hazen Drive
Concord, New Hampshire 03303

Dear Ms. Monastiero:

As outlined in the FEMA-State Agreement for FEMA-DR-4457, your office has been delegated the authority to review and approve local mitigation plans under the Program Administration by States Pilot Program. Our Agency has been notified that your office completed its review of the Town of Henniker New Hampshire Hazard Mitigation Plan Update 2019 and approved it effective **December 16, 2019** through **December 15, 2024** in accordance with the planning requirements of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, the National Flood Insurance Act of 1968, as amended, and Title 44 Code of Federal Regulations (CFR) Part 201.

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

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

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

Sincerely,

Mark F. Gallagher for

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

WRW:ms

cc: Fallon Reed, Chief of Planning, New Hampshire

From:	Hazard Mitigation Planning
To:	"kris@patspeak.com"; "Stefanie Costello"; "townadministrator@henniker.org"; Stephanie Alexander
Cc:	Chase, Julia; Monastiero, Alexxandre
Subject:	Henniker, NH - Local Hazard Mitigation Plan - Formal Approval
Date:	Monday, December 16, 2019 9:28:34 AM
Attachments:	Henniker NH Final Local Mitigation Plan Review Tool.pdf

Good morning,

Congratulations! The Town of Henniker's Local Hazard Mitigation Plan has received **Formal Approval** as of today, **December 16, 2019**. This State Formal Approval is based upon the New Hampshire Department of Safety, Division of Homeland Security & Emergency Management's (HSEM) determination that the community's Local Hazard Mitigation Plan successfully met the requirements of 44 C.F.R Pt. 201. A copy of the adopted plan has been submitted to the Federal Emergency Management Agency (FEMA) for their records.

Please find the Final Local Mitigation Plan Review Tool attached. The Town of Henniker will receive a copy of FEMA's Formal Approval Letter reflecting the approval date identified above within the next few weeks.

Thank you for your continued dedication to hazard mitigation!

Kayla J. Henderson
NH Department of Safety – Division of Homeland Security & Emergency Management
Hazard Mitigation Planning

Hazard Mitigation Staff:
Alexx Monastiero, State Hazard Mitigation Officer / Alexxandre.Monastiero@dos.nh.gov / (603) 223-3627
Kayla Henderson, State Hazard Mitigation Planner / Kayla.Henderson@dos.nh.gov / (603) 223 3650
Whitney Welch, Asst. Chief of Planning / Whitney.Welch@dos.nh.gov / (603) 223-3667

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1 PLANNING PROCESS

The Town's Hazard Mitigation Committee reformed to rewrite the Plan into a more concise format and to incorporate the newest material required by FEMA in addition to updating the Town's newest information since **2014**. This Planning Process Chapter contains information previously available in the Introduction Chapter of the **Plan Update 2014**. Expanded public participation steps were taken and a new plan development procedure was used as documented in the Methodology section.

Certificate of Adoption, 2019

Town of Henniker, NH
Board of Selectmen
18 Depot Hill Road
Henniker, NH 03242

A Resolution Adopting the Henniker Hazard Mitigation Plan Update 2019

WHEREAS, the Town of Henniker 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 2019** 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 Henniker has developed and received conditional approval from the NH Homeland Security and Emergency Management (NHHSEM) for its **Hazard Mitigation Plan Update 2019** under the requirements of 44 CFR 201.6; and

WHEREAS, public and Committee meetings were held between **January** through **September 2019** regarding the development and review of the **Hazard Mitigation Plan Update 2019**; and

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

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

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

RESOLVED by Town of Henniker Board of Selectmen:

The **Hazard Mitigation Plan Update 2019** is hereby adopted as an official plan of the Town of Henniker; The respective officials identified in the mitigation action plan of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them;

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

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

IN WITNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of Henniker this 3rd day of December, 2019.

ATTEST

TOWN OF HENNIKER INCORPORATED NOV. 10 1768 SEAL NEW HAMPSHIRE

Town Clerk

Kimberley I. Johnson, Town Clerk

Board of Selectmen

Kris Blomback, Chair — 12/5/2019 — date

Tia Hooper, Vice Chair — 12/3/2019 — date

Peter R. Flynn, Member — 12-3-19 — date

D. Scott Osgood, Member — 12/3/19 — date

Leon Parker, Member — 12/3/19 — date

Plan Process Acknowledgments

The Board of Selectmen-appointed Hazard Mitigation Committee was comprised of these individuals on behalf of their respective Departments, Boards or Committees who met between **January** through **September 2019** to develop the **Henniker Hazard Mitigation Plan Update 2019**:

- **Leo Aucoin,** Henniker Highway Department Road Agent
- **Stefanie Costello**, Henniker Emergency Management Director, Fire Department Lieutenant, Staff Coordinator, Pat's Peak staff (business community)
- **Matthew French,** Henniker Police Department Chief
- **Keaton Gagne**, Henniker Fire Department Lieutenant
- **Matt Henry**, Henniker Town Administrator (former)
- **Kenneth Levesque,** Henniker Wastewater Superintendent
- **Marc McMurphy**, White Birch Center Executive Director*
- **James Morse**, Henniker Fire Department Chief
- **Troy Powers**, Henniker Highway Department Driver
- **Dean Tirrell,** Henniker Planning Board Chair

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

- **Stephanie Alexander**, CNHRPC Senior Planner
- **Nathan Cote**, CNHRPC Intern (GIS mapping)

Several other Town-affiliated individuals or other agency representatives attended one or more Committee meetings and/or contributed information to the content of the Plan. Members of the public* (**4**) participated as fully as appointed members in the Hazard Mitigation Committee meetings.

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

- **Christine Archibald**, Henniker Fire Department Lieutenant
- **Julia Chase,** NH Homeland Security and Emergency Management Field Representative
- **Bradley C. Clark**, US Army Corps of Engineers Civilian Engineer
- **Bruce Edwards,** Bradford Emergency Management Director*
- **Robert French Jr.,** Henniker Highway Department Driver
- **Kayla Henderson,** NH Homeland Security and Emergency Mgt Hazard Mitigation Planner
- **Deborah Hooper,** Henniker School District (SAU #24) Senior Accountant
- **Scott Lane,** New England College Campus Security Director*
- **Matthew Lundsted,** Contoocook & North Branch Rivers Local Advisory Committee member
- **Leanna Lorden**, White Birch Center Director of Children's Programs*
- **Bill Marko,** Henniker Planning Board Vice Chair
- **Cherry Palmisano,** Henniker Town Administrative Secretary (former)
- **Kyle Parker**, Henniker Building Inspector

Authority

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

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

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

Prior versions of the Town's Hazard Mitigation Plan are noted in the **Final Plan Dates** section. A **2017** Pre-Disaster Mitigation (PDM) grant provided 75%/25% funding for the Town to update its prior Plan through the Central NH Regional Planning Commission. The 25% match required by the Town was provided by in-kind staff and volunteer time and labor.

This **Henniker Hazard Mitigation Plan Update 2019** has been developed in accordance with the Disaster Mitigation Act of **2000** and the ***FEMA Local Mitigation Plan Review Guide, October 1, 2012*** and effective one year later. The most recent Plan development standards provided by FEMA Region I have also been incorporated. The planning effort of the Town is a regular process and this Plan is considered to be a "living document."

The new Henniker Hazard Mitigation Committee was established by the Board of Selectmen to begin meeting **January 2019** and guided the development of the Plan. The Committee consisted of the Town's Emergency Management, Town Administration, Fire and Rescue Departments, Highway Department, Police Department, Planning Board, and Wastewater Department while several additional Town representatives attended and participated in meetings. Public participants were active with Committee activities.

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

Methodology

The **Henniker Hazard Mitigation Plan Update 2019** was developed over an nine-month period, with a group of Town staff members and volunteers, public participants and the CNHRPC comprising the majority of the Hazard Mitigation Committee. The **2019** methodology for Plan development is summarized in this section. The **Hazard Mitigation Plan** is designed differently from the **2014 Plan** with the intent to better conform to the current approvable Central NH Region format and incorporating the new ***2018 State Multi-Hazard Mitigation Plan*** items, with the purpose of easier updating and implementation while meeting FEMA's requirements. The Plan roughly follows the ***FEMA Local Mitigation Planning Handbook, 2013*** by using its terminology and some of its tasks, ensuring **Henniker's Plan Update 2019** begins to follow a standardized approach to Plan construction and content endorsed by FEMA. Many of the vital sections of the **2019 Plan Update** will be contained in the chapter **10 APPENDICES** for easier display, usage, sharing, and update.

MEETINGS AND DUTIES

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

Table 1

Meeting Schedule and Agenda Activities

Meeting	Date	Agenda Activities – See APPENDIX C
Meeting 1	01-14-19	Discuss Process and Schedule; Review Declared Disasters and Public Assistance Funding to Henniker; Develop New Hazard Identification and Risk Assessment (HIRA), Begin to Identify Potential and Past Hazard Locations 2014-2019; Prepare for Maps 1-2 and Flood Map Revisions; Schedule Meetings
Work Session 1	02-11-19	Finish Identification of Potential and Past Hazard Locations 2014-2019; Update Critical and Community Facilities Vulnerability Assessment and Develop Problem Statements; Status of Maps 1-2 and New Flood Hazards Map
Meeting 2	03-25-19	Complete Critical & Community Facilities Vulnerability Assessment and Determine Problem Statements; Review & Update Goals and Objectives for 2019; Map Workshop
Work Session 2	04-08-19	Review and Update Goals and Objectives for 2019; Finalize Problem Statements and Identify Those to Utilize as NEW 2019 Mitigation Actions; Review & Update Capability Assessment
Work Session 2.2	04-15-19	Finalize Problem Statements and Identify Those to Utilize as NEW 2019 Mitigation Actions; Begin Review & Update of Capability Assessment

Meeting	Date	Agenda Activities – See APPENDIX C
Work Session 2.3	05-06-19	Finalize Problem Statements and Identify Those to Utilize as NEW 2019 Mitigation Actions; Begin Review & Update of Capability Assessment; Update Meeting Schedule
Work Session 2.4	05-20-19	Finish Review & Update of Capability Assessment
Meeting 3	06-03-19	Determine Status of the 2014 Mitigation Actions; Develop Mitigation Action Plan 2019
Work Session 3	06-10-19	Develop Mitigation Action Plan 2019; Begin to Prioritize Mitigation Action Ranking Scores for Action Achievability
Work Session 3.2	06-17-19	Finish Mitigation Action Plan 2019; Begin to Prioritize Mitigation Action Ranking Scores for Action Achievability
Work Session 3.3	06-24-19	Finish Mitigation Action Plan 2019; Prioritize Mitigation Action Ranking Scores for Action Achievability
Work Session 3.4	07-01-19	Prioritize Mitigation Action Ranking Scores for Action Achievability; Overview of Meeting 4; Work Session 4 and Public Information Meeting; Meeting Schedule
Meeting 4	09-09-19	Review Draft Hazard Mitigation Plan Update 2019 (onscreen); Overview of Work Session 4 Tasks; Schedule Public Information Meeting
Work Session 4	09-16-19	Review Draft Hazard Mitigation Plan Update 2019; Interim Hazard Mitigation Plan Implementation 2020-2014; Prepare for Public Information Meeting; Review Plan Approval Process; Prepare for Board of Selectmen Adoption Meeting
Public Information Meeting	10-01-19	HMC members present sections of the Plan to the public in a brief question and answer format meeting. Describe hazards and mitigation Actions. Maps will be available.

Source: Henniker Hazard Mitigation Committee Agendas, 2019

For each meeting, all attendees signed attendance sheets and meeting match timesheets, documenting their time at the meetings. The Committee members worked to complete the Agendas, including developing the **Hazard Risk Assessment**, **Critical and Community Facilities Vulnerability Assessment**, **Capability Assessment**, and **Mitigation Action Plan**, completing the **Enhanced STAPLEE Action Prioritization**, etc. along with input from members of the public and guests. The agendas and attendance sheets are included in **APPENDIX C** of the Plan.

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

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

under the **2019 Plan Update** section. Maps were reviewed and updated by the Committee and guests and revised in a Geographic Information System (GIS) by CNHRPC.

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

OPPORTUNITY FOR PUBLIC PARTICIPATION

Public Input from the Hazard Mitigation Committee Meetings

The public notification is described in the Public Outreach Strategy sidebar. Four (**4**) members of the public attended the meetings as indicated in the **Acknowledgements** and by the Attendance Sheets in **APPENDIX C Meeting Information**, in addition to Public Information Meeting attendees. Members of the public would have assisted with completing the Agendas, including developing the **Hazard Identification Risk Assessment**, **Critical and Community Facilities Vulnerability Assessment**, **Capability Assessment**, and **Mitigation Action Plan**, completing the **Enhanced STAPLEE Action Prioritization**, etc. along with the Committee members. The general public had the opportunity to attend and participate in the **15** posted meetings or to contact the Staff Coordinator for more information.

Public Outreach Strategy

Many individuals were personally invited to attend and participate in the Henniker Hazard Mitigation Plan Committee meetings. They included surrounding community Emergency Management Directors, Town Boards and Committees, Town Departments, and local businesses. NH Homeland Security and Emergency Management (NHHSEM) Representatives were also invited and attended some of the meetings, as did representatives from the White Birch Center, Henniker Community (Elementary) School, New England College and US Army Corps of Engineers.

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

The public process for this Plan included posting the meeting information on the Town's online calendar and website at www.henniker.org and a dedicated webpage at https://www.henniker.org/general/page/hazard-mitigation-committee-2019-update. The Town Newsletter posted a press release. Meeting notices were physically posted at the Henniker Town Hall and the outside Town Bulletin Board. Local interests had multiple opportunities to attend and participate in the meetings. Henniker had a proportionately large number of non-municipal interests attend and participate in HMC meetings. Copies of publicity for the Plan are included in **APPENDIX C.**

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

As a final attempt to obtain additional public input, a specially noticed Public Information Meeting was held on October 1, 2019 at a Board of Selectmen's meeting at which many members of the public participated. This meeting was publicly noticed and all documents were available for review on the Town's website in advance of the meeting. The attendees and publicity of the public planning process are noted in the **Acknowledgements**.

Public Input from the Public Information Meeting

The **Public Information Meeting (PIM)** was held on October 1, 2019. The Hazard Mitigation Committee members presented portions of the Plan and had the Maps available for display. The agenda and attendance sheet are included in **APPENDIX C**. Held during a scheduled Board of Selectmen meeting, the PIM involved **several** members of the public who listened to presentations, asked questions and had the opportunity to review the final draft Plan document, Appendices and Maps.

Public Input from the Board of Selectmen Adoption Meeting

The Board of Selectmen meeting to adopt the **Hazard Mitigation Plan** was held on December 3, 2019. Although the Plan's APA had been received, the Board permitted public comment prior to adoption although Plan changes could not be made at this time. Discussion was held prior to the unanimous adoption of the Plan by the Board.

COMPLETION OF THE PLAN STEPS AND DATES

On October 1, 2019, 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 October 16, 2019, this Plan, Appendices and Maps were submitted to the NH Homeland Security and Emergency Management (NHHSEM) for compliance review and revision to apply for Approved Pending Adoption (APA) status, also known as conditional approval.

On November 22, 2019, Henniker received an **Approved Pending Adoption (APA)** notification from NHHSEM. The APA states the Plan will be approved by FEMA after proof of adoption by the local governing body, a Certificate of Adoption from the Board of Selectmen, is submitted.

On December 3, 2019, the Board of Selectmen **adopted the Hazard Mitigation Plan Update** for the Town at a duly noticed public meeting. Copies had been made available at the Town Office and on the Town website for public review. The public notice and flyers are included in **APPENDIX C.** The signed Certificate of Adoption was sent to NHHSEM/FEMA.

On December 16, 2019, Henniker received a **Notification of Formal Approval** from NHHSEM, with the Plan approval granted effective that day. A **Letter of Formal Approval** from FEMA confirming the notification will be forthcoming. The next Hazard Mitigation Plan update is due five (5) years from this date of approval, on **December 16, 2024**.

Final Plan Dates

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

Table 2

Henniker's Hazard Mitigaion Plan Adoption History

Year of FEMA-Approved Hazard Mitigation Plan	Adoption by Henniker Board of Selectmen	NH HSEM/ FEMA's Formal Approval	Plan Lapse
Original 2008	07/15/08	09/23/08	**09/23/13**
Update 2014	08/12/14	09/02/14	**09/02/19**
Update 2019	**12/03/19**	**12/16/19**	**12/16/24**

Source: Plan Adoption History

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2 COMMUNITY PROFILE

It has been over five years since the last Plan was written, with the last decennial Census in 2010. The best available new data has been used in this Chapter to portray the population, housing, and overall demographic picture of present-day Henniker. The former **Relation to Natural Hazards** section has been updated within **4 HAZARD RISK ASSESSMENT** as **Built Environment Changes.** The tables clearly identify the facilities in Town and which natural, human, and technological hazard events could most likely occur in those areas, as described in **5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION**.

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

Geographic Context

The Town of Henniker is located in southwestern Central New Hampshire within Merrimack County near the edges of eastern Hillsborough County. The Town is bordered by **6** communities: the Towns of Bradford and Warner to the north, the Town of Hopkinton to the east, the Towns of Weare and Deering to the south, and the Town of Hillsborough to the west. The State's capital of Concord is about **20** miles from the geographic center of Henniker in a straight line along NH 9/US 202. State highway NH 114 bisects the Town in an north-south direction, crossing the Contoocook River. NH 9/US 202 bisects Henniker in the opposite direction, with its intersection meeting just north of the geographic center of the Town.

The Town boasts a vibrant, historical Downtown easily accessed from both highways. The **Contoocook River** is the most prominent watercourse through the Town, flowing along NH 9/US 202 from Hillsborough through Henniker and into Hopkinton, flowing by Azalea Park in the Downtown. The Downtown quadrants of Western Avenue – Main Street and Maple Street – Bridge Street hosts many historic buildings which now contain restaurants, Henniker Pharmacy, White Birch Center, the Town Offices, Henniker Community School, Henniker Community Center, Tucker Free Library, New England College, a Town green, and churches as well as modern businesses. Large employer and tourism-driver Pat's Peak runs recreational opportunities throughout the year.

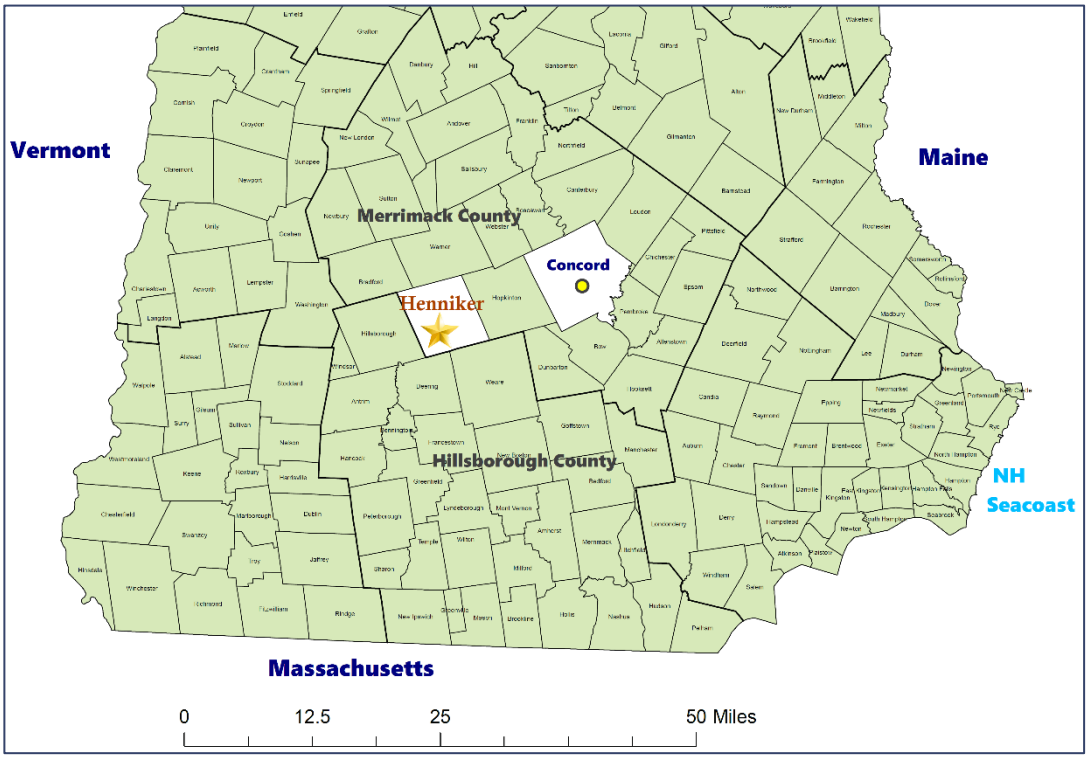
The **44.8** square mile rural Town contains large waterbodies including Long Pond, Keyser Pond, French Pond, Colleague Pond, Middle Pond, Upper Pond, Craney Pond, of which some ponds have lakeside communities and/or local beach access contributing to the **0.7** square miles in Henniker that are water. The US Army Corps of Engineers Hopkinton Everett Flood Control Reservoir is partially situated in Henniker and is shared with Hopkinton, Weare, and Dunbarton. The remaining **44.1** (rounded) square land miles include several forests, such as Farrar Marsh State Wildlife Management Area, Stumpfield-Mudgett Recreation Area, Ashendon State Forest, Colby Hill Forest, Hilltop Estates Open Space, Ames State Forest, Totten Trails State Forest, Buehler/Salmen Forest and many private conservation lands held by nonprofit land trusts. The Town is a member of the John Stark Regional School District, SAU #24. The Town of Henniker remains a highly rural community of high density neighborhoods, totaling about **4,970** people (**2018**) with distinctive New Hampshire characteristics and amenities, but with easy NH 9/US 202 highway access and the successful New England College, population should increase over the coming decades.

HENNIKER'S LOCATION IN NH

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

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

Figure 1
Henniker in the State



Source: Central NH Regional Planning Commission

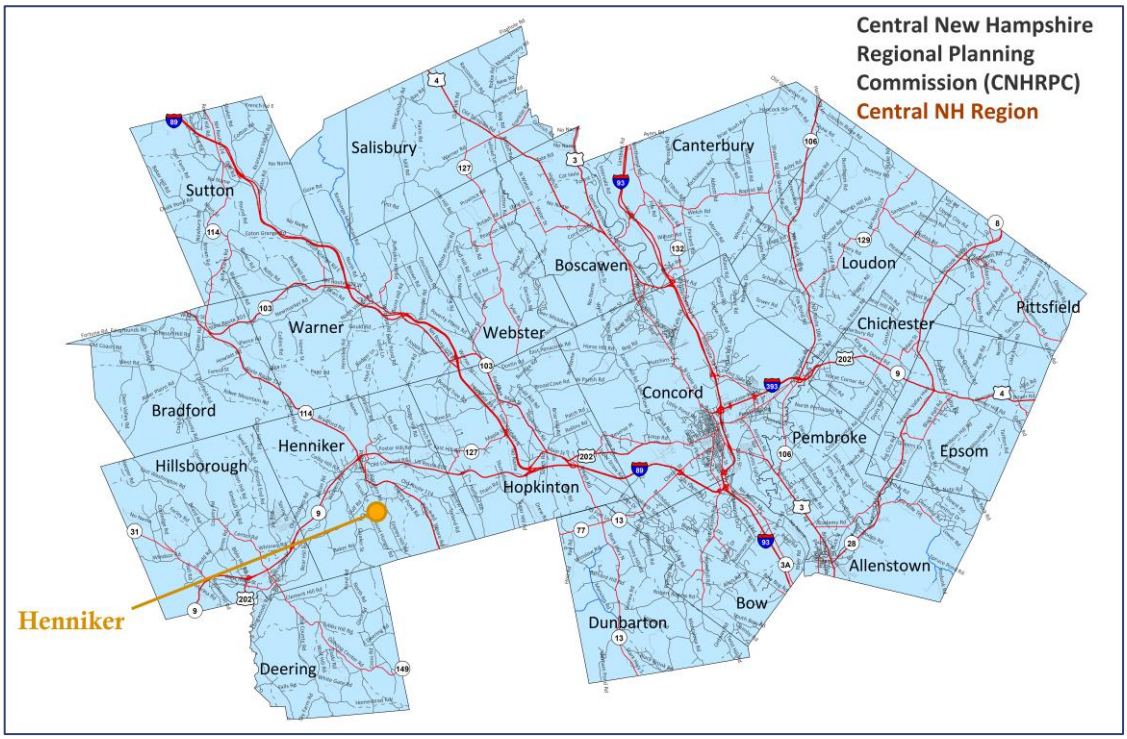
HENNIKER'S LOCATION IN CENTRAL NH

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

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

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

Figure 2
Henniker in the Central NH Region



Source: Central NH Regional Planning Commission

Population and Housing Growth

The latest Henniker Master Plan was adopted in **Sep 2015**, developed by the Planning Board. The Master Plan is due for an update between **2020-2025**, with the goal of rotating Chapter review and revision annually after a new update. Chapters from the ***2015 Master Plan*** to update include Vision for Henniker, Community Survey, Population and Economics, Housing, Historic and Cultural Resources, Transportation, Community Facilities, Conservation, Preservation and Open Space, and Existing and Future Land Use. New future chapters to consider, in addition to the updated chapters, could include Implementation, Economic Development, Energy, and Regional Concerns. The **Hazard Mitigation Plan 2019** could be adopted as an appendix to the ***2015 Master Plan*** by the vote of the Planning Board. The Master Plan influences the Zoning Ordinance and the Subdivision and Site Plan Review Regulations along with the Capital Improvements Program. These documents are used by local land use boards and staff to guide growth and development of Henniker.

POPULATION AND HOUSING TRENDS

The following tables contain the newest available data on housing and population growth which depict development trends over time. Shown in **Table 3**, Henniker's population and housing increases boomed during the **1970-1980** decade (**+40%** people, **+42%** homes) and increased heavily during the following **1980-1990** decade (**+28%** people and **+47%** homes). The estimated **2018** population and housing units, based off the **2010** Census, assumed **4,970** people and **1,971** housing units in **2018**. These figures include "Group Quarters, " indicated at about **628** people. In total, the Town has grown by **+2,622** people and **+1,226** homes by confirmed Census counts, from **1970-2010**, and estimates through **2018**.

Table 3

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

Growth	Population	Net Change #	Net Change %	Housing Units	Net Change #	Net Change %
1970 Census	**2,348**	N/A	0	**745**	N/A	0
1980 Census	**3,246**	898	38.2%	**1,060**	315	42.3%
1990 Census	**4,151**	905	27.9%	**1,558**	498	47.0%
2000 Census	**4,433**	282	6.8%	**1,679**	121	7.8%
2010 Census	**4,836**	403	9.1%	**1,928**	249	14.8%
Total Change from 1970 – 2010 Census	**---**	**2,488**	**106.0%**	**---**	**1,183**	**158.8%**
2018 Population & Housing Estimates*	**4,970**	134	2.8%	**1,971**	43	2.2%
48 Years of Increase	**+2,622 People**			**+1,226 Housing Units**		

*Sources: 1970-1990 US Census CPH-2-31 Table 9 Population and Housing Unit Counts; US Census 2000 & 2010 Data *includes all housing units, including vacant and seasonal and 2018 Group Quarters (628). NH Office of Strategic Initiatives (NHOSI) 2018 Population Estimates, Aug 2018, NHOSI Current Estimates and Housing Trends 2010-2017, Dec 2018*

Population

In Table 3, Henniker's confirmed **2010** Census population of **4,836** shows an overall increase of about **+106%** in population over the previous four decades, up from **2,348** people in **1970**. After an early growth boom between **1970-1990**, the population and housing increases have tapered off. Between **2000-2010**, the Town's population increased by **+9%** (**+403** people) while during the same time housing units increased by **+15%** (**+249** units). The overall population growth by percentage in Henniker since **1970** is about the same as most medium-sized population communities in the Central NH region.

Overall growth trends slowed dramatically during the current **2010-2018 (2020)** decade, with only a projected **+3%** population growth (**+134** people) and **+2%** housing units growth (**+43** units) to date. Over the five decade timeframe of **1970-2018**, this is by far the smallest amount of growth seen in Henniker. The closest **1990-2000** decade shows similar low growth patterns with **+7%** population growth (**+282** people) and **+8%** housing units growth (**+121** units).

Housing

Beginning in **2000**, the growth of housing units in Henniker declined and began to mirror the rate of population growth by percentage, although the number of people and housing units differ. From **1990-2000**, the **+7%** population growth rate and **+8%** housing growth rate of brought **+282** more people and **+121** housing units to Henniker. From **2000-2010**, the **+9%** population and **+15%** housing growth rate brought **+403** more people and **+249** housing units to Henniker. Within the current decade of **2010-2018 (2020)**, the **+3%** population and **+2%** housing growth rate brought **+134** more people and **+43** homes as of **2018**, with two (**2**) more years of Census estimates needed until the **2020** Census. At this time, it appears the housing growth trend has slowed.

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

Population Density

Another good measurement of community population and housing change is population density, or how many people live in a square mile of land area. Although Henniker encompasses a total area of **44.8** square miles (**28,672** acres), **0.7** square miles (**440** acres) of this total is water area. Between **1970-2018**, the data for how many people live in Henniker per square mile, called population density, is displayed in Table 4.

Table 4

Population Density in Henniker, 1970-2018

Municipality Size		Persons per Square Mile					
Land Acreage	Land Area in Square Miles	1970	1980	1990	2000	2010	2018
28,232	**44.1**	53	74	94	101	110	113

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

From Table 4, the overall population density between **1970** and **2018** increased **+112%,** from **53** people per square mile in **1970** to **94** people in **1990** and to an estimated **113** people in **2018**. Henniker is a geographically large-sized community in the Central NH Region at **44.8** square miles (including water acreage). At the same time, Henniker has a comparatively average number of people per square mile as compared to both other Central NH Region communities and communities statewide.

NEW CONSTRUCTION

Table 5 displays Henniker's estimated new home and new building construction permits issued by the Building Inspector between **2013-2018**. During this **6**-year period, a total of **50** new construction permits for homes/housing units have been issued.

Table 5

New Construction Permits Issued by Building Type, 2013 – 2018

Building Type	2013	2014	2015	2016	2017	2018	6-Year Totals
Single Family Homes	3	-1	5	6	10	10	**33**
Multi-family Homes	0	3	0	0	14	0	**17**
Manufactured Homes	0	-1	-1	0	1	0	**-1**
Non-Residential Buildings	12	2	23	18	7	20	**82**
Totals	**15**	**3**	**27**	**24**	**32**	**30**	**131**

Source: Town of Henniker Interim Town Administrator, Town reports (2018) and NHOSI Current Estimates and Housing Trends 2010-2017, Dec 2018

From Table 5, **33** permits were issued for new single family homes only, with **17** permits for new multi-family homes. Since 2 manufactured homes were removed and **1** permit was granted, a net total of **-1** manufactured homes is measured for the period. This period was very active for the construction of new non-residential buildings, which also had **82** total permits issued. Many of these could be attributed to New England College and the changing, booming businesses throughout Town. The most active year was **2017** when a total of **24** new single and multi-family housing permits were issued, while **2015** had the greatest number of non-residential permits (**23**) issued followed by **2018** (**20**).

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, Henniker had more construction during **2013-2018**.

Land Use and Zoning

According to NH Office of Strategic Initiative's **2013** geographic information system (GIS) calculations, Henniker has a total land area of **28,232** acres, or **44.1** square land miles. An additional **439.8** acres (about **0.7** square miles) is water area, to total **28,672** Town acreage. The GIS land acreage figure is not comparable to the most recent **Dec 2018** assessing reporting calculation of **26,472** land acres for the Town, which include **761** wetland acres, but not water acres. Certain acreages are often posted in more than one land use category for taxation purposes, and non-taxable 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, Henniker is considered a geographically large-sized community in terms of land area and contains appropriate population and housing figures. Henniker's proportion of residential land and commercial land is comparable to most Towns in the Central NH Region. The Town of Henniker is highly rural, forested, has some commercial development, and little of the residential land has been built upon.

LAND USE TYPES AND ACREAGE

Table 6 provides a snapshot of the Town's **2018** land use acreage from the Town's MS-1 reporting. Forested land use, both with and without stewardship, is the most extensive land use type, comprising **58%** of the Town's land area. Residential land use at about **19%** is the next highest, followed by exempt land (**11%**) which does not generate taxation. Farmland is a significant land use (**>5%**), as is Commercial (**<5%**). The remaining land use acreages are much lower, with **3%** of Wetland and **<1%** of Unproductive land.

Table 6
Land Use Acreage, 2018

Land Use Category 2018	Acres	% of Town
Residential Improved	4,967	**18.8%**
Commercial Improved	1,244	**4.7%**
Exempt	2,806	**10.6%**
Farm Land	1,396	**5.3%**
Forest Land	8,283	**31.3%**
Forest Land with Stewardship	6,934	**26.2%**
Unproductive	81	**0.3%**
Wet	761	**2.9%**
Total	**26,472**	**100.0%**

Source: Henniker MS-1 December 2018, Town Interim Administrator, August 2019

The **2014 Plan** catalogued the data differently, but a few figures are comparable to the **2019** land use figures. In **2014**, Henniker had **16%** of its acres in Residential use. The Town seems to have converted **3%** of its land to Residential use between **2014-2019**. Also in 2014, there was **3%** Commercial, and five years in **2019** later this figure has grown to (**<5%**). While undistinguishable in **2019**, the **2014 Plan** held the land use of the US Army Corps Hopkinton Everett Flood Control Reservoir area at **32.4%** of the community.

HENNIKER ZONING

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

Table 7

Henniker Zoning Districts, 2018

Zoning District	Abbreviation
Residential Districts	
Village Proper District	RV
Residential Neighborhood District	RN
Rural Residential	RR
Commercial Districts	
Commercial Heavy	CH
Commercial Medium	CM
Commercial Recreational	CR
Commercial Village	CV
Commercial Recreational 1	CR-1
Federal Land District	FD
Zoning Overlay District	
Educational Overlay District	EOD
Historic Overlay District	HDO
Floodplain Development District	
Other Zoning Ordinances pertaining to use of land	
Wetlands Conservation	----
Manufactured Housing Parks	----
Natural Preserve Areas	----
Open Space Residential Development	----
Housing for Older Persons	----

Source: Town of Henniker Zoning Ordinance, March 2019

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

Henniker Downtown – Bridge Street
Image accessed online via The New Englander e-newspaper 08-19

Henniker Town Hall
Image accessed online via This is America Too 08-19

Welcome to Henniker, NH 9/US 202
Image accessed online via Yankee Magazine 08-19

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3 GOALS AND OBJECTIVES

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

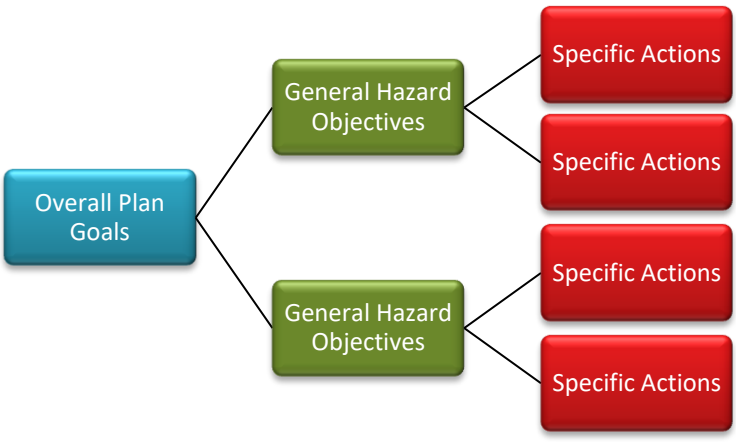
Inspired by early *State of New Hampshire Hazard Mitigation Plans*, the following Henniker **Goals** were initially developed in the previous **Henniker Hazard Mitigation Plans** and thus were reviewed and updated as applicable by the Hazard Mitigation Committee during a public meeting for the **2019 Plan**. While the hazard incidents have remained essentially the same as from the **2014 Plan** with a few disaster additions over the course of the last five years, it was important to reassess the continued relevancy of **Goals** and **Objectives** to influence the development of the best and most relevant hazard mitigation Actions. Lastly, with the most recent change in hazard types utilized in the *State of New Hampshire Multi- Hazard Mitigation Plan 2018*, it was necessary to revise some of the main hazard groups for the **General Hazard Mitigation Objectives** identification.

What Are Goals, Objectives and Actions

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

Figure 3

Relationship of Goals, Objectives and Actions



HAZARD CATEGORIES

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

Table 8
Main Hazard Categories and Specific Hazards

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

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

Source: Henniker Hazard Identification and Risk Assessment (HIRA)

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

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

Western Avenue Bridge, being replaced by NH DOT 2017

image accessed online via NH Department of Transportation 08-19

Overall Hazard Mitigation Plan Goals

The following **2** Goals for the **Hazard Mitigation Plan 2019** were developed by the Hazard Mitigation Committee as the vision for the community with respect to the declared disaster declarations, general hazard events, seasonal weather events and changing climate patterns resulting in unexpected events. Collectively, the **Goals** guided the formulation of **Objectives** for each of the main hazard categories. These **Goals** were revised from the **2014 Plan** to emphasize hazard mitigation instead of preparedness, response and recovery which are covered in the ***Emergency Operations Plan***. The **Hazard Mitigation Goals** are displayed in **Figure 4**.

Figure 4
Hazard Mitigation GOALS

1. **To reduce the risk of injury and the loss of life in the Town from all natural hazards, severe weather, and disasters and from impacts of secondary hazards (human and technological).**
2. **To reduce the risk of potential damages in Town to public and private property, critical facilities, infrastructure, New England College, historic resources, the natural environment, and the economy, from all natural hazards and disasters.**

Source: Henniker Hazard Mitigation Committee

General Hazard Mitigation Objectives

Main hazard event categories of **Earth, Extreme Temperatures**, **Fire**, **Flood**, **Public Health**, **Solar Storms**, **Wind, Winter, Technological,** and **Human** are intended to encompass their respective full sub-hazards range described in this Plan. The **General Objectives** are developed by addressing the primary hazard events that could impact Henniker. 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 in particular are secondary to (caused by) the natural and weather hazards. Sixteen (**16**) **General Hazard Mitigation Objectives** were crafted for the **Henniker Hazard Mitigation Plan 2019** as displayed in **Figure 5**.

Figure 5
Hazard Mitigation OBJECTIVES

EARTH HAZARDS

1. **Minimize the threat of potential landslide/ mudslide or rockslide areas along NH 114 north, and excavation areas, and minimize the threat of avalanches on Pat's Peak.**
2. **Minimize the impact of earthquake and drought by engaging in public awareness activities and safety precautions, highlighting agricultural areas, wells, historic buildings, and other locations.**

EXTREME TEMPERATURE HAZARDS

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

FIRE HAZARDS

4. **Minimize the damages to life, property, and infrastructure, including the Downtown and HHP Inc Lumber, from wildfires, brushfires, other outdoor fires, and lightning strikes.**

Hazard Mitigation OBJECTIVES

FLOOD HAZARDS

4. **Minimize the damages to life, property, and infrastructure from floodwaters of the Contoocook River, Amey Brook, Chase Brook, Black Brook (River Road, beavers), Cascade Brook, Hemlock Corner Loop Unnamed Brook and other Brooks; Craney Pond, Western Avenue wetlands, and other water bodies in Henniker.**
5. **Minimize the damages to life, property, and infrastructure caused by snow-melt and precipitation resulting in erosion and flooded roads; river scouring and ice jams, culvert washouts, dam failures or debris (tree limbs, leafy material/ sediment), beaver dam breakage, etc.**

PUBLIC HEALTH HAZARDS

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

SOLAR STORMS

7. **Minimize the impact to life, property and infrastructure from solar winds, geomagnetic storms, solar radiation and radio blackout.**

WIND HAZARDS

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

WINTER HAZARDS

9. **Minimize the damages to life, property and infrastructure from winter weather events, including storms, snow and ice and minimize damages from the resulting utility failure, blocked transportation routes (NH 9/US 202, NH 114, local roads) and roof collapses.**

Hazard Mitigation OBJECTIVES

HUMAN HAZARDS

10. **Minimize the risks of impacts and damages to life, property and infrastructure resulting from transportation crashes and fires involving transport trucks, vehicles, pedestrians, bicycles, airplanes, helicopters, drones, etc., along State roadways (NH 9/US 202 and NH 114), and along local Henniker roads, especially during natural hazard events.**

11. **Minimize the risk of damages to life (mass casualty), property and infrastructure from human terrorism and violence threats, such as active shooter incidents, hostage situations, civil disturbance/ riots, politically motivated attacks, incendiary devices, sabotage, vandalism or other public harm.**

TECHNOLOGICAL HAZARDS

12. **Minimize the risk of cyber events, including overall systems takeover, takeover of the Town website, telecommunications rerouting, cloud data breach, phishing, malware, ransomware, virus installation, on Town and School computer systems to maintain operations, and provide education to minimize cyberattack risk to residents and businesses, including identity theft and telephone scams.**

13. **Minimize the damages from multiple hazards to the aging infrastructure of the community, including bridges, culverts, dams, local roads, and underground water and sewer, and seek to maintain operational efficiency.**

14. **Minimize the impact to Henniker residents in both rural and Village/Downtown environments from the risks of various utility outages, such as live wire dangers and long-term outages in electrical power, internet and telecommunications services.**

15. **Minimize the impacts of fire conflagration and explosion, especially near densely populated areas or buildings, from fuel tanks, high tension power lines and vehicles, including impacts from manufacturing or construction accidents.**

16. **Minimize the damages to life, property, and infrastructure from hazardous materials exposure, chemical spills, trucking accidents, leaking underground storage tanks, and radiological materials incidents, including damages, impacts and exposures located on roadways, private properties, brownfields sites, and occupational sites.**

Source: Henniker Hazard Mitigation Committee

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4 HAZARD RISK ASSESSMENT

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

The ***State of New Hampshire Multi-Hazard Mitigation Plan 2018*** recommends that municipalities examine multiple natural hazards, including several new hazards. One hazard, coastal flooding, is not discussed in Henniker's Plan because they have no relevance to the Town. The former Human hazards of Civil Disturbance/ Public Unrest, Sabotage/ Vandalism, and Hostage Situation are absorbed into the **Terrorism/ Violence** hazard category. The opportunity was available to combine several of the former flood-related hazards into the new **Inland Flooding**. Likewise, several former wind-related hazards are compiled within **High Wind**. No natural hazards from the **2014 Plan** have been removed, only placed into other groupings for evaluation. Within the **Hazard Mitigation Plan 2019**, the **14** evaluated natural hazards and the **9** evaluated human or technological hazards have been incorporated under these basic categories, also displayed in **3 GOALS AND OBJECTIVES Table 8**:

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

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

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

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

Hazard Identification and Risk Assessment (HIRA) Ratings

Twenty-three (**23**) natural, technological, and human hazards are evaluated within this Plan. The **14** natural hazards and **1** technological hazard are ranked within in a **Hazard Identification Risk Assessment**. Some hazards may be more likely to occur in the community than others based on past events and current conditions, and some hazards may have a greater impact than other hazards. How vulnerable Henniker 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 **2019** Hazard Mitigation Committee examined each potential hazard for its **Probability of Occurrence in 10 Years** and its potential **Severity of Impact to the Town** affecting people, services/infrastructure and property based on past personal recollections and community hazard trends to determine the **Overall Risk** to the community.

HIRA RATINGS EXPLANATION

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

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

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

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

The technological and human hazards were not scored to ensure the natural hazards retained the focus of the **Hazard Mitigation Plan Update 2019.** However, **Dam Failure** was also 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 a **HIGH**, **MEDIUM** or **LOW Concern** designation for the numeric results. This summarization is also utilized in the following the **Description and Magnitude of Hazard Events** section.

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

OVERALL RISK ASSESSMENT SCORES

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

Out of the **14** ranked natural hazards and **1** technological hazard, Henniker's highest ranking hazards scored an **Overall Risk** between **15 - 8** (out of a possible score of **16**), displayed with calculated decimals in **Table 9**.

Table 9

Highest Overall Risk Hazards Scored in Henniker

Hazard Event	Overall Risk 1 - 16	CONCERN
Severe Winter Weather	14.7	HIGH
Tropical and Post Tropical	14.7	HIGH
High Wind Events	14.7	HIGH
Extreme Temperatures	12.0	HIGH
Lightning	12.0	HIGH
Inland Flooding	10.7	HIGH
Public Health	10.7	HIGH
Wildfire	9.3	HIGH
Dam Failure	9.0	HIGH
River Hazards	8.0	HIGH

HAZARD IDENTIFICATION AND RISK ASSESSMENT RATINGS

Included with the **Table 10** **Hazard Identification Risk Assessment (HIRA)** is whether or not each hazard event occurred within the last **5** years in Henniker. This is indicated by either ***Events(s) Within Last 5 Years*** or ***NO Event(s) Within Last 5 Years*** beneath each *Hazard Category*. Dates and descriptions of the new hazard impacts within the last **5** years are provided in a following table, **Table 12** **Local and Area Hazard Event and Disaster History.** The existing potential hazard locations, or those locations in Henniker which could be currently at present day susceptible to each of the hazard categories, are provided within **Table 10** since these locations contribute to the ***Severity of Impact*** ratings determinations of the Hazard Mitigation Committee. The **HIGH**, **MEDIUM** or **LOW Concern** summary for each rated natural hazard is provided within the ***Overall Risk*** column.

Table 10

Hazard Identification and Risk Assessment (HIRA)

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
AVALANCHE *Event(s) Within Last 5 Years*	✦ **Pat's Peak Ski Area.** Most of the small **Avalanches** on Pat's Peak occur on the off-season trails not open to skiers. On season, they would be more likely to occur on the black diamond trails. If the **avalanche** were large enough, lodge buildings containing people could be impacted, but this scenario is not anticipated.	**1**	1	1	1	**1.0 LOW**
DROUGHT *Event(s) Within Last 5 Years*	✦ **Entire Town, Cogswell Springs Waterworks (CSWW) area.** Areas susceptible to **drought** and dry conditions include farms and orchards, nurseries, and maple sugar operations: Aucoin Farm (Elk, Maple Syrup), Davison Farm (Produce), Forster's Christmas Tree Farm, French Pond Orchard (Apples, Peaches), Henniker Community Market (seasonal May-Oct), Hop N Henn Farm (Poultry), Houston's Pine Lane Farm (Corn Fields), L Aucoin Hay Fields, Peak Orchard (Apples, Peaches, Porkside Farms (Pork). When the hayfields die off, the dairy animals in Town cannot be fed. ✦ Water Supplies: The CSWW supplies water for the Downtown, along Davison Road, Western Avenue, Temple Road, and Rush Road residences. Outside the area are private dug and artesian wells; and public water supplies serving 25+ people. ✦ 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 of the dry hydrants and large cisterns (HHP, Bennett Road). When fire ponds or dry hydrants are low, response time increases as the Department needs to draw from the River, Lakes and Ponds (see **Inland Flooding**).	**4**	1	2	2	**6.7 MEDIUM**
EARTHQUAKE *Event(s) Within Last 5 Years*	✦ **Entire Town.** The Central NH Region is seismically active and **earthquakes** are regularly felt from area epicenters. Locations with high density population or potential gathering sites to evacuate include: Downtown, New England College, Henniker Community Elementary School, Rush Square Condos, White Birch Center, Wood Hill Village Manufactured Housing Park, Henniker Knolls Apartments, Campgrounds (Keyser Pond, Mile Away and Rock N' Birch).	**4**	1	1	1	**4.0 LOW**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	✦ Damage to utility poles and wires, roadways and infrastructure could be significant. Aboveground poles, underground electric lines, wastewater treatment lines (mostly Downtown) and the TDS switching stations on Lester Lane, Dodge Hill Road, Rush Road, Patterson Hill Road, and Western Avenue could be susceptible. Wastewater Pumping Stations at Western Avenue and Ramsdell Road (main) could be at risk. The Cogswell Springs Water Works tanks at Patterson Hill and Davison Road, or the Cogswell Springs Wells at Foster Road and Weare Road could be at risk of earthquake. ✦ Fuel storage locations such as Ayer & Goss, Pats Peak Operations Buildings (Fuel Storage), Michie Corporation, Mobil Station, All in One Market and others store underground or aboveground fuel tanks which may be vulnerable during a strong earthquake. ✦ Areas with the old, historic buildings are particularly susceptible to **earthquake**, including buildings in the greater Downtown: Main Street blocks, New England College facilities, Henniker Historical Society, Congregational Church, St. Theresa's Church, Weare Friends Quaker Meeting House, Colby Hill Inn, Henniker Pharmacy, Grange, Ocean Born Mary House, Hammond's Barn, Barrett House, Old School House, O'Connor House, Kirchner House, Holden House, and buildings within the Historic District.					
EXTREME TEMPERATURES **Excessive Heat, Heat Wave, or Cold, Wind Chill** ***Event(s) Within Last 5 Years***	✦ **Entire Town.** Groups most susceptible to **extreme heat or cold** include those located at: New England College, NEC Athletic Fields, Henniker Community Elementary School, Rush Square Condos, White Birch Center, Wood Hill Village Manufactured Housing Park, Henniker Knolls Apartments, Campgrounds (Keyser Pond, Mile Away and Rock N' Birch), the Churches, senior homes or housing facilities. ✦ Elder residences or those without air conditioning are especially vulnerable to high heat events and residents should be moved to air conditioned (cooling) or warming facilities such as the Town Hall or the Tucker Free Library. ✦ **Extreme cold** may be experienced by recreationalists at Pat's Peak or people trespassing at Craney Hill Fire Tower. ✦ Areas vulnerable to effects of **extreme heat or cold** include agriculture and farms: (see list above in **Drought**)	**4**	3	3	**3**	**12.0 HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	✦ See **APPENDIX A** for the list of vulnerable facilities or groups.					
HIGH WIND EVENTS **Wind, Thunderstorms, Hail, Downbursts, Tornadoes, Debris** ***Event(s) Within Last 5 Years***	✦ **Entire Town.** Most **high wind** -vulnerable areas include populated buildings, high-density locations, and utilities serving residents and businesses and the Downtown blocks. ✦ Utilities at risk of failing during high wind events include 6 telecomm towers on Lester Lane, Old Hillsborough Road, Flanders Road (3), and Craney Hill; Eversource electric lines; TDS Telecom switching stations on Lester Lane, Dodge Hill Road, Rush Road, Patterson Hill Road, and Western Avenue; and Water Works tanks at Patterson Hill and Davison Road. ✦ High Density Areas can have greater impacts from **high winds**: Downtown, New England College buildings and grounds, Western Avenue, Henniker Community (Elementary School), Rush Square Condos, White Birch Center, Wood Hill Village Manufactured Housing Park, Henniker Knolls Apartments, Campgrounds (Keyser Pond, Mile Away and Rock N' Birch). ✦ Construction, manufacturing, and industrial businesses clustered on Bradford Road, Old Concord Road and Flanders Road are collectively vulnerable to the effects of **high wind** events. ✦ Downbursts are occurring with greater regularity. The Town's highest elevation points (between 1,000' to 1,400') may experience the greatest **high wind** impacts, including Bear Hill, Buck Hill, Colby Hill, Craney Hill, Liberty Hill, Morrill Hill, Mount Misery, Mount Hunger, Wadsworth Hill. Many roads lead up and through these hills. ✦ Much of the Town is wooded and forested and sections would be difficult to access with trees and power lines down on the gravel, hilly residential roads. They could be difficult to access with treefall and power lines down from **high wind** events. Remote subdivisions include Bear Hill Road (26 homes), Colby Hill (19 homes), Craney Hill (38 homes), Liberty Hill Road (40 homes), Mount Hunger Road (25 homes), Rush Road (49 homes), Flanders Road (48 homes), Henniker Knolls on Flanders Road (~40 apts), Tanglewood Drive (52 homes), Highland Drive (53 homes), Dodge Hill Road (40 homes),Foster Hill Road (39 homes), Hemlock Corner Loop (27 homes), Old Hillsboro Road (53 homes), Rush Road (50 homes), Weare Road (45 homes), and Butter Road & Bennett Road (10 homes each).	**4**	4	4	3	**14.7 HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	Western Avenue, which could become isolated by treefall, has about 100 homes. There are many more such subdivisions and neighborhoods in Henniker, and many have only one egress. ✦ Henniker is covered with conservation or restricted use lands that utilize large amounts of tree cover. During **high wind** events, people recreating in areas such as the Hopkinton Everett Reservoir, Foster Conservancy, Vincent State Forest, Totten Trails State Forest, Preston Memorial Town Forest, Ames State Forest, Buehler/Salmen Forest, Colby Hill Forest, Craney Pond Town Forest, Craney Hill State Forest, or within the many private conservation lands and trail systems could experience unfavorable conditions during **high wind** events and may require rescue assistance in difficult to access locations. ✦Agricultural areas are vulnerable to damage from **High Winds** (see list above in **Drought**) ✦Older, or historical buildings are vulnerable to high wind damage include buildings in the greater Downtown: Downtown/Main Street blocks, New England College facilities, Town Hall, White Birch Center, Henniker Historical Society, Congregational Church, St. Theresa's Church, Weare Friends Quaker Meeting House, Colby Hill Inn, Henniker Pharmacy, Grange, Ocean Born Mary House, Hammond's Barn, Barrett House, Old School House, O'Connor House, Kirchner House, Holden House, and buildings within the Historic District. ✦ Floods are also possible with severe wind storm events (see **Inland Flooding**).					
INLAND FLOODING **Rains, Snow Melt or Flash Floods** ***Event(s) Within Last 5 Years***	✦ **Entire Town, Floodplains of Contoocook River**. Major watercourses include Amey Brook, Bean Brook, Black Brook, Brown Brook, Beards Brook (Hillsborough), Cascade Brook, Chase Brook, Colby Brook, Gulf Brook, and the Contoocook River. Major waterbodies include Blaisdell Pond, Carr Pond*, Colleague Pond, Craney Pond*, Craney Rookery*, French Pond*, Grassy Pond*, Keyser Pond*, Long Pond*, Middle Pond, Morrill Pond, Mud Pond 1*, Mud Pond 2, Mud Pond 3, Pleasant Pond*, Upper Pond*, and Hopkinton Everett Flood Control Reservoir, with smaller ponds and wetlands. *over 10 acres = public waters. ✦ Two Low (L) Hazard Dams, Pat's Peak Whisper Impoundment Dam (Chase Brook tributary) and Pat's Peak Dam (unnamed brook) are unlikely to flood but still have potential. Should the High	**4**	2	4	2	**10.7 HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	Hazard Jackman Dam in Hillsborough upstream of the Contoocook River fail or breach, **downstream flooding** is expected to occur along Western Avenue. Other recreation ponds, Non-Menace dams and regular beaver dams can breach and flood roadways. ✦ Any of these waters could **flood** local roads, homes, buildings and waterfront properties of Western Avenue – Riverside Meadow Condos (~40 attached units) and Western Ave Manufactured Housing Park (~7 homes) and Old Concord Road's Wood Hill Village Manufactured Housing Park (~47 homes). Davison Road (27 homes), Waterfront campgrounds such as Rock N Birch (~53 units), Keyser Pond Campground, and Mile Away Campground host higher summer populations, including children. Ramsdell Road homes and sections of Old Concord Road, River Road, and Shaker Hill Road are gated within the Hopkinton Everett Flood Control Reservoir Area. ✦ Runoff from roadways or **heavy rain** or **snowmelt** can cause floods and washouts over the Entire Town. Regular **washout locations** have included Baker Road, Bear Hill Road, Butter Road, Colby Hill Road, Colleague Pond Road, Cote Hill Road, Craney Hill Road, Depot Hill Road, Dodge Hill Road, Dudley Pond, Flanders Road, Freeman Colby Road, French Pond Road, Gulf Road at Depot Hill Road, Hall Avenue and Western Avenue intersection, Hemlock Corner Loop, Highway Department Gage Road, Huntington, Liberty Hill Road, Mount Hunger Road, Old Concord Road, Old Hillsboro Road, Patterson Hill Road, Peasley Road, Quaker Street, Ramsdell Road, Rand Road, River Road, Ray Road between Upper and Middle Pond, NH 114 at town line, Rush Road, Shaker Road, Temple Road, Warner Road and Hemlock Corner Loop, Weare Road at Colby Crossing, Western Avenue (numerous locations), Whitney Road. (See also **Aging Infrastructure**) ✦ Roads, bridges, drainage systems and areas of past, repaired, or existing. Temple Road Bridge had been washed out in 2011 along with Craney Hill Road and since been repaired with no further issue to date. The Western Avenue Bridge over the Contoocook River has recently been replaced after repeated flooding, erosion, and scouring. Also over the Contoocook are historic pedestrian bridges which could be damaged during extreme conditions. Low US 4/202 ramps can flood,					

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	creating **flooded infrastructure** for many travelers.					
LANDSLIDE **Soil, Rockslide or Excavation Areas** ***Event(s) Within Last 5 Years***	✦ **Slopes greater than 25%,** including roads with steep ditching or embankments are most vulnerable to **landslide**. The Town has numerous hills over 1,000' in elevation, most of them with roadways leading to homes. ✦ Roads with steep ditching or embankments are most vulnerable to landslide include Patterson Hill Road, Western Avenue embankments, the 40 miles of hilly, gravel roads with ditching in Henniker could be subject to landslide conditions (see **Inland Flooding**). Landslide is a fairly uncommon hazard but one that could have devastating effects, including property damage. ✦ Recurring and past landslides in the vicinity of the US 4/202 ramps are still vulnerable to heavy rains. ✦ The few excavation sites in Town are potential areas of **landslide**, but are considered unlikely. In Henniker, they are well maintained, used for private operations, or are reclaimed: Henniker Sand and Gravel (Bradford Road, Rush Road, Warner Road), Northern Sand and Gravel (Old Concord Road), Town Sand Pits (River Road), Mink Hill Gravel Pit.	**2**	1	1	**1**	**2.0** **LOW**
LIGHTNING ***Event(s) Within Last 5 Years***	✦ **Entire Town.** Areas of particular concern to **lightning** include critical facilities, high density areas, high elevations over 1,000' including Bear Hill, Buck Hill, Colby Hill, Craney Hill, Liberty Hill, Morrill Hill, Mount Misery, Mount Hunger, and Wadsworth Hill, Pat's Peak. The Downtown historic blocks are vulnerable to lightning strike and resultant conflagration. Numerous outdoor recreational and gathering places such as New England College trails and athletic fields, Hopkinton Everett Flood Control Reservoir trails, Pleasant Pond Town Beach and Boat Launch, Craney Pond, French Pond, Long Pond and Upper Pond Canoe Access could be vulnerable to **lightning**. ✦ Other locations containing large numbers of people include Henniker Community School, Town Hall, NEC Lee Clement Field House, and large construction businesses such as HHP Sawmill, Foster's Materials Management, Contoocook Valley Lumber , Cousineau Valley Chipping, Goss Lumber, Granite State Forest Products, Patenaude Lumber Sawmill, Triple L Lumber Company could each be vulnerable to **lightning** and **fire**.	**4**	4	3	2	**12.0** **HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	✦ The Town Highway Garage, Police Department, Fire Department, Town Hall, Transfer Station and, Grange could be vulnerable to **lightning**. ✦ Outdoor utilities and antennas would have high impacts should **lightning** strike, such as the 6 telecomm towers on Lester Lane, Old Hillsborough Road, Flanders Road (3), and Craney Hill; Eversource electric lines; TDS Telecom switching stations on Lester Lane, Dodge Hill Road, Rush Road, Patterson Hill Road, and Western Avenue; and Water Works tanks at Patterson Hill and Davison Road. ✦ Old, historic or wooden structures and those structures without **lightning** rods would be more susceptible to damage from a strike than those buildings with the rods. Buildings in the greater Downtown: Downtown/Main Street blocks, New England College facilities, Town Hall, White Birch Center, Henniker Historical Society, Congregational Church, St. Theresa's Church, Weare Friends Quaker Meeting House, Colby Hill Inn, Henniker Pharmacy, Grange, Ocean Born Mary House, Hammond's Barn, Barrett House, Old School House, O'Connor House, Kirchner House, Holden House, and buildings within the Historic District could be vulnerable to **lightning**. ✦ Remote, forested areas, parks, public Town Forests, conservation areas, open recreation fields, points of higher elevation can be dangerous to people and property if struck by **lightning**, including the Hopkinton Everett Reservoir, Foster Conservancy, Vincent State Forest, Totten Trails State Forest, Preston Memorial Town Forest, Ames State Forest, Buehler/Salmen Forest, Colby Hill Forest, Craney Pond Town Forest, Craney Hill State Forest, or within the many private conservation lands and trail systems.					
PUBLIC HEALTH Infectious Diseases, Air & Water Quality, Biological, Addiction, Arboviral, or Tick-borne *Event(s) Within Last 5 Years*	✦ **Entire Town**. Congregated populations and medical facilities can be more vulnerable to **infectious diseases**: New England College, Henniker Community School, White Birch Center, Henniker Pharmacy, Henniker Veterinary Hospital, Pats Peak First Aid Room, NEC Lee Clement Ice Arena. ✦ Local stores and eateries increases the risk of exposure to and transfer of **food-borne illness**, causing potential public health concerns. These include Gin Gin Chinese Restaurant, Dunkin Donuts, Colby Hill Inn, Country Spirit Restaurant, Henniker House Bead and Breakfast, Western Avenue Pizza, Daniel's Restaurant, Intervale	**4**	4	2	2	**10.7 HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	Pancake House, and more. See also sites listed in **APPENDIX A**. ✦ The Town's local Point of Dispensing (POD) is the Weare POD satellite located at the Henniker Community School. Henniker is a member of the Capital Area Public Health Network. ✦ The many forests, conservation areas, agriculture, wooded areas, and ponds can support **ticks (Tick-borne)** hosting bacterial diseases (Lyme, Anaplasmosis, Leptospirosis, more) and **mosquitos (Arboviral)** can host many bacteria (West Nile, EEE, Equine Infectious Anemia, etc) which transmit diseases. The Hopkinton Everett Reservoir, Foster Conservancy, Vincent State Forest, Totten Trails State Forest, Preston Memorial Town Forest, Ames State Forest, Buehler/Salmen Forest, Colby Hill Forest, Craney Pond Town Forest, Craney Hill State Forest, or within the many private conservation lands and trail systems attract people, which can also enable disease transmission. Lyme disease rates are increasing in Henniker according to NH Health WISDOM, with no indication of decline. ✦ Waters and beaches susceptible to **high bacteria** counts in the summer include Craney Pond, French Pond, Keyser Pond, Long Pond, Contoocook River, Upper Pond, Pleasant Pond, and more. Many of these locations have had high cyanobacteria (blue-green algae) counts that are harmful to people, or host e. coli counts from people or wildlife. ✦ Wheelabrator in Penacook and the Merrimack Power Station are considered some of the largest sources of local **air pollution**, as is the vehicular traffic of I-89. Air pollution regularly reaches the Central NH region from Canada or the US Midwest.					
RIVER HAZARDS **Ice Jams, Scouring, Erosion, Channel Movement or Debris** ***Event(s) Within Last 5 Years***	✦ **Floodplains of Contoocook River, Hopkinton Everett Flood Control Reservoir**. Major watercourses include Amey Brook, Bean Brook, Black Brook, Brown Brook, Beards Brook (Hillsborough), Cascade Brook, Chase Brook, Colby Brook, Gulf Brook, and the Contoocook River. Because of the high volumes and swift moving Rivers, **bank erosion**, **scouring** and **channel movement** are hazards of potential concern. ✦ **Erosion** of banks continues on along locations of the Contoocook River. Azalea Park was a frequent location of damage. ✦ **Ice jams** could endanger the dams and nearby facilities and have the potential to recur. Areas	**4**	1	3	2	**8.0 HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	currently susceptible include the Contoocook River area of Western Avenue, Patterson Hill, Rose Garage to nearly the center of Town, to railroad trestle. These ice jams can endanger the bridges. ✦ Floating **debris** down the Rivers and Brooks can accumulate at bridges and dams. ✦ The USACE has enough barricades to close all of the roads in the 4 towns they serve. If Jackman Dam (Hillsborough) upstream on the **Contoocook** fails, they would need more barricades.					
SEVERE WINTER WEATHER Snow, Ice, Blizzard or Nor'Easter *Event(s) Within Last 5 Years*	✦ **Entire Town.** Particular areas of concern during **winter weather** include high density areas as listed in **High Wind Events**, including Downtown (traffic crashes), New England College buildings and grounds, Western Avenue, Rush Square Condos, Wood Hill Village Manufactured Housing Park, Henniker Knolls Apartments, Campgrounds (Keyser Pond, Mile Away and Rock N' Birch). Congregate vulnerable populations include the Henniker Community Elementary School, White Birch Center, Congregational Church, St. Theresa's Church, Weare Friends Quaker Meeting House. ✦ Utilities at risk of winter weather include aboveground poles, underground electric lines, wastewater treatment lines (mostly Downtown) and the TDS switching stations on Lester Lane, Dodge Hill Road, Rush Road, Patterson Hill Road, and Western Avenue could be susceptible. Wastewater Pumping Stations at Western Avenue and Ramsdell Road (main). The Cogswell Springs Water Works tanks at Patterson Hill and Davison Road, or the Cogswell Springs Wells at Foster Road and Weare Road could be at risk of icy or heavy snow load conditions. Telecomm towers on Lester Lane, Old Hillsborough Road, Flanders Road (3), and Craney Hill Tower as well as Department antennas, could receive significant impacts from **snow, ice, and blizzards**. ✦ The entire Henniker road network is susceptible to winter conditions, including the state roads. Local Town roads are also often difficult to travel. Many accidents occur on NH 9/US 202 during **storms**. Many local roads, NH 114 and the hilly gravel roads have sharp incline/decline or cars have trouble traveling the road during winter conditions. The NH 9/US 202 ramps are major travel ways for residents and commuters through the Town as is NH 114. ✦ Populated areas of elevation between 1,000'-1400' include including Bear Hill, Buck Hill, Colby Hill, Craney Hill, Liberty Hill, Morrill Hill, Mount	**4**	4	3	4	**14.7 HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	Misery, Mount Hunger, Wadsworth Hill. Many roads lead up and through these hills which can be difficult to keep clear of **snow and tree fall**. ✦ Much of the Town is wooded and forested with most sections vulnerable to **snow, ice effects and power failure**. Homes would be difficult to access with trees and power lines down on the gravel, hilly residential roads. They could be difficult to access with treefall and power lines down from **winter storm** events. Remote subdivisions include Bear Hill Road (26 homes), Colby Hill (19 homes), Craney Hill (38 homes), Liberty Hill Road (40 homes), Mount Hunger Road (25 homes), Rush Road (49 homes), Flanders Road (48 homes), Henniker Knolls on Flanders Road (~40 apts), Tanglewood Drive (52 homes), Highland Drive (53 homes), Dodge Hill Road (40 homes),Foster Hill Road (39 homes), Hemlock Corner Loop (27 homes), Old Hillsboro Road (53 homes), Rush Road (50 homes), Weare Road (45 homes), and Butter Road & Bennett Road (10 homes each). Western Avenue, which could become isolated by treefall, has about 100 homes. There are many more such subdivisions and neighborhoods in Henniker, and many have only one egress ✦ These roads and especially the one-egress roads are often blocked by fallen **trees or powerlines**, and residents cannot access their homes or leave their homes until the road is clear. ✦ Local government operations in the Henniker Town Hall, Highway Garage, Police Department, Fire and Rescue Department, and Transfer Station, Grange, and Craney Hill Tower conduct essential business and make decisions during **winter weather conditions** that keep residents safe. These vital personnel may not live in Town or may have commuting difficulties getting to work to perform these duties.					
SOLAR STORMS AND SPACE WEATHER Solar Winds, Geomagnetic Storms (Aurora Borealis), Solar Radiation or Radio Blackout	✦ **Entire Town.** Should a **solar event** impact the Region, it is likely most electrical and radio systems will become unavailable. The Town's critical facilities must be operational to support residents: Henniker Town Hall, Highway Garage, Police Department, Fire and Rescue Department, and Transfer Station, Grange, Cogswell Springs Water Works, Wastewater Treatment Facility (Ramsdell Road) and Pumping Stations at Western Avenue, and Craney Hill Tower as well as the Henniker Community Elementary School and the New England College facilities. The **aurora borealis** is regularly seen on Mount Kearsarge to	**2**	1	2	2	**3.3 LOW**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
FEW Event(s) Within Last 5 Years	the north in Warner and could likely be spotted from Pats Peak or the Craney Hill Tower, indicating **geomagnetic storms** are present without noticeable effects. ✦ The Town's technology is most vulnerable to **space weather**, especially communications systems and electrical grid. Telecommunications Towers on Lester Lane, Old Hillsborough Road, Flanders Road (3), and Craney Hill Tower; the Eversource electric lines, and the TDS Telecom switching stations on Lester Lane, Dodge Hill Road, Rush Road, Patterson Hill Road, and Western Avenue, community well systems, and private wells serve residents. Electricity (powerlines & substations) may be interrupted. ✦ Alternate support or communications systems available in the event of **blackout** or equipment failure include: Town Department back-up generators and resident generators can temporarily provide power alternatives, and the Concord Area Fire Mutual Aid Dispatch could provide regional communications, and local ham radio operators could provide assistance.					
TROPICAL AND POST-TROPICAL CYCLONES **Hurricanes, Tropical Storms or Tree Debris** ***NO Event(s) Within Last 5 Years***	✦ **Entire Town.** Most **Tropical Events** would impact vulnerable areas including populated buildings, high-density locations, and utilities serving residents and businesses, antennas, and telecommunications towers (See listed under **High Wind**). ✦ 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. (See subdivisions and remote areas listed under **High Wind**). (See residential roads listed under **Winter Weather**) ✦ Agricultural areas are vulnerable to damage from **Tropical Events**: (See listed under **Drought**). ✦ Older, or historical buildings are vulnerable to **Tropical** wind damage: Main Street blocks, New England College facilities, Henniker Historical Society, Congregational Church, St. Theresa's Church, Weare Friends Quaker Meeting House, Colby Hill Inn, Henniker Pharmacy, Grange, Ocean Born Mary House, Hammond's Barn, Barrett House, Old School House, O'Connor House, Kirchner House, Holden House, and buildings within the Historic District could be vulnerable.	**4**	3	4	4	**14.7 HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
WILDFIRE Brushfire, Outdoor Fires or Accidental *Event(s) Within Last 5 Years*	✦ **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**: Hopkinton Everett Flood Control Reservoir, Foster Conservancy, Vincent State Forest, Totten Trails State Forest, Preston Memorial Town Forest, Ames State Forest, Buehler/Salmen Forest, Colby Hill Forest, Craney Pond Town Forest, Craney Hill State Forest, or within the many private conservation lands and trail systems could experience difficult to access **wildfires** while people are recreating on these lands. ✦ The Craney Hill Fire Tower is inactive and not staffed, but would be able to monitor potential wildfires. High elevations over 1,000' including Bear Hill, Buck Hill, Colby Hill, Craney Hill, Liberty Hill, Morrill Hill, Mount Misery, Mount Hunger, and Wadsworth Hill, Pat's Peak ✦ Much of the Town is wooded and forested and sections would be difficult to access in case of **wildfire**. There about hundreds of parcels in Town which are 50 acres or greater, indicating potentially difficult access by fire apparatus. Many of the high elevation 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. Several extremely large, undeveloped parcels are located around town; isome of those over 200 acres include: Bear Hill Road (351 acres), Baker Road (255 acres), Liberty Hill Road (375 acres), Boundtree Road (200 acres), Freeman Colby Road (200 acres), Lyman Road (275 acres), Colby Hill Road (1,033 acres), Liberty Hill Road (386 acres), Rush Road (329 acres). ✦ Slash and brush are found on the ground on throughout Henniker, a highly rural community around a populated Downtown. As people venture into the woods, potential wildfires are waiting to happen.	**4**	3	2	2	**9.3 HIGH**

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
SECONDARY TECHNOLOGICAL AND HUMAN HAZARDS						
DAM FAILURE **Water Overtop, Breach, Beaver, etc.** ***NO Event(s) Within Last 5 Years***	✦ There are no High Hazard (H) or Significant (S) Hazard dams in the community, but there are 2 Low (L) Hazard Dams, Pat's Peak Whisper Impoundment Dam (Chase Brook tributary) and Pat's Peak Dam (unnamed brook) are unlikely to flood but still have potential. ✦ **Dams** in other Towns could have a serious downstream impact should they fail or release too much water. Should the High (H) Hazard Jackman Dam in Hillsborough upstream of the Contoocook River fail or breach, **downstream flooding** is expected to occur along Western Avenue. ✦ Other recreation ponds, Non-Menace dams and regular beaver dams can breach and flood roadways. NM dams are found along Colby Brook, Nichols Pond, Unnamed Streams, and tributaries to Amey Brook and the Contoocook River, all of which are unlikely to flood but still have potential. (See **APPENDIX A** for list). ✦ **Beaver dams** carry a high probability of flooding and potential for breakage. They are problematic in Henniker and are encroaching on the Downtown area after being removed by the Highway Department in the rural areas. Beaver dams are located throughout the Town which could cause significant damage to roads if the natural dams breach.	**3**	2	4	3	**9.0 HIGH**
AGING INFRASTRUCTURE **Bridges, Culverts, Roads, Pipes or Underground Lines** ***Event(s) Within Last 5 Years***	✦ **Entire Town.** Most dams, culverts, and bridges could experience impacts of **aging infrastructure**. Many historic or wooden covered bridges have damaged by high water debris or ice floes, such as Patterson Hill Bridge, Ramsdell Road (Leatherboard) Bridge, Edna Dean Proctor Stone Arch Bridge, Western Avenue Bridge (replaced in 2017) and the picturesque New England College Bridge all over the Contoocook River. ✦ No bridges are red-listed by the state in Henniker and seem to be in decent shape at this time. ✦ The Wastewater Treatment Facility on Ramsdell Road, has components, manholes, pumps, siphons, and underground pipes are outdated and in need of upgrade. A 2019 Asset Management Plan is helping to inventory existing components and plan for future costs and upgrades over the next 10 years. ✦ Many old or undersized culverts remain vulnerable, although the Highway Department replaces dozens annually. The main **washout**	**not scored**	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	locations are located in **Inland Flooding**, but have included Baker Road, Bear Hill Road, Butter Road, Colby Hill Road, Colleague Pond Road, Cote Hill Road, Craney Hill Road, Depot Hill Road, Dodge Hill Road, Dudley Pond, Flanders Road, Freeman Colby Road, French Pond Road, Gulf Road at Depot Hill Road, Hall Avenue and Western Avenue intersection, Hemlock Corner Loop, Highway Department Gage Road, Huntington, Liberty Hill Road, Mount Hunger Road, Old Concord Road, Old Hillsboro Road, Patterson Hill Road, Peasley Road, Quaker Street, Ramsdell Road, Rand Road, River Road, Ray Road between Upper and Middle Pond, NH 114 at town line, Rush Road, Shaker Road, Temple Road, Warner Road and Hemlock Corner Loop, Weare Road at Colby Crossing, Western Avenue (numerous locations), Whitney Road. ✦ Many Town roads have been prioritized for reconstruction and drainage improvement (Category 3). They include French Pond Rd, Morse Road, Hillside Drive, Pearl Street, Prospect Street, Ruffled Road, The Oaks, Shore Drive, Depot Hill Road, Bear Hill Road, Fairview Avenue, Old Concord Road, Patterson Hill Road, Bennett Road, Ramsdell Road, Crescent Street, Foster Hill Rd, Cressey Street, Hall Avenue, Echo Lane, Old Hillsboro Road (East of Bacon Road), Elm Street, Old Hillsboro Road (West of Bacon Road), Gould Street, Western Avenue (Bridge to TWNL), Highland Drive, Western Avenue (Main Street-Bridge), and Longview Drive. ✦ The Town's roads are becoming more difficult to maintain and rehabilitate because of lack of funding and over 40 **miles of Town gravel roads** alone. Weight limits need to be posted and enforced. ✦ **Underground electric utilities or natural gas pipes** are often old and subject to breakage during earthquake or **aging materials**.					
FIRE Vehicle, Structure, Arson or Conflagration *Event(s) Within Last 5 Years*	✦**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. See **Drought** for an agricultural operation list. ✦ The Downtown blocks, New England College campus, residential subdivisions, the Campground	**not scored**	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	communities, Rush Square, Western Avenue housing, and other high density areas could be subject to conflagration. ✦ Henniker is home to many construction yards, lumber mills, fuel depots, and other flammable activities. These are also large employers for the Town. New England College laboratories and facilities could catch fire through occupational event, accident, or arson. Other businesses could be vulnerable to fire and may utilize hazardous materials in their work. See **APPENDIX A** for hazardous materials and business lists. ✦ Vehicle fires could occur anywhere, in parking lots, driveways, or roadways. NH 9/US 202 and their ramps along with NH 114 are highly traveled. The Henniker Fire and Rescue responds to crashes regularly along these State highways. The Intervale Airport could be the location of a significant fire should a plane crash. See also **APPENDIX A**. ✦ Human-started fires could occur in the forested and other wooded or popular conservation areas or along the trail systems. See **Lightning** and **High Wind** for remote area lists.					
HAZARDOUS MATERIALS Haz Mat Spills, Brownfields or Trucking *Event(s) Within Last 5 Years*	✦ **Most likely** routes of vehicular traffic transport of **hazardous materials** include NH 9/US 202 and their ramps along with NH 114. Other local roads could have serious transportation accidents involving hazardous materials. ✦ Vulnerable areas for targeted **mass evacuation** from **hazardous materials spills** include Henniker Community School, New England College Rush Square Condos, White Birch Center, Wood Hill Village Manufactured Housing Park, Henniker Knolls Apartments, Campgrounds (Keyser Pond, Mile Away and Rock N' Birch), the Churches, senior homes or housing facilities. ✦ 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 Ayer & Goss Fuel (who has had no haz mat incidents to date), Mobil Filling Station, Pat's Peak, HHP, Michie Corp, the numerous lumber yards, Central NH Concrete, Granite State Forest Products, construction businesses, and the Transfer Station. Town facilities such as the Damour Wastewater	**not scored**	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	Treatment Plant and Cogswell Springs Water Works utilize and store strong chemicals such as sodium dioxide. ✦ Possible **brownfields** sites to be aware of include vacant locations on Western Avenue along the Contoocook River (old firing range and another property. There are known to be properties with "illegal" long term, non-permitted junkyard use occurring.					
LONG TERM UTILITY OUTAGE Power, Water, Sewer, Gas, Internet, Communications or Live Wire Danger *Event(s) Within Last 5 Years*	✦ **Entire Town.** Electrical outages are often town wide, but high density areas or vulnerable populations are of greatest concern: Henniker Community School (primary Town shelter with generator), Downtown block, New England College Facilities, Grange Hall & Community Center (secondary shelters with no generator), Town Hall, Highway Garage, Police Department, Fire and Rescue Department, Transfer Station, Damour Wastewater Treatment Plant, Cogswell Springs Water Works. Historical sections of Henniker are highly populated along the Contoocook River, with the rest of the population dispersed in remote areas. ✦ Power outages (Eversource) may last for several days in the remote areas before service is restored from a large event. Systems failures could affect Town businesses and local government on an isolated scale. The internet (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 Lester Lane, Old Hillsborough Road, Flanders Road (3), and Craney Hill. Antennas are located on Town Departments and TDS Telecom switching stations are located all over Town. The Craney Hill Tower holds critical local, CAFMAC, County, State, and federal repeaters. ✦ The Town is serviced by the Capital Area Fire Mutual Aid Compact which handles all the Police, emergency medical service, and Fire dispatching. They have redundant capabilities and are regularly upgrading their systems. ✦ Other utility systems, such as LP gas, generators, oil tanks, wood fuel and more, are used by residents as both back up and primary heating. See also **Aging Infrastructure** and **APPENDIX A**.	**not scored**	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	✦ 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 **high elevation**s and remote subdivisions with large numbers of homes. ✦ The agricultural farms (feeding or dairy animals) should be monitored (See **Drought**) during extended utility outage.					
TRANSPORTATION CRASH Vehicle, Airplane, Helicopter, Rail, Interstate, Pedestrian or Bicycle *Event(s) Within Last 5 Years*	✦ **NH 9/ US 202 with its ramps and NH 114** are the main highways through Town, and have the most reported **crashes**. Rerouting traffic can be dangerous resulting in other potentially severe **crashes**. Some of the more frequent crash locations occur along NH Route 202/9, Western Avenue, at the intersection of Route 202/9 and Foster Hill Road, at the intersection of Craney Hill Road and Flanders Road, and between Temple Road and Craney Pond Road. ✦ **Crashes** also occur throughout the community at rural intersections, along hills and s-curves. All gravel roads have a 25 mph speed limit. Winter months are of particular concern, including the extra traffic generated by Pat's Peak. See also **MAPS 1-4**. ✦ **Crashes** increase during hazard events, winter weather, spring snow melt (washouts) and wind storms. High density areas, such as the Downtown encourage bicycling and pedestrians and but also have the potential for serious crashes. ✦ The Town may have alternative **crash** potential, such as airplanes. The Intervale Airport enables small-engine plane traffic, and these type of craft have crashed in nearby communities. Medical helicopters can land here at the Airport. The Town's high elevation may be a challenge to flyers. Helipads are located at Pats Peak, NEC Athletic Field, Fire Station, NH 9/ US 202 and NH 114.	**not scored**	not scored	not scored	not scored	not scored
MASS CASUALTY INCIDENT As a result of any hazard event *NO Event(s) Within Last 5 Years*	✦ **Unlikely, but Possible.** A **mass casualty** event could occur as a possible secondary effect of a large scale event, such as **Terrorism/Violence**, **Public Health**, or **High Wind** Event. These could occur throughout the Town. ✦ Any **mass casualty** event could be localized to a certain event. Locations and occasions of potential public unrest include: New England College, Pat's Peak, White Birch Center, 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	**not scored**	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	events, School Homecoming, Fall Foliage Festival, political rallies. ✦ The Town's regional shelter is located at the Henniker Community School. The Grange Hall & Community Center (secondary shelters with no generator could be made available as warming/cooling shelters with generators. Henniker is a member of the Capital Area Public Health Network and other regional emergency groups. Henniker Fire and Rescue could provide EMS and transport to a larger facility such as Concord Hospital in 20 minutes. ✦ With the College's centralized group population, a potential mass casualty event in Henniker could far exceed the local Town, NEC, and Pat's Peak capabilities.					
TERRORISM/ VIOLENCE Active Shooter, Hostage, Public Harm, Civil Disturbance/ Unrest, Politically Motivated Attacks, Incendiary Devices, Sabotage or Vandalism *Event(s) Within Last 5 Years*	✦ **Possible. Terrorism/ violence** could possibly occur anywhere in **Entire Town** and could result in **mass casualty**. Most susceptible non-municipal sites could include: New England College, Downtown businesses, Henniker Community School, Post Office, White Birch Center, Tucker Free Library, Rush Square Condos, White Birch Center, Wood Hill Village Manufactured Housing Park, Henniker Knolls Apartments, Campgrounds (Keyser Pond, Mile Away and Rock N' Birch). ✦ All municipal facilities in Henniker, Town Hall and Tucker Free Library, Police Station, Fire & Rescue Station, Highway Garage, Transfer Station, Grange, Community Center, have a risk of **terrorism or violence**. ✦ Private manufacturing or industrial businesses with large quantities of hazardous materials could be possible **terrorism** targets. ✦ **Sabotage** would be most likely to occur at Town, School, NEC or governmental facilities to halt operations or computer systems, including the telecomm towers, Craney Hill Tower, the multiple TDS switching stations, and the Town Hall and School District computer systems, or the Damour Wastewater Treatment Plant, Cogswell Springs Water Works facilities. ✦ **Vandalism** could occur at dams, under bridges, at telecomm towers, wooden covered bridges, Craney Hill Tower, cemeteries, vacant buildings, beaver dams, recreation areas, etc. ✦ **Hostage and active shooter** situations might most likely occur domestically anywhere in the Town, in municipal buildings, Churches, NEC residential dorms. The Henn Comm School system is tested weekly, trains staff 12x/year and installed	**not scored**	not scored	not scored	not scored	not scored

Natural, Technological, Human Hazard Categories	Potential/Susceptible (Existing) Hazard Locations in the Town *See also Appendix A. Critical Community and Facility Vulnerability Assessment (CCFVA)*	PROBABILITY of Occurrence in 10 Years	SEVERITY of Impact			OVERALL RISK (1-16)
			Human Injury Impact	Essential Services or Infrastructure Impact	Property Damage or Economic Impact	
	new security equipment (cameras, interior locks changed to fob, windows replaced on first floor). ✦ Sites of local significance, such as Hopkinton Everett Flood Control Reservoir, key bridges, historical sites or monuments (Henniker Historical Society, Congregational Church, St. Theresa's Church, Weare Friends Quaker Meeting House, Colby Hill Inn, Henniker Pharmacy, Grange, Ocean Born Mary House, Hammond's Barn, Barrett House, Old School House, O'Connor House, Kirchner House, Holden House, and buildings within the Historic District.) or other public places could become potential sites of **Terrorism/ Violence**: Foster Conservancy, Vincent State Forest, Totten Trails State Forest, Preston Memorial Town Forest, Ames State Forest, Buehler/Salmen Forest, Colby Hill Forest, Craney Pond Town Forest, Craney Hill State Forest, and others.					
CYBER EVENT **Municipal Computer Systems Attack, Website Overtake, Cloud Data Breach, Telephone Rerouting, Identity Theft, Phishing, Ransomware, Virus or Phone Scams** ***Event(s) Within Last 5 Years***	✦ **Entire Town**. Cyberattack could target Town, School or NEC websites, computer systems, cloud data systems, archival records, email phishing, etc. Town Hall, Police Department, Fire & Rescue Department, Transfer Station, Highway Department, Tucker Free Library, Historical Society records, Army Corps of Engineers would be high-value targets. ✦ Email scams and identity theft are likely regular problems for residents and businesses. Towns often post known attempts on websites to inform residents. The large businesses in Henniker (See **APPENDIX A**) would need to be aware of the risks. ✦ The Fire Department receives phones and internet and email scams from residents and reports them to Microsoft. White Birch Center sees email phishing targeted to its seniors in particular, and so promotes senior education.	**not scored**	not scored	not scored	not scored	not scored

Source: Henniker Hazard Mitigation Committee

Central NH Region Major Disaster Declarations, 1973-2019

The Central NH region, which encompasses parts of Merrimack County (**18** communities) and Hillsborough County (**2** communities), has been damaged by **21** presidentially-declared major disasters in the last **46** years, between **1973-2019**.

Although a natural disaster typically befalls multiple counties in New Hampshire, only those damaging either Merrimack County or Hillsborough County were identified in this section. Over the last **14** years (**2005-2019**), the Central NH region of containing Merrimack and Hillsborough Counties experienced **12** presidentially- declared natural major disasters [DR-] and **3** presidentially- declared emergency declarations [EM-], totaling **15** disasters in the last **14** years. The earliest Central NH region declarations spanned **1973** to **2004** (**32** years) and yielded **9** presidentially-declared natural major disasters and **4** presidentially-declared emergency declarations, a total of **13** disasters in **32** years.

Between **2005-2019**, the most recent round of major disasters afflicting the Central NH Region, of the **12** natural disasters [DR-] **5** were floods, **4** were snow/ice storms, **3** were wind/rain/lightning storms. The disasters [DR-] experienced between **1973-2004** were **7** floods, **1** snowstorms, **1** wind/rain/lightning storm. While disaster declarations within a county open up the ability to receive Public Assistance (PA) funding and Individual Assistance (IA) funding, Hazard Mitigation Grant Program (HMGP) *plan* funding is typically made available to all communities statewide, and for those towns with an active, approved Hazard Mitigation Plan, HMGP *project* funding becomes available.

Emergency declarations [EM-] are often proclaimed for counties in New Hampshire to help communities receive funding for less serious hazard events that may have caused more damage in nearby declared declaration [DR-] counties or states. The **2005-2019** emergency declarations [EM-] for **2** snow storms and **1** hurricane (wind) significantly impacted communities such as Henniker, although not enough to be classified as a declared disaster [DR-] for many counties. Nonetheless, Public Assistance Protective Measures funding was available in the Central NH region to those who needed the financial help. The **1973-2004** period saw emergency declarations [EM-] for **4** snow storms.

PUBLIC ASSISTANCE GRANT FUNDING

The last declared disaster in Merrimack County, in which Henniker is located, was the winter snowstorm event in **February 2013** for which Henniker applied for and received **$30,591** in federal Public Assistance funding. Details of Central NH region declared disasters and emergency declarations since **1973** and federal funding provided to the Town of Henniker are displayed in **Table 11**. Most of these disasters will be described within the following **Past Disasters and Severe Weather Events** section.

Table 11

Central NH Region Major Disaster Declarations, 1973 to 2019

FEMA DR-	Local Disaster Name	Incident Period	FEMA Disaster Name	Includes County*		FEMA Public Assistance (PA) Funding To Henniker**
				Merr	Hill	
	TOWN ADD NEW DISASTER ROWS HERE-					
4355	**2017** October Wind Storm	Oct 28-20, **2017**	Severe Storm and Flooding from Tropical Storm Phillippe	M	---	$0
4209	**2015** January Blizzard	Jan 26-28, **2015**	Severe Winter Storm and Snowstorm	---	H	$0
4105	**2013** Snowstorm NEMO	Feb 8-10, **2013**	Severe Winter Storm and Snowstorm	M	H	**$30,591**
4095 EM-3360	**2012** Hurricane Sandy Emergency	Oct 26-Nov 8, **2012**	Hurricane Sandy	EM-M	EM-H	$0
4049 EM-3344	**2011** Halloween Snow Storm Emergency	Oct 29-30, **2011**	Severe Storm and Snowstorm	EM-M	H	$0
4026	**2011** Tropical Storm Irene	Aug 26-Sep 6, **2011**	Tropical Storm Irene	M	---	**$153,504**
1913	**2010** March Flooding & Winds	Mar 14-31, **2010**	Severe Storms and Flooding	M	H	$0
1892	**2010** Winter Storm	Feb 23-Mar 3, **2010**	High Winds, Rain, Snow	M	H	$0
1812	**2008** December Ice Storm	Dec 11-23, **2008**	Severe Winter Storm	M	H	**$23,381**
1799	**2008** September Flood	Sep 6-7, **2008**	Heavy Rains and Floods	M	H	$0
1782	**2008** July Tornado	Jul 24, **2008**	Tornado, Severe Winds, Heavy Rains	M	---	$0
1695	**2007** April Spring Flood	Apr 15-23, **2007**	Severe Storms and Flooding	M	H	**$111,378**
1643	**2006** Mother's Day Flood	May 12-23, **2006**	Severe Storms and Flooding	M	H	**$79,866**
1610	**2005** Columbus Day Flood	Oct 7-18, **2005**	Severe Storms and Flooding	M	H	**$27,550**
EM-3207	**2005** Snow Emergency	Jan 22-23, **2005**	Snowstorm	M	H	**$13,563**
EM-3193	**2003** Snow Emergency	Dec 6-7, **2003**	Snowstorm	M	H	**$16,832**
EM-3177	**2003** Snow Emergency	Feb 17-18, **2003**	Snowstorm	M	H	**$11,732**
EM-3166	**2001** Snow Emergency	Mar 5-7, **2001**	Snowstorm	M	H	**$13,069**
1231	**1998** Flooding	Jun 12-Jul 2, **1998**	Severe Storms and Flooding	M	H	$0
1199	**1998** December Ice Storm	Jan 7-25, **1998**	Ice Storms	M	H	$0
1144	**1996** Storms and Flooding	Oct 20-23, **1996**	Severe Storms and Flooding	M	H	$0
1077	**1995** Flood	Oct 20-Nov 15, **1995**	Storms and Floods	M	---	$0
EM-3101	**1993** Blizzard	Mar 13-17, **1993**	Blizzards, High Winds and Record Snowfall	EM-M	EM-H	**$4,336**
917	**1991** Hurricane Bob	Aug 18-20, **1991**	Severe Storm	---	H	N/A

FEMA DR-	Local Disaster Name	Incident Period	FEMA Disaster Name	Includes County*		FEMA Public Assistance (PA) Funding To Henniker**
				Merr	Hill	
876	**1990** Flooding and Severe Storm	Aug 7-11, **1990**	Flooding and Severe Storm	M	H	No data
789	**1987** Storms and Flooding	Mar 30-Apr 11, **1987**	Severe Storms and Flooding	M	H	No data
771	**1986** Storms and Flooding	Jul 29-Aug 10, **1986**	Severe Storms and Flooding	---	H	N/A
399	**1973** Storms and Flooding	Jul 11, **1973**	Severe Storms and Flooding	M	H	No data
Total Public Assistance (PA) FEMA Funding to Henniker, 1993-2019**						**$485,803**

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

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

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

To help reclaim some of the costs these disasters wrought on town property and infrastructure, Henniker 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 (**2019**). The Public Assistance (PA) disaster funding was sought for and received by Henniker for **6** of the **15** eligible *declared disasters* [DR-] in Merrimack County during this timeframe. *Emergency declaration* [EM-] funding was sought and received by Henniker for **5** of the **7** eligible declared emergencies during this time period. In total, Henniker was eligible for Public Assistance funding from **22** storms during this **26**-year time period and applied for received PA funding from **11** of these storms. This data is available through FEMA at https://www.fema.gov/openfema-dataset-public-assistance-funded-projects-details-v1.

The most expensive disaster for Henniker in terms of FEMA Public Assistance (PA) funds received for recovery was the **Aug-Sep 2011 Tropical Storm Irene** after which Henniker received **$154k** for **2** applications for project funding to help repair Craney Hill Road and the Temple Road Bridge. The last time the Town was awarded PA funding was the **$31k** for the snow removal from the **February 2013 Snowstorm**. All Public Assistance funding to date from **1993** to **October 2017,** totals **$486k**. This detail is displayed previously in **Table 11** and is summarized to $100/$1000 in the forthcoming **Table 12** for each disaster.

Past Disasters and Severe Weather Events

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

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

Also identified were numerous past hazard events or severe weather events that occurred locally in the community and within the area that were impactful enough to note in **Table 12 Local and Area Hazard Event and Disaster History**. These past hazard events are listed consecutively with the newest events at the top of the table. If a specific category of event was not recorded in Henniker in the last **5** years, this means the Hazard Mitigation Committee did not recall an event of significance since the **2014 Plan**.

COLOR KEY for Table 12:

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

Table 12

Local and Area Hazard Event and Disaster History

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
TOWN TO ADD NEW EVENT ROWS HERE								Henniker Hazard Mitigation Committee
Henniker Cyanobacteria Advisory for Long Pond Jul 2019	No	2019	Jul 31	N/A	N/A	The State issued a cyanobacteria warning for Keyser Pond in July 2019. The state threshold of 70,000 cells/ml were far exceeded with Long's total count of 131,000 cells/ml. A deep layer bloom was also observed. The Town posted the beach as closed.	Public Health, Cyanobacteria, Water Quality	CNHRPC, NH Department of Environmental Services
Severe Storm and Flooding Jul 2019	**4457**	**2019**	**Jul 11-12**	**N/A for Henniker**	Within the Central NH Region, it is likely communities experienced local flooding conditions, with wind blowing trees down, causing short power outages. Not a declared disaster in Merrimack or Hillsborough Counties.	**Henniker could not apply for or receive PA funding.** The Town had likely experienced hard rains, localized flooding and culverts required cleaning to ensure road washouts did not occur. A few trees may have fallen down on roads, but the storm was not particularly notable to Henniker.	River, Wind, Storms, Debris, Flood, Utility, Aging Infrastructure	Henniker Hazard Mitigation Committee, CNHRPC, NH HSEM
Henniker Cyanobacteria Advisory for Keyser Pond Jul 2019	No	2019	Jul 10	N/A	N/A	The State issued a cyanobacteria warning for Keyser Pond in July 2019. The state threshold of 70,000 cells/ml were far exceeded with Keyser's total count of 145,000 cells/ml. A deep layer bloom was also observed. The Town posted the beach as closed.	Public Health, Cyanobacteria, Water Quality	CNHRPC, NH Department of Environmental Services
Henniker Landslide Apr 2019	No	2019	Apr 27	N/A	NH 9/US 202 runs east west through Henniker, exiting Henniker at Hopkinton (east) and Hillsborough (west), and is used by commuters from all over the State and Vermont	In the dark of night on April 27, an earthen, chunky landslide occurred sliding down an on ramp to NH 9/ US 202 towards a drainage ditch. There were no accidents, and traffic was safely rerouted (see photo).	Earth, Landslide, Extreme Temps, Rapid Snow Pack Melt, Flood, Debris Impacted Infrastructure,	Henniker Hazard Mitigation Committee, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
							Transportation	
Henniker Potential Gas Explosion **Apr 2019**	No	2019	Apr 14	N/A	N/A	At a local home, a worker drove a vehicle over the relief valve of a 1,000 gallon propane tank. People were evacuated the area. The FD blew fumes away from the house, called in CAFMAC assistance and Central NH Haz Mat Team. The tank made an ice ball of the propane because it was slowed down by the cold and the valve was broken off. Responders rolled the truck off the valve by hand, while using metering devices and protective clothing. A propane specialist and haz mat team changed the valve off and turned it off. The event took over 6 hours. The homeowner's drone flew very closely nearby and filmed the incident. The drone could have lost control and made the situation worse.	Tech Hazard, Utility, Explosion, Public Health (Water Quality, Fire, Crash	Henniker Hazard Mitigation Committee, CNHRPC
Capital Area Fire Mutual Aid Compact (CAFMAC) Communications Outage **Apr 2019**	No	2019	Apr 6	N/A	About 23 communities belong to the CAFMAC and were similarly impacted by the radio dispatch outage.	The dispatch center in Concord lost power because a tree fell on Unitil's wires. The facility is protected by a large uninterruptible power supply (UPS) that protects computers, telephone & radio equipment. This UPS also is a power conditioner so it is always on, working in the power line entering the building insuring that incoming power is clean and on specification. The City of Concord also has a diesel backup generator for power loss, the UPS is running in the incoming line so it powers CAFMAC	Utility Failure, Communications Failure	Henniker Hazard Mitigation Committee, CNHRPC, CAFMAC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						equipment during the very brief period it takes the generator to start and the transfer switch to transfer. This all worked seamlessly, as it has many time before. CAFMAC ran on the generator without issue but when Unitil reenergized their lines and the generator transfer was switched, the UPS failed. Despite having a backup for our backup, power to equipment was lost, resulting in damage to additional equipment beyond the UPS. On-duty staff immediately started to implement the continuity of operation plan. Lakes Region began dispatching for CAFMAC but the Simulcast equipment at the dispatch center was down. Initially Lakes was dispatching on their antenna sites and the audio was poor and tones were not getting through. CAFMAC was able to get the radio system running again and Lakes Region was then able to dispatch calls over the Simulcast system. CAFMAC then sent 2 dispatchers to Lakes and called others back into the Concord center to work through the problems caused by the outage.		
Henniker High Wind and Debris Event Apr 2019	No	2019	Apr 3-4	N/A	N/A, although it is likely surrounding communities experienced similar high wind conditions and related debris and power outage issues	High winds blew across Town resulting in treefall and powerlines down in the Tanglewood area of up to 24 hours. At Tanglewood and Foster Hill Road, a tree fell and caused a 0.5 acre fire during this wind event. The fire was handled within Town Fire Dept, which filled its	Wind, Storm, Debris, Treefall, Live Wire Danger, Structure Fire	Henniker Hazard Mitigation Committee, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						tanker at the Fire Station.		
Canterbury Epicenter Earthquake 2.3M (Mercalli III) **Mar 2019**	No	2019	Mar 16	N/A	Many local news outlets reported on this quake, which shook communities of Merrimack County at 9:23 PM. This was a widely felt earthquake (Concord, Webster, Hopkinton, Canterbury, Boscawen, Loudon, and more) although there were no reports of damage. USGS reported the epicenter was at Bryant Brook in Canterbury, just east of the Merrimack River. The depth was 4.2 km.	Henniker residents may have felt shaking from this quake a few miles to the east. The USACE registered this earthquake on their Hopkinton Dam monitoring equipment.	Earthquake, Earth	Henniker Hazard Mitigation Committee, CNHRPC, wmur.com, unionleader.com, earthquake.usgs.gov, Hopkinton Dam USACE
Henniker Fatal Transportation Crash **Mar 2019**	No	2019	Mar 1	N/A	N/A, but First-responders from Bradford, Hopkinton and Hillsborough, as well as state police, assisted Henniker police and fire crews.	Three people were injured when a pickup truck traveling west crossed the center line and hit the guardrail on the eastbound side. The truck ricocheted across the road hitting the opposite guardrail, crossed the road again, and collided with two other vehicles.	Transportation Crash, Human, Winter	Henniker Hazard Mitigation Committee, CNHRPC, Concord Monitor
Capital Area Fire Mutual Aid Compact (CAFMAC) Communications Outage **Feb 2019**	No	2019	Feb 9	N/A	About 23 communities belong to the CAFMAC and were similarly impacted by the radio dispatch outage.	CAMAFC area went completely black for 1+ hours. The Comm center down and out. The transfer switch UPS from the facility connecting the generator failed. Generator backup switch then failed. Had to send staff to Lakes Region dispatch. For 1 full day, member towns could not communicate with dispatch. Henniker used local radios did not seem to experience any issues.	Utility Failure, Communications Failure	Henniker Hazard Mitigation Committee, CNHRPC, CAFMAC
Henniker Snowmelt, Rains and Inland Flooding **Jan 2019**	No	2019	Jan	N/A	This was a period when the Central NH region experienced similar flooding conditions. Multiple communities were affected.	The month Jan 2019 brought snowstorms, Rains and subsequent warm days to melt the snow and cause flooding throughout Town. Basement flooding was reported and sump pumps were at work.	Extreme Temp Change, Winter, Flood, Rains, Inundation, Debris Impacted Infrastructu	Henniker Hazard Mitigation Committee, Hopkinton Dam USACE, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						Rush Road experienced flooding. White Birch Center classrooms were inundated by water and programs could not be held. The Center is one location where vulnerable seniors and children can go for safety, but this informal shelter was unavailable due to the severity of the weather. Ice jams and ice stacking were observed near Western Ave. and along other portions of the Contoocook River.	re, Ice Jams, Washout	
Henniker Early Snowstorms and Avalanche Winter 2018-208	No	Nov 2018 -	Mar 2019	N/A	N/A. Several communities in NH enjoy mountainous recreational resorts for winter skiers and ski-boarders. Pat's Peak is the only location in the Central NH region.	Avalanches do not happen regularly, but small ones do occur at Pat's Peak on occasion. If they occur, they are on closed-off trails not open to skiers. Early snowstorms with high temperatures and melt cycles can result in optimal conditions for avalanche. Training for employees enables conditions to be spotted early and the trails closed off, or if needed, for appropriate emergency response.	Extreme Temps, Snow, Avalanche	Henniker Hazard Mitigation Committee, CNHRPC
Henniker Rains and Inland Flooding Oct-Nov 2018	No	2018	Oct-Nov	N/A	This was a period when the Central NH region experienced flooding conditions. Multiple communities were affected.	In October-November, multiple days of moderate rainfall increased Contoocook River flows and the USACE flood storage pool elevations. As a result, both River Road and Old Concord Road are closed. In Town, it is likely many of the gravel roads experienced washouts.	Flood, Rains, Inundation, Debris Impacted Infrastructure, Washout	Henniker Hazard Mitigation Committee, Hopkinton Dam USACE CNHRPC
Henniker Extreme Temperature Fluctuations with Snow & Ice	No	Nov 2018 -	Apr 2019	N/A	The entire Central NH region experienced extreme temperature temperatures during this time period.	During the 2018-2019 winter season, road issues with ice problems have emerged as a pattern. The Highway Dept road crews contend with the	Extreme Temp Changes, Snow, Winter, Ice, Rapid Snow Pack Melt,	Henniker Hazard Mitigation Committee, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Nov 2018 – Apr 2019						ice/snow by plowing because the salt washes off the gravel roads and the gravel roads washout when the ice is left on the surface and then melts.	Washout, Flood, Inundation	
Henniker Drought and Water Department Restrictions Summer 2018	No	2018	Jun-Aug	N/A	The rest of Merrimack County and surrounding area experienced similar drought conditions.	Water use restrictions were issued throughout the entire Town. Both the Water Works district and the remainder of Town conserved water.	Drought, Extreme Temps, Excessive Heat, Public Health	Henniker Hazard Mitigation Committee, CNHRPC
Henniker Severe Windstorm Jun 2018	No	2018	Jun 8	N/A	Other nearby communities likely experienced some effects of this windstorm, including treefall onto roads.	Severe winds and resulting damages were experienced on Quaker Hill Road, Baker Road, Dudley Pond Road, and others roads. Trees and wires down on the roads and traffic was rerouted.	Wind, Tree Debris, Downed Wire Danger, Utility, Power Outage	Henniker Hazard Mitigation Committee, CNHRPC
Regional Thunderstorm, Severe Winds, Tornado and Debris May 2018	No	2018	May 3-5	N/A	All across the northern Central NH region, the evening of May 4 experienced heavy downpours along with strong wind gusts, straight line winds (microbursts) and possible tornadic activity. Many communities suffered significant tree and structure damage. The National Weather Service determined an EF-1 tornado blew 36 miles, about 300 yards across, through Bradford, Warner and Webster in the CNHRPC Region after originating in Charlestown (Sullivan County). About 41,000 customers lost power as a result of the storm.	The tornado did not seem to travel through Henniker although it traveled through abutting Warner to the north. The winds accompanying this storm likely knocked down trees and power lines, blocked roads, and caused short-term power outages in Town.	Wind, Tornado, Debris, Utility, Power Outage	Henniker Hazard Mitigation Committee, CNHRPC, wmur.com, Concord Monitor
Severe Winter Storm and Snowstorm Mar 2018	**4371**	**2018**	**Mar 13-14**	**N/A for Henniker**	Within the Central NH Region, it is likely communities experienced regular snowstorm conditions, with heavy snow and wind blowing trees and power lines down, causing short power outages. Not a declared disaster in Merrimack	**Henniker could not apply for or receive PA funding.** In March, another Nor'easter threatened to close Town Meeting, but this time the vote went on as scheduled. The Highway Dept likely spent additional time cleaning roads and	Winter, Extreme Temps, Wind, Storms, Debris, Utility, Aging Infrastructure	Henniker Hazard Mitigation Committee, CNHRPC, NH HSEM

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					or Hillsborough Counties	debris to ensure all could vote.		
Concord/ Hopkinton Epicenter Earthquake 2.4M (Mercalli IV) **Mar 2018**	No	2018	Mar 7	N/A	A significant 2.4M earthquake was recorded by the USGS in March 2018 a little after 5:00am. Its epicenter indicated in Concord south of Warner Road at the Hopkinton town line on the Contoocook River at a depth of 3.2km. 90 citizen reports were filed to USGS. Weak to light shaking and a boom was heard as reported by a great number of people in Penacook, 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.	In Henniker, residents heard rumbling, could feel the quake. The USACE registered this earthquake on their Hopkinton Dam monitoring equipment.	Earthquake, Earth	Henniker Hazard Mitigation Committee, Earthquaketrack.com, CNHRPC, concordmonitor.com, earthquake.usgs.gov, Hopkinton Dam USACE
Severe Storm and Flooding **Mar 2018**	**4370**	**2018**	**Mar 2 - 8**	**N/A for Henniker**	Within the Central NH Region, it is likely communities experienced local flooding conditions, with wind blowing trees down, causing short power outages. Not a declared disaster in Merrimack or Hillsborough Counties	**Henniker could not apply for or receive PA funding.** The Town likely experienced early spring rains that flooded culverts and caused a few washouts.	River, Wind, Storms, Debris, Flood, Utility, Aging Infrastructure	Henniker Hazard Mitigation Committee, CNHRPC, NH HSEM
Henniker Ice Jams **Jan 2018**	No	2018	Jan 28	N/A	These January events were a continuation of the impacts of temperature fluctuations experienced in the Central NH region.	On Jan 28 on Western Ave at Patterson Hill Road bridge, an ice jam was located on the Contoocook River. The ice jam spanned from Rose Garage to nearly the center of Town and to the old railroad trestle on the River. The floes melted quietly without damaging the infrastructure.	River, Flood, Extreme Temp, Winter, Debris, Ice Jam	Henniker Hazard Mitigation Committee, CNHRPC
Regional Flooding, Ice Storms, Snow Melts and Ice Jams **Jan 2018**	No	2018	Jan 13-23	N/A	During the month of January 2018 with several snowfall and melt periods, the region experienced high snow totals, flooding, and	Henniker received 15" in snow during this blizzard and flooding event. The Town also likely experienced ice jams on the Contoocook River	River, Flood, Extreme Temp, Winter,	Henniker Hazard Mitigation Committee, CNHRPC, nhpr.org

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					temperature fluctuations.	and tree debris and power lines down on many roads, many of which were also washed out. There were power outages and likely accidents. Some roads may have flooded more completely than a washout as a result of this weather event.	Debris, Ice Jam	
Henniker Fire Dept Calls for Service **Jan-Dec 2018**	No	2018	Dec-Jan	N/A	The Town is a member of the Capital Area Fire Mutual Aid Compact (CAFMAC) of about 23 member communities in 4 counties. Mutual aid is provided and received as needed.	In 2018, a greater number of Fire Dept calls, particularly for grounded lightning strikes, were noted, with 17 more fire-related calls than normal. A brief list of the 972 Fire & Rescue calls for 2018 (up from 928 in 2017, a +4.7% increase, and up from 904 in 2016): Calls for- Fire Alarm Activation- 80 Service Calls- 16 Rescue Assist EMS- 52 Fire- 37 Hazardous Conditions- 35	Fire, Lightning, Wildfire, Outdoor Fires, Structure Fire, Hazardous Materials,	Henniker Hazard Mitigation Committee, CNHRPC, Henniker Town Report 2018
Henniker Domestic Violence Incidents Jan-Dec 2018	No	2018	Jan-Dec	N/A	N/A	The Henniker Police Dept reported that in 2018 alone, 24 domestic violence threats were reported.	Human, Violence, Terrorism, Domestic Disturbance	Henniker Hazard Mitigation Committee, CNHRPC
Henniker Transportation Pedestrian Crash **Circa 2018**	No	2018	Circa	N/A	N/A	A New England College student was seriously injured (possibly a fatality) by a vehicle after crossing the street in a crosswalk.	Transportation Crash, Public Safety, Human	Henniker Hazard Mitigation Committee, CNHRPC,
Regional CAFMAC Radio Communications Disruptions by Solar Storms **2018-2019**	No	2018-2019		N/A	The Town is a member of the Capital Area Fire Mutual Aid Compact (CAFMAC) of about 23 member communities in 4 counties. Mutual aid is provided and received as needed.	Henniker reported 2018-2019 geomagnetic storms affected radio transmissions. Reception has been better since CAFMAC transferred to the SimulCast system and has undergone upgrades. In June 2018, a minor G1 geomagnetic storm contributed to ending the Northeast drought.	Solar Storms, Communications Interruption, Utility	Henniker Hazard Mitigation Committee, CNHRPC, visibleearth.nasa.gov

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						In late August (26-27) 2018, the aurora borealis was visible across the planet, including in NH at high elevations. This event was classified as a strong G3 geomagnetic storm. In May (16-17) 2019, a G2 moderate geomagnetic storm with aurora borealis was forecast for New Hampshire. From Aug 31- Sep 1 2019, a G2 storm was observed again impacting NH with a positive polarity coronal hole high speed stream influence with solar wind speeds of >800km/s.		
Henniker Flood Control Closures **Spring Annually**	No	2019	-annually	N/A	N/A, although the Hopkinton-Everett Reservoir area is located within Hopkinton, Henniker, Weare and Dunbarton.	Each year, Old Concord Road, Ramsdell Road, and River Road are closed due to snowmelt for two to three weeks. The situation is controlled by the Army Corps of Engineers, which is just an inconvenience to residents.	Winter, Flood, River, Rapid Pack Snowmelt	Henniker Hazard Mitigation Committee, CNHRPC
Henniker and Hopkinton-Everett Flood Control Reservoir Flooding **Dec 2017 – Jan 2018**	No	Dec 2017 -	Jan 2018	N/A	The Central NH Region likely experienced similar rail, snowmelt, flooding and runoff conditions during this time.	From Dec 201 to Jan 2018, 1.5-3 inches of rain and snowmelt increase Contoocook River levels and USACE Flood Control Reservoir storage pool elevations considerably. As a result, River Road was closed. Ice jams and ice stacking were observed near Western Ave. and along other portions of the Contoocook River.	Extreme Temp Change, Winter, Rail, Rapid Snow Pack Melt, Flood, Inundation	Henniker Hazard Mitigation Committee, Hopkinton Dam USACE CNHRPC
Severe Wind Storm and Flood **Oct 2017**	**4355**	**2017**	**Oct 28-30**	$0	Merrimack and Hillsborough Counties experienced downed trees on powerlines, debris to clean up, and some flooding of	**Henniker did not apply for or receive FEMA Public Assistance funding** for roads & bridges, debris removal, or protective measures.	River, Wind, Storms, Debris, Flood, Utility,	Henniker Hazard Mitigation Committee, Newbury and New

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					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 power for 4-5 days and New London is considered remote and did not have power restored quickly.	Instead, they handled the storm effects within their Dept budgets.	Aging Infrastructure	London Emergency Management, CNHRPC
Henniker School District Excessive Heat 2017-2018 School Year (Sep-Jun)	No	Sep 2017 -	Jun 2018	N/A	N/A	The Henniker School District has no air conditioning. The school year was so hot, the SAU office's computer servers were in danger of overheating. Air conditioning in the server room was installed to fix the problem. The students in the Henniker Community School, and other schools in the SAU, remain without AC.	Excessive Heat, Extreme Temps,	
Henniker Cyanobacteria Pond Advisories Jul 2017	No	2017	Jul 25	N/A	N/A	The State issued a cyanobacteria warning for French Pond and for Keyser Pond in July 2019, which both were experiencing blooms. The state threshold of 70k cells/ml were exceeded. The Town posted the beaches as closed as they are dangerous to swimmers.	Public Health, Cyanobacteria, Water Quality	CNHRPC, NH Department of Environmental Services
Severe Storms and Flooding Jul 2017	**4329**	**2017**	**Jul 1-2**	**N/A for Henniker**	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.	**Henniker could not apply for or receive federal PA funds.** The Town likely conducted debris clean up along roads but noted the storm was not out of the ordinary.	River, Wind, Storms, Flood, Lightning, Debris	Henniker Hazard Mitigation Committee, FEMA CNHRPC, WMUR, NOAA
Henniker Tickborne Diseases Mar 2017 – Nov 2019	No	Mar 2017 -	Nov 2019	N/A	Merrimack County and much of New Hampshire has also experienced an upswing in tick-borne diseases.	Town Departments, EMS, and emergency responders are seeing more children and adults diagnosed with Lyme disease. Friends, neighbors, social groups, and Committees are talking about it.	Public Health, Tick-borne	Henniker Hazard Mitigation Committee, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						Town Depts who work in the field are seeing more and more ticks. Town staff and volunteers are being diagnosed with Lyme and Anaplasmosis. As soon as Highway Dept. personnel leave the trucks, ticks jump on clothing. They use as much Deet as much as they can, but 5-10 ticks are found on each crew member every week. Working outside is now considered dangerous. The Fire Dept reports when the black legged tick is in the nymph stage, people have only 12 hours to remove before the ticks transmit disease. A moose calf was found in the woods, killed by an infestation of ticks (see photo).		
NH Geomagnetic Storm May 2017	No	2017	May	N/A	The aurora borealis (geomagnetic storm) likely reached all of NH although only those with equipment to capture the image likely knew it was occurring. In Warner, the Northern Lights were photographed overlooking Mount Kearsarge. No known effects from the storm.	Henniker was likely subject to any potential geomagnetism or solar radiation. Radio communications interference could have occurred.	Solar Storms, Geomagnetic, Potential Communications failure	Warner Hazard Mitigation Committee, CNHRPC
Henniker Broken Water Main and Pump Station Flooding May 2017	No	2017	May	N/A	N/A	A broken water main in the pump station inundated the station's entire electrical circuit board. The pumping station was full to the ceiling. Then the main breaker at the WWTF tripped. None of the wastewater percolated into the ground. A pump truck made 42 trips to WWTF, pumping effluent uphill about 45' in slope and 140' total distance. Two large generators were attached to the pumps.	Aging Infrastructure, Public Health, Water Quality	Henniker Hazard Mitigation Committee, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						The entire situation took about 5 months to resolve and may have been the result of a shut- off valve for regulation of a new tenant.		
April Fool's Snowstorm **Apr 2017**	No	2017	Apr 1-2	N/A	A spring snowstorm impacted New England, with 50,000 without power in NH alone and 180,000 in the NE. Massachusetts was buried in nearly 2 feet of snow. The Central NH Region experienced more snowfall than the rest of the state, with Henniker at 15", Deering and Concord at 13", and Pembroke at 12".	Henniker was impacted by 15" of snow. As a result, the Town likely had power failures and road washouts because of trees down on roadways, and rapid melting the following the day with warmer temperatures. During April 1-2's inches of rain and snowmelt, increased river levels were observed but the US ACE did not have to close River Road. Minor ice jams/ ice stacking were observed along the Contoocook River.	Winter, Extreme Temp Changes, Snow, Utility, Debris, Storms, Rain, Flood, Inundation	Henniker Hazard Mitigation Committee, Hopkinton Dam USACE, wmur.com, CNHRPC, USA Today
Severe Snowstorm-Town Meeting Blizzard **Mar 2017**	**4316**	**2017**	**Mar 14-15**	**N/A for Henniker**	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.	**Henniker could not apply for or receive federal PA funds.** A state-wide blizzard occurred during Town Meeting, (Election Day Storm).	Winter, Extreme Temp, Snow, Crash	Henniker Hazard Mitigation Committee, CNHRPC,
Webster Epicenter Earthquake 1.9M (Mercalli III) **Feb 2017**	No	2017	Feb 27	N/A	Residents of Contoocook, Webster and Warner in Central NH communities also felt this earthquake. Since it occurred overnight, there were fewer reports. The USGS reported its epicenter north of the Blackwater River in the hilly area between Battle Street and Clothespin Bridge Road at a depth of 8.9km.	The USACE registered this earthquake on their Hopkinton Dam monitoring equipment.	Earthquake, Earth	Henniker Hazard Mitigation Committee, Earthquaketrack.com, CNHRPC, earthquake.usgs.gov, Hopkinton Dam USACE
Henniker Downburst and Windstorm **Feb 2017**	No	2017	Feb 27	N/A	Other nearby communities likely experienced some effects of this windstorm, including treefall onto roads.	On the day of the earthquake, a downburst and windstorm were experienced in Henniker. The	Wind, Downburst, Tree Debris, Downed Wire	through Town toppled trees on roads, wires, backyards

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						downburst swept through Town, toppling trees and wires onto roads, and trees in backyards.	Danger, Utility, Power Outage,	
Henniker Vehicle Fire **Circa 2017**	No	2017	Circa	N/A	N/A	A box truck vehicle fire occurred on Flanders Road. The fire did not reach the nearby house.	Fire, Vehicle Fire, Tech Hazard	Henniker Hazard Mitigation Committee, CNHRPC
Henniker Domestic Disturbance Incidents at White Birch **2017- Present**	No	2017 -	Present	N/A	N/A	Two-3 times each year, White Birch Center has parents arriving who are banging on doors to get to children. Considered domestic disturbances, staff alert the Police Dept to these situations	Human, Violence, Terrorism, Domestic Disturbance	Henniker Hazard Mitigation Committee, CNHRPC
Central NH Region and Henniker Excessive Heat **2016-2017**	No	2016	-2017	N/A	NH and the Central NH region experienced high heat records throughout 2016 and 2017.	In Henniker, dug wells went dry and the Fire Department delivered water to some agricultural operations. The Fire Station was open for individual water provision.	Extreme Temp, Excessive Heat, Public Health	Henniker Hazard Mitigation Committee, CNHRPC
Salisbury Epicenter Triple Earthquakes 1.8M/1.6M/ 1.3M **Oct 2016**	No	2016	Oct 31	N/A	Epicenters of three quakes in Salisbury occurred a few minutes apart, one 1.8M with a depth of 6.1 km, one with 1.6M with a 5.0km depth, and one with 1.3M with 5.0km depth. Three separate epicenters were located, the 2 first quakes south of West Salisbury Road and the last 1 north of the Blackwater River at Bay Road.	Henniker likely felt some ratting from these small earthquakes, with its epicenters only about 10 miles from Town.	Earth, Earthquake	Henniker Hazard Mitigation Committee, Earthquaketrack.com, CNHRPC, earthquake.usgs.gov
Henniker Fatal Transportation Crash **Oct 2016**	No	2016	Oct 9	N/A	N/A	One person died following a crash with another vehicle on NH 9/ US 202 at Dunkin Donuts around 6 PM The vehicle was traveling at speeds above 100 miles per hour, and although noticed by NH State Police, the car did not stop. After the chase ended, the car crashed with another vehicle whose occupants were injured.	Transportation Crash, Human	Henniker Hazard Mitigation Committee, CNHRPC, necn.com
Henniker Terrorism/	No	2016	Sep	N/A	N/A	The Police Dept handled a domestic violence	Human, Violence,	Henniker Hazard

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Violence Incident Sep 2016						situation that included a Molotov cocktail.	Terrorism, Explosion, Fire	Mitigation Committee, CNHRPC
Henniker Hopkinton-Everett Dam Lows Aug 2016	No	2016	Aug	N/A	The Hopkinton-Everett Flood Control Reservoir is located in 4 local communities – Henniker, Hopkinton, Weare, and Dunbarton. The Dams are located in Hopkinton on the Contoocook River and in Weare on the Piscataquog River.	The USACE recorded record low water flows at each of their dams (Hopkinton & Everett).	Drought, Dam Hazards, River	Hopkinton Dam US Army Corps of Engineers, CNHRPC
Henniker Drought and Water Department Restrictions July 2016	No	2016	Jul 27	N/A	The rest of Merrimack County and surrounding area experienced similar drought conditions.	Severe summer drought with several neighborhood wells going dry. In the Downtown, Cogswell Water Works issued water use restrictions, including no watering lawns, shrubs and gardens during the day, using only one hose, and no filling of swimming pools.	Drought, Extreme Temps, Excessive Heat, Public Health	Henniker Hazard Mitigation Committee, CNHRPC
NH Severe Wind Rain & Thunder Storm Jul 2016	No	2016	Jul 23	N/A	The entire region and the State experienced a severe storms with rain, wind, lightning and thunder. A possible microburst was reported. As many as 72,000 customers lost electricity. A similar storm earlier in the week brought several confirmed microbursts and also downed trees.	Henniker likely experienced many of these conditions on their gravel roads. Washouts would have resulted along with downed trees and power lines.	Flood, Debris Impacted Infrastructure, Wind, Lighting, Rains, Utility, Power Outage, Washout	Henniker Hazard Mitigation Committee Concord Patch, CNHRPC, WMUR, NOAA
Henniker Wildfire Jun 2016	No	2016	Jun 24	N/A	With a fire of this size, surrounding communities and those outside the CAFMAC likely assisted Henniker with the fire.	Wildfire on Old Ireland Road burned 14-17 acres. No injuries were reported	Wildfire, Fire	Henniker Hazard Mitigation Committee, CNHRPC
Warner Epicenter Earthquake 2.8M (Mercalli IV) Mar 2016	No	2017	Mar 21	N/A	Epicenter in Warner on Schoodac Brook just south of I-89, with 2.8 magnitude at a depth of 7.3km. 124 citizen reports made to USGS. Felt in the Central NH Region and most of Merrimack County, light in Hillsborough County. Felt most strongly in Hopkinton, Henniker, Warner, Webster, Salisbury, Franklin,	With the epicenter in to the east and south of Henniker, residents may have felt this large daytime quake within 5 miles of Downtown. Rumbles or booms may have been heard and buildings may have rocked.	Earth, Earthquake	Henniker Hazard Mitigation Committee, Earthquaketrack.com, CNHRPC, earthquake.usgs.gov

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					Bradford, Concord, and Hillsborough. This quake was believed to have snapped one of the underground water lines in the Town of Warner, and people exited buildings onto Main Street wondering what happened.			
Henniker and Hopkinton-Everett Flood Control Reservoir Flooding **Feb 2016**	No	2016	Feb	N/A	The Central NH Region likely experienced similar snowmelt, flooding and runoff conditions during this time.	A February Atlantic coastal storm increased Contoocook River levels, but River Road was able to remain open. During this time, minor ice jams/ ice stacking were observed along the Contoocook River.	Winter, Rapid Snow Pack Melt, Flood, Inundation	Henniker Hazard Mitigation Committee, Hopkinton Dam USACE CNHRPC
Tornado, Severe Thunderstorms **Jul 2015**	No	2015	Jul 31	N/A	In Warner, NWS confirmed an EF-0 tornado touched down in the evening. It had a maximum wind speed of 75 mph and was 100 yards wide. Town officials said the tornado ripped the roof off a barn, but there were no injuries reported.	The Town seemed to have escaped the brunt of this tornado, although Warner directly borders Henniker to the north. No significant damages were reported.	Wind, Tornado, Debris, Utility	Henniker Hazard Mitigation Committee, WMUR, CNHRPC
NH Geomagnetic Storm **June 2015**	No	2015	Jun	N/A	The aurora borealis (geomagnetic storm) likely reached all of NH although only those with equipment to capture the image likely knew it was occurring. In Warner, the Northern Lights were photographed overlooking Mount Kearsarge. No known effects from the storm.	Henniker was likely subject to any potential geomagnetism or solar radiation. Radio communications interference could have occurred.	Solar Storms, Geomagnetic, Potential Communications failure	Warner Hazard Mitigation Committee, CNHRPC
Boscawen Epicenter Earthquake 2.3M (Mercalli III) **May 2015**	No	2015	May 24	N/A	Epicenter in lower Boscawen on Queen Street north of Flaghole Pond with 2.3M at a depth of 5km. 61 citizen reports were made at the USGS.	The USACE registered this earthquake on their Hopkinton Dam monitoring equipment.	Earth, Earthquake	Henniker Hazard Mitigation Committee Earthquaketrack.com, CNHRPC, earthquake.usgs.gov, Hopkinton Dam USACE

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Contoocook Epicenter Earthquake 2.1M Apr 2015	No	2015	Apr 25	N/A	The US Geological Survey recorded the 2.1 magnitude tremor near Contoocook just before 6 AM. It was the second small earthquake in NH in as many days. A 2.3 magnitude earthquake was recorded near Sanbornton early Wednesday morning.	Henniker residents may have felt a slight shaking or noise outside. The USACE registered this earthquake on their Hopkinton Dam monitoring equipment	Earth, Earthquake	CNHRPC, nhpr.org, Hopkinton Dam USACE
Henniker Highway Garage Fire, Jan 2015	No	2015	Jan 30	N/A	N/A, although surrounding communities assisted Henniker with the blaze	A fire that destroyed the Henniker Highway Department Garage and vehicles within began at 7:50 PM when the Henniker Fire Dept received a fire alarm activation at the Highway Dept 209 Ramsdell Road. Town fire fighters arrived at the facility in only a few minutes and observed a heavy volume of fire coming from the center of the garage portion of the facility. As a result of the fire, all five (5) dump / plow trucks, the Road Grader parked inside and the Highway Department facility were destroyed. The building had contained a full fire alarm system which provided an early notification of the fire to the fire department, but the building was not equipped with an automatic fire sprinkler system, which would have reduced the extent of damage to the building and the equipment parked inside. The fire seemed to have originated in the engine compartment / cab of one of the tucks. A new Highway Garage was later built in June 2015.	Fire, Structure Fire	CNHRPC, NH Department of Safety Fire Marshall

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Severe Winter Storm and Snowstorm - January Blizzard 2015	**4209**	**2015**	**Jan 26-28**	**N/A for Henniker**	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. Not declared in Merrimack County.	**Henniker could not apply for or receive PA funding.** The Town did not identify this storm as out of the ordinary. The Highway Department has plow trucks and plowing routes and likely cleared the snow and debris. Eversource contractors likely repaired the downed powerlines.	Winter, Extreme Temp, Utility, Winds, Debris	Henniker Hazard Mitigation Committee, fema.gov, Boston Globe
Town/ Merrimack County Drought Severe Emergency 2015-2018	No	2015	-2017	N/A	Severe Drought (D2), Moderate Drought (D1) and Abnormally Dry (D0) intensities were found in communities of Merrimack Country 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 Henniker, including dry fire ponds and residents requesting water assistance.	Drought, Extreme Temp, Increased Wildfire Risk	Henniker Hazard Mitigation Committee, US Drought Monitor NH, NH DES, CNHRPC
Thanksgiving Day Snowstorm Nov 2014	No	2014	Nov 27	N/A	Large amount of snowfall fell in a very short period of time ahead of typical seasonal expectations. Power outages were prolific, with a peak of about 200,000 outages, from the Public Service of New Hampshire,	Henniker also likely experienced similar snowy conditions during this holiday. Pat's Peak was able to open early on November 29 with power restored. The last NH communities to have	Earth, Extreme Temp, Winter, Utility, Wind, Ice, Debris Impacted Infrastructure	Henniker Hazard Mitigation Committee, Concord Monitor, CNHRPC, Eversource Thanksgiving Nor'easter

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					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.	power restored by PSNH were Henniker, Webster, Dunbarton, Warner and Bedford.		2014, PUC After Action Report
Henniker and Hopkinton-Everett Flood Control Reservoir Flooding Oct 2014	No	2014	Oct	N/A	The Central NH Region likely experienced flooding and runoff conditions during this rainy season	In October, multiple days of moderate rainfall increased the Flood Control Reservoir's storage pool elevation. Yet the amount was not enough to close River Road, which is what happened in the spring.	Storms, Rain, Flood, Inundation	Henniker Hazard Mitigation Committee, Hopkinton Dam USACE CNHRPC
Henniker High Wind Events and Tree Fall May-Aug 2014	No	2014	May-Aug	N/A	Other Central NH region communities likely experienced similar high wind events over the summer of 2014.	Along the geographic section of NH9/US 202 to College Hill Road to Old Concord Road, vehicle were stranded 2-3 different times during summer because of high wind events and the related tree fall and utility wires down.	Winds, Storms, Tree Fall, Debris Impacted Infrastructure	Henniker Hazard Mitigation Committee, CNHRPC
Henniker and Hopkinton-Everett Flood Control Reservoir Rapid Snowpack Melt Mar-Apr 2014	No	2014	Mar-Apr	N/A	The Central NH Region likely experienced similar rapid snow pack melt and runoff conditions during this time.	March and April rains and snowmelt caused River Road to close due to Flood Control Reservoir's storage protocol. The pool elevation and local conditions warranted this action. During this same time period, ice jams and ice stacking was observed near Western Ave and other locations along the Contoocook River.	Winter, Rapid Snow Pack Melt, Flood, River, Ice Jam, Inundation,	Henniker Hazard Mitigation Committee, Hopkinton Dam USACE CNHRPC
Henniker Hazardous Materials Circa 2014	No	2014	Circa	N/A	The Contoocook River flows through many communities until it converges with the Merrimack River in Penacook/Boscawen.	Land along Western Avenue is thought toto be contaminated with lead and other substances as the result of an old fire range by the Contoocook River, a potential brownfields site.	Haz Materials, Water Quality, Public Health, Brownfields	Henniker Hazard Mitigation Committee, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Regional Lyme Disease Epidemic 2014 - 2018	No	2014 -	2018	N/A	Likely experienced by other Central NH region communities during the same time period.	Central NH region residents are known to have been subjected to and tested for Lyme Disease; many are positive. Spring is particularly bad. Henniker is a rural, forested town and is used for outdoor recreation. The problem may become worse. The rate of Lyme Disease has believed to have increased in Henniker from the previous 5 years.	Public Health (Epidemic), Tick-borne	CNHRPC, NH Dept of Environmental Services, Greater Sullivan County Public Health Network
Warner Epicenter Earthquake 2.6M (Mercalli IV) Oct 2013	No	2013	Oct 11	N/A	Epicenter in Warner along Warner River, north of Davisville Exit 7, 2.6 magnitude at a depth of 4.0km. Felt in the Central NH Region/ northern Merrimack County, most strongly in Hopkinton, Henniker, Bradford, Warner, Concord, Salisbury, Franklin. 124 citizen reports made to the USGS.	Henniker residents may have heard a sonic boom or felt mild shaking. Warner abuts Henniker to the north.	Earthquake, Earth	Henniker Hazard Mitigation Committee, CNHRPC, earthquake.usgs.gov
NH Severe Storms, Flooding and Landslide Jun-Jul 2013	**4139**	**2013**	**Jun 26 – Jul 3**	**N/A for Henniker**	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). Not declared in Merrimack or Hillsborough Counties.	**Henniker could not apply for or receive PA funding**. Henniker likely experienced heavy rains, road washouts during this event.	Landslide, Storms, Flood, Wind	FEMA, CNHRPC, Henniker Hazard Mitigation Committee
Regional and Henniker Communications Failure Apr 2013	No	2013	Apr 15	No	The bombing incident occurred in Boston during the Boston Marathon. Its effects were felt throughout New England and the country.	On Apr 15 after the Boston Marathon bombing, some Henniker callers could not communicate because the towers were overwhelmed. No carriers were operational.	Terrorism/ Violence, Communications Failure	Regional Hazard Mitigation Committees, CNHRPC
Severe Winter Storm and	**4105**	**2013**	**Feb 8-10**	**$30,591**	Winter Storm FEMA-3360-DR had blizzard	**Henniker applied for and received $30,591 in**	Winter, Extreme	FEMA, Henniker

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Snowstorm - Winter Storm 2013					conditions with wind gust of 50-60 MPH and over 20 inches snow fell on much of New Hampshire and the New England area. Disaster declarations received for emergency protective measures in eight counties of the State.	**FEMA Public Assistance funding** for snow removal. On February 8-9, 2013; a fierce February Nor'easter, struck the state of New Hampshire. This storm was a powerful winter storm that developed from the combination of two areas of low pressure merging above the New England Region. The storm brought almost 3 feet to New England with wind gusts up to 75 mph. NH Governor Maggie Hassan declared a State of Emergency on Feb 8, 2013; all motorists were asked to limit travel past 7 p.m. that evening. The Town of Henniker experienced 24" of snow from Friday, Feb 8 through the afternoon of Saturday, Feb 9. No power outages were reported during the storm in Henniker.	Temp, Wind	Hazard Mitigation Committee, CNHRPC
Hurricane Sandy Oct 2012	**4095 EM-3360**	**2012**	**Oct 26-Nov 8**	**$0**	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.	**Henniker did not apply for or receive FEMA Public Assistance funding** for roads & bridges, debris removal, or protective measures. Henniker did not see much effect from Hurricane Sandy, although power outages were reported, and three homes reported structural damage. No flooding was sustained. Emergency response was mostly for preparation and after the event while the power was being restored, which was out for 2-7 days. Branches fell down on roads. During and for weeks to follow the Henniker School System, Town Hall, and New England	Tropical, Wind, Flood, Debris, Utility, Communications Failure	Henniker Hazard Mitigation Committee, FEMA, Nashua Telegraph, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						College experienced service interruptions with the internet and phone though their TDS, who experienced a communication failure, due to damage in NY & NJ.		
Earthquake 4.0M Hollis ME Epicenter **Oct 2012**	No	2012	16-Oct	N/A	With the epicenter near Hollis Center, Maine, a 4.0 earthquake was measured and felt not only in Central NH, but throughout New England. Reportedly sounding like a jumbo jet and lasting for 10 seconds, calls came in to local Fire Departments inquiring about the event. By two hours later, no calls reporting damages or injuries had been received.	Reports may have been made to the USGS from Henniker with an earthquake of this magnitude as it was felt around the Central NH Region. This earthquake was lightly felt in Henniker.	Earthquake, Earth	Concord Monitor, Earthquake--track.com, CNHRPC, Henniker Hazard Mitigation Committee
Henniker Microburst **Mid-Summer 2012**	No	2012	Jul-Aug	N/A	It is likely other Central NH region towns experienced similar wind events. This microburst moved across Hopkinton to the east of Henniker.	A half (½) mile-wide microburst of about 10-15 minutes in duration struck Henniker in summer 2012. The wind uprooted and snapped off trees. Large 30" oak trees were tipped over. The microburst moved in almost a direct line across the Henniker/ Hopkinton town line. Areas struck include Hatfield Road, River Road, French Pond, Old Concord Road, and Keyser Pond.	Wind, Downburst, Debris	Henniker Hazard Mitigation Committee, CNHRPC
NH Severe Storm and Flooding **May 2012**	**4065**	**2012**	**May 29-31**	**N/A for Henniker**	This declared disaster for Cheshire County. Public Assistance (PA) was available and Hazard Mitigation Assistance (HMA) became available statewide. Damage per capita was high – Cheshire ($26.04). Not declared in Merrimack or Hillsborough Counties.	**Henniker could not apply for or receive PA funding**. There were no specific issues in Town noted. Any flooding, tree fall or other problems were handled as normal Dept response.	Flood, Storms, Wind	FEMA, CNHRPC
Halloween Snow Storm **Oct 2011**	**4049**	**2011**	**Oct 29-30**	**N/A for Henniker**	FEMA-4049-DR. Towns in Central NH were impacted by this shocking, early severe snowstorm, although a	**Henniker could not apply for or receive FEMA Public Assistance funding.**	Winter, Extreme Temp	FEMA, Henniker Hazard Mitigation

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					major disaster declaration was not declared in Merrimack County. Halloween festivities were cancelled in most communities, to the heartbreak of young children. In Hillsborough County, damages were at the equivalent of $5.11 per capita (400,721 people in 2010). The storm was also declared in Rockingham County.	The Town received about 2 feet of snow. Power loss occurred both downtown to multiple areas of the community. New England College was in session with only 1 generator after it lost power. Power was restored in reasonable amount of time, and no sheltering occurred. For the Highway Department, this was just another plowing event, and they were ready to go. They have a team of six available to plow plus three part time crew members come aboard when it snows. There are no spare vehicles as each one is being used to plow the roads by the nine crew members. The sidewalks are plowed later, as they are a lower priority.		Committee, CNHRPC
Tropical Storm-Irene Aug-Sep 2011	**4026**	**2011**	**Aug 26-Sep 6**	**$153,504**	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.	**Henniker received $153,504 in FEMA Public Assistance funding** for roads and bridges (Craney Hill Road and Temple Road Bridge). Due to the heavy rain associated with Tropical Storm Irene, Craney Hill Road was completely washed away along with the Temple Road Bridge. Debris had made its way down the road to the bridge which contributed to Temple Road Bridge's washout Additional washouts occurred along multiple roadways, and power outages were profuse. The estimated cost to Town was about $500,000.00 which was the largest amount of damage during a disaster sustained by Town to date.	Tropical Wind, Flood, Debris, Utility, Power Failure, Debris Impacted Infrastructure	FEMA, Henniker Hazard Mitigation Committee, CNHRPC, NH State Climate Office 8/11 Summary

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
April Fool's Snowstorm **Apr 2011**	No	2011	Apr 1	N/A	A Nor'easter snowstorm impacted the State, causing over 30,000 power outages, most by PSNH. Snow fell in depths of up to 8", but stopped by noon. Although dozens of accidents were reported, no serious injuries were reported.	The snowstorm with heavy, wet snow brought down trees and powerlines. Power outages ensued.	Extreme Temp, Snow, Wind Chill, Power Failure, Debris Impacted Infrastructure	Henniker Hazard Mitigation Committee, wmur.com, CNHRPC, cbsnews
Concord Hospital Bomb Threat **Oct 2010**	No	2010	Oct	Circa	A bomb threat was called in to Concord Hospital as a result of a child custody issue and the group known as the "Oathkeepers." The FBI was contacted, but nothing was found in the Hospital during a bomb sweep. Phone lines were flooded with calls by the Oathkeepers to inhibit using the landlines. The incident was determined to be harassment instead of an actual event.	N/A to Henniker although the response was likely regional. Any impacts to the hospital would have been felt regionally as the Hospital serves much of the State and Henniker is a member of the Capital Area Mutual Aid System for emergency dispatch services.	Terrorism	Concord Hazard Mitigation Committee, CNHRPC
Canterbury Earthquake Epicenter 3.2M (Mercalli V) **Sep 2010**	No	2010	Sep 26	N/A	"A magnitude 3.4 [sic] earthquake rattled buildings and nerves across much of New Hampshire Saturday night. The quake occurred at 11:28 p.m. and was centered about 10 miles north of Concord, according to the U.S. Geological Survey. State police said they received reports from residents across the state who reported what they thought was an explosion. The quake was felt in places like Fremont, Derry, Durham, Henniker, Penacook and Raymond. There were no reports of damage." The quake was in fact felt all over the state, Southern ME and MA, but most reports were received from the Central NH region. After study and analysis, USGS reported a 3.2M	Epicenter in Canterbury is about 25 miles to the east of Henniker across the Merrimack River. Numerous residents from across the state called WMUR's newsroom to report shaking and tremors in their home. Many said the quake felt like a "low rumbling" that rattled windows and shook homes for several seconds. Several residents also reported hearing a loud "boom" before feeling their homes shake. One emergency dispatcher with the town of Canterbury reported receiving 400 calls in 20 minutes	Earth, Earthquake	Henniker Hazard Mitigation Committee, Union Leader, CNHRPC, earthquake.usgs.gov, wmur.com

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					quake at a depth of 5.0 km and a total of 2,494 citizen reports. The epicenter was in Canterbury just east of I-93 and Cold Brook, north of Soapstone Road and south of Cogswell Road.			
Quebec-Ottawa Earthquake 5.0M (Mercalli VI-VII) **Jun 2010**	No	2010	Jun 23	N/A	Earthquake lasted about 30 seconds, epicenter in Val-de-Bois Quebec (Ottawa) at a depth of 22 km. The shaking that occurred in Ottawa was rated the strongest in 200 years. Damages occurred in Ottawa. The tremors were felt in Central NH. 288 aftershocks were located.	No known impacts to Henniker specifically, but this large quake was felt regionwide.	Earthquake, Earth	CNHRPC, Geological Survey of Canada
Canadian Wildfires Air Pollution **May 2010**	No	2010	May 31	N/A	The smoke from the wildfires was seen and smelled across Central NH. On Memorial Day weekend, brush fires from Canada impacted the air quality of New Hampshire Residents from more than 50 wildfires that are burning out of control in Quebec. Over 150,000 acres in central Quebec, north of Montreal and Quebec City, about 500 miles north of Manchester, reduced visibility to 1.75 miles in Concord. No air quality alert was issued, although people with respiratory issues were urged to remain indoors.	Henniker likely experienced the effects of this smoke, smog, and fine particulate matter. High elevations would have been most susceptible, as would those who exercised outdoors.	Wildfire, Health (Air Quality)	Union Leader 2010, CNHRPC
Severe Storms and Flooding **Mar 2010**	**1913**	**2010**	**Mar 14-31**	**$0**	Severe storms and flooding occurred over two weeks and damaged roads and bridges. Merrimack County reimbursement to towns for repair was $0.28 per capita (146,455 people in 2010) and in Hillsborough County reimbursements were $1.80 per capita	**Henniker did not apply for or receive FEMA Public Assistance funding** for roads & bridges, debris removal, or protective measures Much of the damage from the previous storm was still being cleaned up and repaired. Severe storms and flooding occurred over a two-week period which	Wind, Flood, Utility, Debris	Henniker Hazard Mitigation Committee, FEMA

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					(400,721 people in 2010).	caused minor washed out road from flooding.		
Severe Winter Storm and Flooding Feb-March 2010	**1892**	**2010**	**Feb 23-Mar 3**	**$0**	This severe weather event included high winds, rain, and snow over a week-long period. The primary impact was debris removal and repair reimbursement for fallen trees and powerlines. In Merrimack County, the reimbursement to communities was the equivalent of $10.39 per capita (146,455 people in 2010), with Hillsborough County at $3.68 per capita (400,721 people in 2010). In the Concord area, 21,000 Unitil customers were out of power at the peak outage period.	**Henniker did not apply for or receive FEMA Public Assistance funding** for roads & bridges, debris removal, or protective measures. In Henniker, this winter storm was not nearly as severe. Power outages occurred, but the storm was not any bigger issue than a typical snow storm. Two reports were recorded of damage to property due to falling trees limbs, and minor road wash outs were reported. The Town did not request FEMA reimbursement for this disaster.	Extreme Temp, Snow, Wind, Flood, Debris, Aging Infrastructure	Henniker Hazard Mitigation Committee, FEMA, Unitil, CNHRPC
Vermont Yankee Tritium Contamination Jan 2010	No	2010	Jan 7	N/A	The Vermont Yankee Nuclear Power Plant notified the Vermont Department of Health that groundwater monitoring samples taken in November 2009 contained tritium. An investigation was launched, and a major source of leakage was found in steam pipes inside the Advanced Off-Gas (AOG) drain line to be clogged and corroded. The samples taken show the movement of the tritium contamination in the groundwater into the Connecticut River. Health risks are being investigated.	Henniker may be affected in the future as groundwater sources are connected. The Connecticut River travels the NH / VT border.	Radiological, Health (Water Quality)	Vermont Department of Health 2012, CNHRPC
Severe Winter Storm – Dec 2008 Ice Storm	**1812**	**2008**	**Dec 11-23**	**$23,381**	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	**Henniker received $23,381in FEMA Public Assistance funding** for debris removal and protective measures. On December 11, 2008, a two inch blanket of ice coated the Town of Henniker. While residents slept through	Winter, Extreme Temps, Cold, Wind, Utility, Debris, Communications Failure	Henniker Hazard Mitigation Committee, FEMA, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					$10.07 per capita (146,455 people in 2010). In Hillsborough County, debris removal costs were $6.35 per capita (400,721 people in 2010). The major disaster was declared in all 10 counties. New England was blanketed with ice and snow during the winter storm. Weight of ice caused branches to snap, and trees to either snap or uproot, bringing down power lines and poles across the region. About 400,000 utility customers lost power during the event, with some customers without power for two weeks. Property damage across northern, central and southeastern NH was estimated at over $5m. Event was the largest power outage in NH history.	the storm, emergency personnel risked their own safety, dodging power-lines, falling limbs and chunks of falling ice to try to keep ahead of the storms destruction. As the sun came up to illuminate the crystal coated community, it also illuminated the havoc that the storm had left in its wake. Many residents did not just suffer from the lack of power but also found themselves without phone service, and found roadways and driveways blocked by power-lines, tree limbs, and debris. Some in town also awoke to find significant damages to their vehicles and homes. Downtown was without power for 48 hours. Power to the rest of Town was restored over the next 12 days. Communication was lost at the Highway and Police Departments until a portable generator was placed at the Craney Hill tower site to power their repeaters. The Town Emergency Shelter opened for the first time. Emergency management officials worked with National Guard and the State Emergency Operations Center until power was restored. During that time Fire, Rescue and Police needed fuel. Ayer Goss found a way without power to make sure the trucks, vehicles, and generators stayed up and running. Trees and power lines were down on the		

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						roadways and on driveways and homes, which caused the most difficulty in restoring. The level of infrastructure damage to the region caused restoration difficulties. Once the roads were cleared, PSNH process took the most time to handle the smaller outages. Tree damage was extensive. Issues included trees hanging on the wires. Sanding was done on roads where possible, but some roads could not be accessed. Fire, Rescue and Police Department personnel used personal ATVs to get to residents with medical disabilities. Assistance could only get to Henniker so fast as the entire State was affected. Resources and Red Cross were stretched to their limits. This was the first time such a wide-spread, damaging disaster had occurred. Henniker purchased 75 cots for sheltering at the Henniker Community School. When not in use, the cots are stored in the Town Hall.		
Severe Storms and Flooding (Hurricane Hannah) - Sep Flood 2008	**1799**	**2008**	**Sep 6-7**	**$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	**Henniker did not apply for or receive FEMA Public Assistance funding.** for debris removal, protective measures, roads and bridges. Henniker likely sustained damage to culverts ditches and roads, resulting in road closures. No specific recollections of this event were available.	Tropical, Flood, Debris	FEMA, Henniker Hazard Mitigation Committee, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					reimbursement. Hillsborough County's damage was much higher at $6.90 per capita (400,721 people in 2010)			
Henniker Debris Impacted Infrastructure Every Heavy Rain 2008 – Present	No	2008 -	Present	N/A	N/A	Culverts on gravel roads, particularly Peasley Road, Butter Road, Liberty Hill Road, Colby Hill Road, Mount Hunger Road, and Craney Hill Road are most susceptible and typically clog with every heavy downpour.	River, Debris Impacted Infrastructure, Aging Infrastructure	Henniker Hazard Mitigation Committee 2008, CNHRPC
Henniker Debris Impacted Infrastructure Spring & Fall 2008 – Present	No	2008 -	Present	N/A	N/A	The historic Ramsdell Road Bridge over the Contoocook River collects debris twice per year, usually during the fall and spring. The bridge was rehabilitated in 2008 and remains in good condition.	River, Debris Impacted Infrastructure, Aging Infrastructure	Henniker Hazard Mitigation Committee 2008, CNHRPC, historicbridges.org
Henniker Erosion and Scouring from Contoocook River 2008 – Present	No	2008 -	Present	N/A	N/A, although the Contoocook River flows from Hillsborough through Henniker and into Hopkinton in the immediate vicinity of the Town.	Western Avenue on the Contoocook River and Gulf Road have been rebuilt and reinforced numerous times due to stream bank erosion.	River, Erosion and Scouring, Aging Infrastructure	Henniker Hazard Mitigation Committee, CNHRPC
Severe Winds, Heavy Rains & Tornado July 2008	**1782**	**2008**	**Jul 24**	**$0**	An EF3 tornado touched down in Rockingham County then proceeded into another county. Then in Merrimack County, the tornado was rated up to an F-3 and killed a woman in Deerfield trapped in a collapsed house. In the county, there was substantial damage totaled the equivalent of $1.12 per capita (146,455 people in 2010) for the towns' debris removal reimbursement costs. A total of 123 residences statewide were affected, with 17 destroyed and another 37 suffering major damage. Damage was estimated to exceed $10 million. Hillsborough County	**Henniker did not apply for or receive FEMA Public Assistance funding** for debris removal, protective measures, roads and bridges.	Wind, Tornado, Downburst, Storm, Debris, Power Outage	FEMA, Henniker Hazard Mitigation Committee, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Henniker Brownfields Site **Circa 2008**	No	2008	Circa	N/A	Arsenic can enter groundwater and unsuspecting apple pickers	A high level of arsenic is found in old apple orchard soil from older generations of pesticides. Testing is currently completed when the owners sell the property.	Public Health, Brownfields, Hazardous Materials, Water and Soil Quality	Henniker Hazard Mitigation Committee, CNHRPC
Henniker Identity Theft and Credit Card Fraud **Circa 2008**	No	2008	Circa	N/A	N/A, although these issues were not unique to Henniker. Other Central NH towns are experiencing similar problems	Identity theft and credit card fraud are frequent crimes which are reported to the Henniker Police Department.	Technological, Identity Theft, Fraud	Henniker Hazard Mitigation Committee, CNHRPC
Henniker Cyanobacteria Pond Advisories **Summer 2007**	No	2007	Summer	N/A	N/A	French and Keyser Ponds experienced high run off of phosphates and were contaminated by cyanobacteria. The ponds and beaches were closed to all uses. This event has also occurred in years past.	Public Health, Biological, Water Quality	Henniker Hazard Mitigation Committee, CNHRPC
Severe Storms and Flooding - Spring Flood **April 2007**	**1695**	**2007**	**Apr 15-23**	**$111,378**	Extensive flooding caused by severe storms impacted seven counties. In the Central NH region, Indirect peak discharge measurements on stream gages on the Suncook River at Short Falls Road in Epsom were 14,100 ft3, which was determined to be greater than 100-year flood discharge levels. The heavy rain combined with snow melt to cause small rivers and streams in much of New Hampshire to flood. Over land, the strong winds downed numerous trees. The downed trees caused widespread power outages, especially near the coast, and numerous road closures. The storm also brought heavy rain to the region which, when combined with snow melt, produced widespread flooding across much of the region.	**Henniker received $111,378 in FEMA Public Assistance funding** for roads & bridges, including Colby Crossing Road, Dudley Pond Road, Hemlock Corner Loop, and Western Avenue. In addition to the rainfall, downed trees exacerbated flooding conditions in many rivers and streams. High winds were also felt in the region with a peak wind of 45 mph with wind gusts of 60 to 80 mph. Strong winds late on April 15- 16 were reported to have downed many trees, branches, and power lines. Damage from the wind was magnified because of the heavy rain that accompanied the wind and the soft, wet ground caused by the spring thaw. Due to high winds and antecedent wet-ground conditions, many trees were reported to have had their entire root	Flood, Wind, Debris, Erosion, Aging Infrastructure	FEMA, USGS Flood of 2007, Henniker Hazard Mitigation Committee, CNHRPC, National Oceanic and Atmospheric Administration, 2007

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						systems lifted out of the ground.		
Regional Hopkinton Municipal Building Arson **Jan 2007**	No	2007	Jan 15	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 Hopkinton borders Henniker on the east and its emergency responders may have assisted the Town of Hopkinton with this event.	Fire (Arson), Human	Concord Monitor, CNHRPC
Henniker Cyanobacteria Pond Advisories **Summer 2006**	No	2006	Summer	N/A	N/A	French and Keyser Ponds experienced high run off of phosphates and were contaminated by cyanobacteria. The ponds and beaches were closed to all uses. This event has also occurred in years past.	Public Health, Biological, Water Quality	Henniker Hazard Mitigation Committee, CNHRPC
Severe Storms and Flooding – Mother's Day Flood **May 2006**	**1643**	**2006**	**May 12-23**	**$79,866**	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.	**Henniker received $$79,866 in FEMA Public Assistance funding** for roads and bridges, and protective measures, including culverts, ditches and road washouts. During the storm Henniker closed the following roads due to damage and flooding: Ray Road, Warner Road, Cross Road, Colleague Pond Road, Dodge Hill Road, Western Avenue, Liberty Hill Road, Colby Hill Road at Whitney Road, Whitney Road, River Road/College Hill Road. Limited access to Bear Hill Road, Depot Hill Road, Butter Road. A septic system washed out on Patterson Hill Road and damaged Western Avenue.	Flood, Wind, Storms, Debris, Erosion, Landslide, Aging Infrastructure	Henniker Hazard Mitigation Committee, FEMA, USGS, CNHRPC
Severe Storms and Flooding - Columbus Day Flood **Oct 2005**	**1610**	**2005**	**Oct 7-18**	**$27,550**	Extensive flooding caused by severe storms impacted five counties, including Merrimack and Hillsborough. Alstead experienced several fatalities as the result of dam failure.	**Henniker received $27,550 in FEMA Public Assistance funding** for roads and bridges and public utilities. Projects included repairing road washouts, repairing a waterline, and repairing a bridge washout.	Flood, Wind, Storms, Debris, Erosion, Landslide, Aging Infrastructure,	Henniker Hazard Mitigation Committee, FEMA, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					During October 7-18, 2005, the State of NH experienced two major rainfall events. According to USGS the bulk of rainfall occurred during two major rainfall events; one on October 8-9 and one on October 14-16. Rainfall volumes were generally higher in the event of October 8-9 in southwestern NH, leading to major flooding in that region.	In nearby Hillsboro to the west, high water levels measured at the discontinued USGS gage on Beards Brook reached 9.9 feet, 3.4 feet above the previous record set in 1959. The peak discharge was approximately 4,500 cubic feet per second, with a return interval of approximately 80 years.		
Regional Thunder-storms and Lightning Jun 2005	No	2005	12-Jun	N/A	During a thunderstorm, lightning struck and severely damaged the historic Loudon Town Hall on Clough Hill Road. Winds from severe thunderstorm knocked down trees and power lines down in the towns of Warner, Hopkinton, Concord, Bow, Loudon, and Webster in Merrimack County.	Henniker likely experienced many lightning strikes, power outages, and heavy downfalls. The lightning would have been especially noticeable from the higher elevations and the Craney Hill Fire Tower.	Thunderstorm, Lightning, Severe Winds	Henniker Hazard Mitigation Committee, CNHRPC, Area Hazard Mitigation Committees
Snow Emergency Jan 2005	**EM-3207**	**2005**	**Jan 22-23**	**$13,563**	Record and near record snowstorm for 8 NH counties including Merrimack and Hillsborough. Emergency protective measures declared for reimbursement.	**Henniker received $13,563 in FEMA Public Assistance funding** for snow removal. Record snows fell during this time period causing many closures. A transportation system shutdown occurred in Henniker, and Town emergency services were delayed.	Winter, Extreme Temp	Henniker Hazard Mitigation Committee, CNHRPC, FEMA
Henniker Mass Hysteria/ Civil Disturbance Mid 2000s	No	2000s	Mid	N/A	N/A	At a local hockey game at New England College, parents and teams reacted to an incident during the event. Multiple people were removed by the Police Department.	Human, Mass Hysteria, Civil Disturbance	Henniker Hazard Mitigation Committee, CNHRPC
Hopkinton Earthquake 2.3M Epicenter Aug 2004	No	2004	Aug 28	N/A	An earthquake measuring 2.3 on the Richter Scale was centered in the Hopkinton area at Hopkinton Lake (Hopkinton-Everett Reservoir) east of	Reports were likely made to the USGS by Henniker residents feeling the earthquake as a rumble or loud noise.	Earth, Earthquake	Earthquake Monitor, CNHRPC, earthquake.usgs.gov, Henniker Hazard

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					Stumpfield Road at a depth of 5.8km Shaking and noise were reported, but no damage occurred.	A Committee member reported a loud freight train noise and light house shaking.		Mitigation Committee
Henniker-Hopkinton Earthquake 2.2M Epicenter Jan 2004	No	2004	Jan 20	N/A	An earthquake measuring 2.3 on the Richter Scale was centered in the Henniker- Hopkinton town line on Line Hill Road at a depth of 3.6km.	The epicenter was in Henniker. Residents may have felt the earthquake as a rumble or heard a loud noise.	Earth, Earthquake	Concord Monitor, January 2004, Earthquake Monitor, CNHRPC, earthquake.usgs.gov
Henniker Arson Apr 2003	No	2004	Apr 8	N/A	N/A, although surrounding towns may have helped put out the fire	A 3-Alarm fire occurred at NH Concrete a tall 100x100 industrial building. Heavy fire with partial roof collapse	Fire, Arson, Human	CNHRPC, nh2meter.wixsite.otd-new-england-fire-april
Henniker Hazardous Materials Incident Circa 2004	No	2004	Circa	N/A	N/A	An oil truck on Flanders Road overturned, landing on the edge of a brook. No injuries were reported. There were no leaks, but responders had to pump the oil from the truck.	Hazardous Materials, Water Quality	Henniker Hazard Mitigation Committee, CNHRPC,
Snow Emergency Dec 2003	**EM-3193**	**2003**	**Dec 6-7**	**$16,832**	Record snow fall event impacting much of New England. In NH, 8 counties received emergency protective measures, including Merrimack and Hillsborough.	**Henniker received $16,832 in FEMA Public Assistance funding** for snow removal. Record snowfalls, residents lost power due to winter snow storm with high winds and falling trees. A transportation system shutdown occurred in Henniker, and Town emergency services were delayed.	Winter, Extreme Temp	Henniker Hazard Mitigation Committee, CNHRPC, FEMA
Snow Emergency Feb 2003	**EM-3177**	**2003**	**Feb 17-18**	**$11,732**	Record and near record snowstorm for 5 NH counties including Merrimack and Hillsborough. Emergency protective measures declared for reimbursement.	**Henniker received $11,732 in FEMA Public Assistance funding** for snow removal. Record or near record snowfalls, residents lost power due to winter snow storm with high winds and falling trees. A transportation system shutdown occurred in Henniker, and Town emergency services were delayed.	Winter, Extreme Temp	Henniker Hazard Mitigation Committee, CNHRPC, FEMA
NH Drought Emergency	No	2002	Aug	N/A	All counties in the State of NH except Coos	Henniker likely experienced loss of hay	Drought, Extreme	Henniker Hazard

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Aug 2002					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.	crops, tree farms, lowering of the Contoocook River and other brooks. Henniker dug wells ran dry at areas of high elevation. Residents filled water jugs at the Fire Department.	Temp, Earth, Increased Wildfire Risk	Mitigation Committee, CNHRPC Concord Monitor 8/20/02, NHDES
Snow Emergency Mar 2001	**EM-3166**	**2001**	**Mar 5-7**	**$13,069**	Record and near-record snowfall from late winter storm, emergency declaration was issued for protective measures. Merrimack, Hillsborough and 5 other counties declared eligible.	**Henniker received $13,069 in FEMA Public Assistance funding** for protective measures, including snow removal. Likely numerous power outages and blizzard-like conditions were experienced in Henniker.	Winter, Extreme Temp, Wind	Henniker Hazard Mitigation Committee, CNHRPC, FEMA
Henniker Radiological Waste Fall 2000	No	2000	Fall	N/A	N/A	Radioactive buttons found in metal container at Transfer Station. State DHHS assisted the Town in transferring these buttons to an approved disposal site out of state. This cost the Town several thousands of dollars	Hazardous Materials, Radiological	Henniker Hazard Mitigation Committee, CNHRPC
Regional Downbursts and Severe Winds Jul 1999	No	1999	6-Jul	N/A	Severe storms in July 1999 bring strong damaging winds and 3 downbursts. Two deaths occurred. The roof of the Ralph Pill building in Concord is blown off during a storm. The downburst was designated a macroburst (at least 2.5 miles in diameter). Other communities in the Central NH Region experienced damages	Henniker, with its high elevations, likely experienced similar conditions. No historical perspectives were available for the event.	Severe Wind, Downburst	Concord Monitor, NH HSEM, CNHRPC, Henniker Hazard Mitigation Committee
Concord Terrorism/ Bomb Threats Oct 1998	No	1998	Oct, Oct 27	N/A	On Oct 27, the lit fuse of a bomb left in the Concord Library stacks set off smoke alarms that may have saved the lives of many people. The individual allegedly responsible for the bomb scare left notes complaining about state government. A few days later, about a	N/A, although Concord is the employment and shopping hub of the Central NH Region. Should any terrorism event have impacted Concord, Henniker residents would have been impacted.	Terrorism	AP Online, 11/01/98, NH HSEM, CNHRPC

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					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.			
Severe Storms and Flooding Jun-Jul 1998	**1231**	**1998**	**Jun 12-Jul 2**	**$0**	Heavy flooding in six counties, including Merrimack and Hillsborough Counties. Damages of $3.4m for all counties.	**Henniker did not apply for or receive FEMA Public Assistance funding.** In Henniker, washouts are likely to have occurred. A beaver dam on Western Avenue released during a heavy rain event. The nearby guardrails became dislodged.	Flood, Wind, Debris, Aging Infrastructure	FEMA, CNHRPC, Henniker Hazard Mitigation Committee
Ice Storm of Jan 1998	**1199**	**1998**	**Jan 7-25**	**$0**	This ice storm was the first to test our statewide and local emergency management systems and utility providers. Tree and infrastructure damage was extensive and power failures lasted up to two weeks in some parts of the state. In The Central NH Region, many lost power for over a week. This ice storm had severe impacts throughout most of the State, with 52 communities impacted. FEMA Disaster Declaration #1199, Six injuries and one death resulted. Damage totaled $12,446,202. In addition, there were 20 major road closures, 67,586 people left without electricity, and 2,310 people without phone service.	**Henniker did not apply for or receive FEMA Public Assistance funding**. Power and water delivery was suspended for days. Access to houses for repair of utility poles and debris cleanup was quite difficult. The Fire Department opened as an emergency shelter. Regular safety patrols were common. Most of the damage was sustained in the upper elevations. All areas of Town, except for the Village, were shut down for two weeks and needed to have generators to sustain homes. Most businesses were interrupted during this ice storm.	Extreme Temp, Winter, Utility, Debris	FEMA, US Army Corps of Engineers NH Storms database, Henniker Hazard Mitigation Committee, CNHRPC
NH Mass Casualty/ Terrorism Aug 1997	No	1997	Aug	N/A	Five people were left dead after a series of shootings which began in Bow by a man who was angered over long simmering land disputes. The individual	N/A for Henniker specifically, but this tragedy occurred in the Central NH region.	Terrorism, Mass Casualty	NH HSEM, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					was eventually apprehended in Colebrook, NH.			
Severe Storms and Flooding **Oct 1996**	**1144**	**1996**	**Oct 20-23**	**$0**	Heavy rains caused flooding in six counties, including Merrimack and Hillsborough Counties. Damage totaled $2.3m for all counties.	**Henniker did not apply for or receive FEMA Public Assistance funding.** As Henniker is within Merrimack County, it is likely experienced heavy rains and possibly some flooding.	Flood, Storms	FEMA, NH HSEM, CNHRPC
Bradford Milfoil Infestation **Sum 1996**	No	1996	Summer	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 day, the Town of Bradford fights milfoil in its lakes.	Milfoil has not yet been reported in Henniker, but the plant ravels easily to new waters and easily establishes new colonies. Bradford borders Henniker to the northwest. The Town's public beaches and boat launches could become infested.	Public Health (Water Quality), Biological Hazard	Bradford Hazard Mitigation Committee, CNHRPC, Blaisdell Lake Property Owners Assn
Storms and Floods **Oct-Nov 1995**	**1077**	**1995**	**Oct 20-Nov 15**	**$0**	Four NH counties were damaged by excessive rain, high winds and flooding, including Merrimack (not Hillsborough).	**Henniker did not apply for or receive FEMA Public Assistance funding**. It is likely several gravel roads were washed out in Henniker.	Flood, Winds, Aging Infrastructure	FEMA, Federal Register, CNHRPC, Henniker Hazard Mitigation Committee
Newbury Terrorism/ Active Shooter **Nov 1993**	No	1993	Nov 1	N/A	A shooting at the Newbury Town Hall was ignited by tax and land disputes. Two town workers were killed, another was wounded, and the gunman shot and killed himself.	N/A for Henniker specifically, but this tragedy occurred nearby. Newbury is two towns north of Henniker. All NH communities were impacted by this terrible event.	Terrorism/ Violence, Mass Casualty, Active Shooter	NH HSEM, CNHRPC
Blizzard **Mar 1993**	**EM-3101**	**1993**	**Mar 13-17**	**$4,336**	Blizzards, High Winds and Record Snowfall. It is likely the Central NH Region experienced heavy snow, tree fall.	**Henniker received $4,336 in FEMA Public Assistance funding** for emergency snow plowing.	Winter, Extreme Temp, Wind	NH HSEM, CNHRPC, FEMA
Henniker Arson **May 1992**	No	1992	May 15	N/A	N/A, although surrounding towns may have helped put out the fire	A 3-Alarm fire occurred at New England College . An unoccupied apartment building sustained heavy damage. Seven towns fought this fire which was considered suspicious	Fire, Arson, Human	CNHRPC, nh2meter.wixsite.otd-new-england-fire-may

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Severe Storm-Hurricane Bob Aug 1991	**917**	**1991**	**Aug 18-20**	**N/A for Henniker**	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 Henniker is within Merrimack County, it likely experienced heavy rains, wind gusts, tree debris, power outages and possibly some flooding.	Severe Winds, Hurricane	FEMA, CNHRPC
Flooding and Severe Storm Aug 1990	**876**	**1990**	**Aug 7-11**	**No data available**	Moderate to heavy rains caused flooding in eight counties, including Merrimack and Hillsborough Counties. Damage totaled $2.3m for all counties	As Henniker is within Merrimack County, the Town likely experienced heavy rains, tree debris, power outages and possibly some flooding.	Flood, Severe Winds	FEMA, NH HSEM, CNHRPC
Henniker Civil Disturbance 1989	No	1989	--	N/A	N/A	A student protest at New England College occurred when the new Police Chief instigated a crackdown on delinquent activity.	Human, Civil Disturbance	Henniker Hazard Mitigation Committee, Town Historian 2008, CNHRPC
Henniker Bomb Threats and Arson Circa Late 1980s – Early 1990s	No	Late 1980s -	Early 1990s	N/A	N/A	There was a period when Henniker experienced some bomb threats at the local schools and at New England College on the covered bridge. There were also some arson situations and a number of dumpster fires set by students.	Terrorism, Bomb Threats, Human, Arson	Henniker Hazard Mitigation Committee, Town Historian 2008, CNHRPC
Severe Storms and Flooding Mar-Apr 1987	**789**	**1987**	**Mar 30-Apr 11**	**No data available**	Flooding caused by snowmelt and intense rain was felt in seven counties, including Merrimack and Hillsborough Counties. Nearly $5m in damages.	It is likely the flooding caused by snowmelt and intense rain was experienced in Henniker. Several roads may have been damaged as a result of the flooding and washout.	Flood, Debris, Extreme Temps	Henniker Hazard Mitigation Committee, CNHRPC FEMA, NH HSEM, US Army Corps of Engineers
Severe Storms and Flooding Jul-Aug 1986	**771**	**1986**	**Jul 29-Aug 10**	**N/A for Henniker**	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).	Henniker's gravel roads likely washout during these storms. Trees likely fall onto roads along with power lines.	Flood, Wind, Landslide, Erosion, Debris	FEMA, NH HSEM, CNHRPC, Henniker Hazard Mitigation Committee

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Henniker Lightning Strike Jul 1986	No	1986	Jul 6	N/A	N/A, although surrounding towns likely experienced similar lightning strikes	Congregational Church Steeple was struck by lightning.	Lightning, Structure Fire	Henniker Hazard Mitigation Committee, CNHRPC
Earthquake 4.5M Sanbornton Jan 1982	No	1982	Dec	N/A	An earthquake originating near in Sanbornton in Belknap County measured 4.5M and was felt in various locations throughout the State. The area it was felt includes all of northern Merrimack County including the Concord area communities in Central NH. The earthquake was known to have cracked the original glass panes in one Warner resident's home.	A Sanbornton-centered earthquake could have caused some light physical damage in Henniker. Sanbornton is about 25 miles to the northeast of Henniker.	Earth, Earthquake	CNHRPC, Earthquake-track.com,
Henniker Brownfields/ Hazardous Materials Site Circa 1980s	No	1980s	circa	N/A	N/A, although Western Avenue is situated along the Contoocook River which flows upstream through several towns into the Merrimack River	The West Henniker papermill site on Western Avenue was found to have contaminated soil due to dumping. Significant cleanup efforts have been undertaken to date.	Hazardous Materials, Brownfields	Henniker Hazard Mitigation Committee, CNHRPC
Henniker Building Collapse Circa Late 1970s – Early 1980s	No	Late 1970s-	1980s, circa	N/A	N/A	The Henniker Fire Department responded to Henniker High School, now the Elementary School, for falling ice which caused structural damage.	Winter, Snow, Building Collapse, Aging Infrastructure	Henniker Hazard Mitigation Committee, Town Historian 2008, CNHRPC
Henniker Building Fire Circa Late 1970s – Early 1980s	No	Late 1970s-	1980s, circa	N/A	N/A	An arson fire occurred in the apartment building on the corner of Hall and Fairview Avenues. The culprit was identified and the fire extinguished.	Fire, Structure Fire, Human, Arson	Henniker Hazard Mitigation Committee, Town Historian 2008, CNHRPC
NH Blizzard of Feb 1978	No	1978	Feb 5-7	N/A	RSI Index of Category 5 (Extreme). This snowstorm is described as "a natural disaster of major proportions" and stunned all of New England. The storm was caused by an intense coastal Nor'easter that produced winds in excess of hurricane	It is likely many of the same snow depths and effects occurred across Henniker as occurred in Merrimack County and New England. The entire Central NH Region was brought to a standstill.	Extreme Temperatures, Severe Snow Storms, Windchill, Power Failure	Henniker Hazard Mitigation Committee; American Meteorological Society, Northeast States Emergency Consortium, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					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.			
Quebec Earthquake 4.8M Jun 1973	No	1973	15-Jun	N/A	An earthquake originating near the Quebec border at a scale of 4.8 was felt in various locations throughout NH.	N/A, although some Henniker residents may have felt the effects.	Earth, Earthquake	Northeast States Emergency Consortium, CNHRPC
Severe Storms and Flooding Jul 1973	**399**	**1973**	**Jul 11**	**No data available**	All counties in the State of NH experienced storm damage and were declared disaster areas, including Merrimack and Hillsborough Counties.	Torrential downpours inundated the area, including Henniker which likely experienced road washouts.	Flood, Wind, Washout, Erosion	FEMA, CNHRPC, Henniker Hazard Mitigation Committee
Regional Earthquake Dec 1970	No	1970	Dec 25	N/A	The origin and magnitude are unknown but likely impacted the Central NH Region.	Some Henniker residents may have felt the earthquake effects.	Earth, Earthquake	CNHRPC, Earthquake-track.com, Henniker Hazard Mitigation Committee
Henniker EEE Deaths Late 1960s or Early 1970s	No	Late 1960s-	Early 1970s	N/A	N/A, although surrounding communities may have had mosquito problems too	At least two deaths attributed to equine encephalitis occurred in the late 60s or early 70s. (Deane Morrison and Mr. Williams).	Public Health, Biological	Henniker Hazard Mitigation Committee, Town Historian 2008, CNHRPC
Henniker Civil Disturbance Early 1970s	No	Early 1970s -	--	N/A	N/A	During the early 70s demonstrations related to the Vietnam War occurred on the Main Street of Henniker in front of the New England College's administration building. The Henniker Fire Department occupied the area between the	Human, Civil Disturbance	Henniker Hazard Mitigation Committee, Town Historian 2008, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
						crowd and the building with orders not to intervene in the event of violence but to extinguish any fires if they occurred.		
Older Hurricanes 1954-1991	No	1954	to 1991	N/A	Many older hurricanes have impacted New Hampshire including the 1954 – 1991 Hurricanes: Carol on August 31, 1954 (tree and crop damage), Edna on September 11, 1954, Donna on April 12, 1960 (heavy flooding), Dora on August 28, 1971, Bell on August 10, 1976, Gloria on September 27, 1985, and Bob in 1991.	Downed trees, wind damage, and flooding were likely experienced in Henniker during many of these hurricanes. 1960- Hurricane Donna impacted Henniker with heavy rain and some wind damage. 1954- Hurricane Carol, a category 2 storm, passed through the area resulting in heavy rain with increased wind. This resulted in extensive crop and tree damage.	Tropical, Wind, Flood, Debris	Henniker Hazard Mitigation Committee, NH Homeland Security and Emergency Management, CNHRPC
10 Severe Snowstorms 1940-1978	No	1940	to 1978	N/A	Ten severe snowstorms are documented in south-central NH during this time span, Feb 14-15, 1940 (depths over 30" and high winds), Feb 14-17, 1958 (20-33"), Mar 18-21, 1958 (22-24"), Mar 2-5, 1960 (up to 25"), Jan 18-20, 1961 (up to 25", blizzard conditions), Jan 11-14, 1964 (up to 12"), Jan 29-31, 1966 (up to 10"), Feb 22-28, 1969 (24-98", slow-moving storm), Dec 25-28, 1969 (12-18"), Jan 19-21, 1978 (up to 16").	Although it is unknown precisely what Henniker experienced, it is likely many of the same snow depths occurred, as well as debris on roads, difficulty traveling, crashes, and power outages.	Extreme Temp, Winter, Snow Storms, Utility, Power Outage, Debris Impacted Infrastructure	American Meteorological Society, CNHRPC
Regional Snow Storm and Rapid Snow Pack Melt Mar 1953	No	1953	Mar	N/A	Similar rain or snow storms and rapid snow pack melt likely impacted the Central NH region. The highest level of water in the Blackwater Dam was measured, with the capacity at 93%. No flooding was reported. Uncertain as to exactly what type of storm caused this effect. A total of nearly 8" of precipitation in March 1953.	The Hopkinton-Everett Flood Control Reservoir (1963) has not yet been constructed for this event. Contoocook River flooding was likely experienced	Flood, Debris	FEMA, NH HSEM, US Army Corps of Engineers, CNHRPC

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
Regional Earthquake Dec 1940	No	1940	Dec 20-24	N/A	The earthquake was reportedly felt in all of New Hampshire	The greatest earthquake felt in all of New Hampshire caused "a heavy rumble" and "was accompanied by the rattling of windows and the crashing of dishes" in Henniker.	Earth, Earthquake	CNHRPC, The Only Henniker on Earth
Regional & Henniker Hurricane of Sep 1938	No	1938	Sep 21	N/A	Hurricane made landfall as a 3 on the Saffir-Simpson Scale, killed about 682 people and damaged or destroyed over 57,000 homes. Most deadly New England hurricane. Central New Hampshire was inundated with water. This was also the worst hurricane to ever strike New England, resulting in 564 deaths and over 1,700 injuries (Northeast States Emergency Consortium). Downed trees caused extensive damage to homes, businesses and community infrastructure. President Roosevelt ordered emergency aid be sent to NH, including Merrimack County. Thirteen people died in New Hampshire.	Four days of heavy rain from the Gale of 1938 caused extensive flooding in West Henniker and the double-arched Proctor Bridge was washed away. Many roads were washed out and telephone and electricity was inoperable for many days. The bridge went out severing the downtown community. Except for the "Leatherboard Bridge" there would have been little way to go from east to west. As it was, a breeches buoy fashioned upriver from the village was employed for a period of time. There are lessons for the future embedded in the accounts of the 1938 hurricane in Henniker. While there are still living witnesses to this event we should document the actual events in Henniker.	Tropical, Wind, Hurricane, Flood, Debris	CNHRPC, USGS 1938 report, The Only Henniker on Earth by the Henniker History Committee 2008
Regional & Henniker Flood of Mar 1936	No	1936	Mar 11-21	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	An icy winter followed by heavy snow quickly turning to rain by March caused a massive flood which washed out roads, railroad tracks, and bridges. People traveled by boat and many families were evacuated to higher ground. Warner Road is said to have been washed out in a fashion similar to the more recent reoccurrence. An ice jam also occurred at the stone bridge. West	Flood, Ice Jam, Winter, Erosion, Scouring	Concord Monitor, Union Leader, Army Corps of Engineers Ice Jam Database, CNHRPC, USGS 1938 report, The Only Henniker on Earth by the Henniker History Committee;

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Henniker	Local Effects Occurring in Henniker	Hazard Category	Source
					the Winnipesaukee, Contoocook and Pemigewassett rivers that were largely responsible for the destruction in Concord and the surrounding area. NH issued boil water warnings to everyone.	Henniker was flooded because of an ice jam at the stone bridge said to have reached to the top of the stone railing.		Henniker Town Historian 2008
Henniker Downtown Conflagration June 1893	No	1893	Jun 20	N/A	N/A, although the fire was large enough to have the New York Times write an article	A devastating fire occurred on Main Street at Proctor Square (later renamed to Noyes Block when the block was rebuilt). The New York Times reported: Noyes's Block is on fire, and the hotel, shoe manufactory, and other buildings in the business section of the town are threatened. A steamer, hose carriage and a large force of men were dispatched from Concord on a special train. Many wooden buildings are in the locality of the fire, and the town is without adequate facilities for coping with an extensive blaze. (See photo)	Fire, Structure Fire, Public Safety	Henniker Historical Society, CNHRPC, The New York Times, New York, NY 21 Jun 1893
Henniker Lightning Strikes and Wildfires 1890- 2008	No	1890 - 2008		N/A	It is possible other communities surrounding Henniker either experienced the lightning strikes too or may have assisted with some of the larger fires.	A comprehensive list of fires in Henniker from the 1890s to present day is included in **APPENDIX E Photographic History and Historic Fire Data**.	Lightning, Wildfire	Henniker Fire Department 2008, CNHRPC
Merrimack County Earthquake Nov 1884	No	1884	Nov 23	N/A	The earthquake was reportedly felt in Merrimack County	Two moderate earthquakes shook the Merrimack County area and displaced a boiler foundation in the Town of Henniker. The earthquake was felt in an area of 14,000 square miles.	Earth, Earthquake	CNHRPC, NH Department of Safety

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

Description and Magnitude of Hazards

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

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

Hazard events were researched using a wide variety of sources for the **original Henniker Hazard Mitigation Plan 2008** and the **2014 Plan Update** which were the basis for many of the past disaster events and then were updated to the present day. The **2014 Plan** provided recent information on many of the extreme disasters experienced between **2005-2008**. Sources and techniques included interviewing local townspeople, researching Town Histories and related documents, and collecting information from governmental or non-profit websites. Presidentially declared disasters or other significant hazard events are described for the surrounding area or Merrimack County for the **Hazard Mitigation Plan Update 2019** and some of them may have affected the community. These disasters were also considered by the Committee when determining the risk evaluation.

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

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

EARTH HAZARDS

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

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

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

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

Drought

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
DROUGHT	**4** **HIGH**	1 LOW	2 MEDIUM	2 MEDIUM	**6.7** **MEDIUM**

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

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

Magnitude of Drought

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

Table 13

US Drought Monitor Intensity Scale

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

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

Earthquake

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

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

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

Magnitude of Earthquake

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

Table 14

Modified Mercalli and Richter Magnitude Scales

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

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

Source: National Oceanic and Atmospheric Administration (NOAA), USGS and other sources compiled by CNHRPC Feb 2019

Landslide

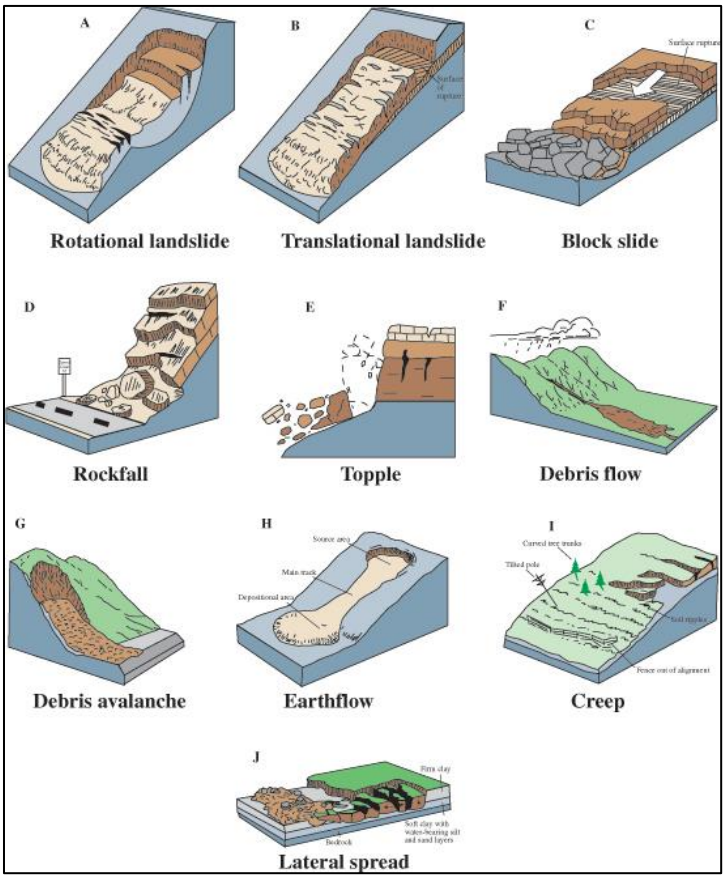
The overall ratings of **Landslide** in Henniker from the **HIRA** are:

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

A landslide is the downward or outward movement of slope-forming materials reacting under the force of gravity including: mudflows, mudslides, debris flows, rockslides, debris avalanches, debris slides, and earth flows. Erosion of soil may also contribute to landslides. **Landslides** have damaged or destroyed roads (NH 9/ 202 ramps), electrical and telephone lines, buildings, sewers, bridges, dams, forests, parks, and farms. A display of different types of landslides is shown in **Figure 6**.

Figure 6

Basic Types of Landslides



Source: US Geological Survey (USGS)

Magnitude of Landslide

There is no known standardized measurement of landslide magnitude available.

EXTREME TEMPERATURE HAZARDS

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

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

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

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

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
EXTREME TEMPERATURES **Excessive Heat, Heat Wave, or Cold or Wind Chill**	**4** **HIGH**	3 HIGH	3 HIGH	3 HIGH	**12.0** **HIGH**

Excessive Heat or Heatwave

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

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

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

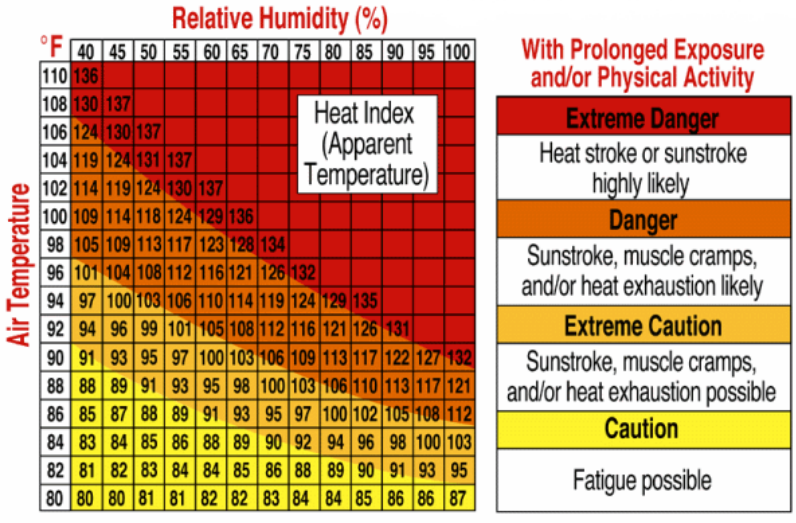
✦ **Excessive Heat Watch** BE PREPARED	A Heat Watch is issued when conditions are favorable for an excessive heat event in the next **24** to **72** hours. A Watch is used when the risk of a heat wave has increased but its occurrence and timing is still uncertain.
✦ **Excessive Heat Warning** BE AWARE	An Excessive Heat Warning is issued within **12** hours of the onset of extremely dangerous heat conditions. The general rule of thumb for this Warning is when the maximum heat index temperature is expected to be **105°** or higher for at least **2** days and night time air temperatures will not drop below **75°**; however, these criteria vary across the country, especially for areas not used to extreme heat conditions. If you don't take precautions immediately when conditions are extreme, you may become seriously ill or even die.
✦ **Heat Advisory** TAKE ACTION	A Heat Advisory is issued within **12** hours of the onset of extremely dangerous heat conditions. The general rule of thumb for this Advisory is when the maximum heat index temperature is expected to be **100°** or higher for at least 2 days, and night time air temperatures will not drop below **75°**; however, these criteria vary across the country, especially for areas that are not used to dangerous heat conditions. Take precautions to avoid heat illness. If you don't take precautions, you may become seriously ill or even die

Magnitude of Excessive Heat of Heat Wave

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

Figure 7

Heat Index (Temperature and Humidity)



Source: weather.gov

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

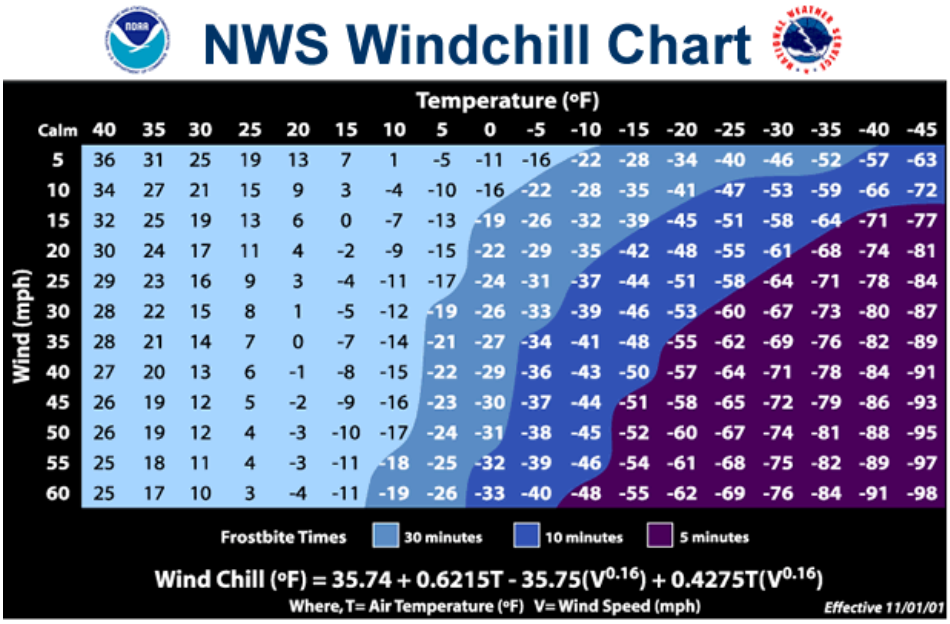
Cold or Wind Chill

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

Magnitude of Extreme Cold or Wind Chill

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

Figure 8
Windchill Temperature (WCT) Index



Source: National Weather Service

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

✦ **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 Advisory** BE AWARE	NWS issues a wind chill advisory when seasonably cold wind chill values but not extremely cold values are expected or 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 Warning** TAKE ACTION	NWS issues a wind chill warning when dangerously cold wind chill values are expected or 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.

Craney Hill Fire Tower

Image accessed online via Concord Monitor, Oct 2018

FIRE HAZARDS

Fire can be caused by several agents and can spread rapidly to consume property and endanger lives. This **2019 Plan** examines **lightning**, and **wildfire** (natural) fire sources and places other **fires (vehicles, structure, arson, explosions**) with **Technological Hazards**.

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

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

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

Wildfire

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
WILDFIRE **Brushfire, Outdoor Fires or Accidental**	**4** **HIGH**	3 HIGH	2 MEDIUM	2 MEDIUM	**9.3** **HIGH**

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

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

Magnitude of Wildfire

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

Table 15
National Wildfire Coordinating Group Wildfire Classification Scale

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

Source: National Wildfire Coordinating Group

The New Hampshire Department of Natural and Cultural Resources Division (NHDNCR) of Forest and Lands (DFL) helps to promote daily fire danger ratings which community members can readily understand. The Fire Department is able to post the information in a prominent location. The **fire danger ratings** are as follows:

✦ **Low** **GREEN**	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.
✦ **Moderate** **BLUE**	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.
✦ **High** **YELLOW**	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.
✦ **Very High** **ORANGE**	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.
✦ **Extreme** **RED**	Fires will start and spread rapidly. Every fire start has the potential to become large. Expect extreme, erratic fire behavior. NO OUTDOOR BURNING SHOULD TAKE PLACE IN AREAS WITH EXTREME FIRE DANGER.

Lightning

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
LIGHTNING	**4 HIGH**	4 HIGH	3 HIGH	2 MEDIUM	**12.0 HIGH**

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

Magnitude of Lightning

Lightning can be measured to determine how likely it may be for starting fires. Using a Level system of **1** to **6** corresponding with storm development and the number of lightning strikes, the Lightning Activity Level (LAL) measures the magnitude of lightning strikes as displayed in **Table 16**.

Table 16
Lightning Activity Level (LAL)

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

Source: National Weather Service

FLOOD HAZARDS

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

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

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

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

Main Hazard Category	Specific Hazards Included	
FLOOD	INLAND FLOODING Rains, Snow Melt, or Flash Floods	RIVER HAZARDS Ice Jams, Scouring, Erosion, Channel Movement or Debris

Inland Flooding

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
INLAND FLOODING **Rains, Snow Melt or Flash Floods**	**4** **HIGH**	2 MEDIUM	4 HIGH	2 MEDIUM	**10.7** **HIGH**

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

Magnitude of Inland Flooding

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

Special Flood Hazard Areas (SFHAs)

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

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

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

Special Flood Hazard Areas on Henniker DFIRMs	
Zone A	**1% annual chance of flooding** • **100-year** floodplains *without* Base Flood Elevations (BFE)
Zone AE *(with or without floodways)*	**1% annual chance of flooding** • **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	**0.2% annual chance of flooding** • **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

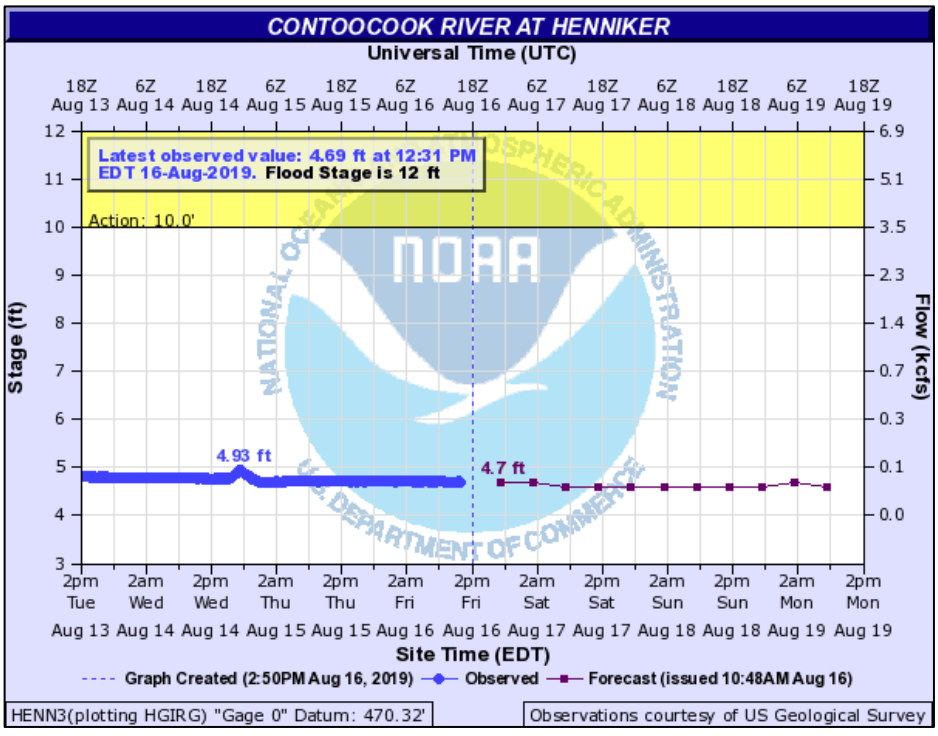
Henniker DFIRMs can be viewed online at and downloaded from the NH Geographically Referenced Analysis and Transfer System (NH GRANIT) website. Alternatively, the DFIRMs' respective paper FEMA 2009 Floodplain Maps in the Town Office could be consulted. Should the **Zone A** or **Zone X** or **Zone AE**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

Contoocook River Gage at Henniker

The US Geological Survey (USGS) operates **river monitoring gages** along many Central NH region rivers, including the gage closest to Henniker, **USGS 01085000** at the **Contoocook River** on Western Avenue, just west of Cote Hill Road. The gage measures River's flow from Hillsborough entering the Henniker as it travels through Downtown and into the Hopkinton Everett Flood Control Reservoir. River gages are essential for measuring flooding conditions in the Central NH Region. Dynamic river gages measure water height and discharge over time for the purposes of flood control and upload information in real time to the USGS, enabling easily accessible public information about potential flooding conditions at the gage location. Hydrographs on the US Geological Survey (USGS) National Water Information System (NWIS) website display either the height of the water in feet or the discharge value in cubic feet per second in separate graphs and are a cooperative venture with the National Weather Service (NWS) and US Army Corps of Engineers. River monitoring gage station options **measure the magnitude of river flooding during monitored times**. Figure 9 displays the **Contoocook River** at Henniker (Western Avenue) gage snapshot for **August 2019**, as reminder of this emergency management tool that continually measures potential flooding conditions.

Figure 9

NOAA/NWS Contoocook River near Henniker Gage Hydrograph, Aug 2019



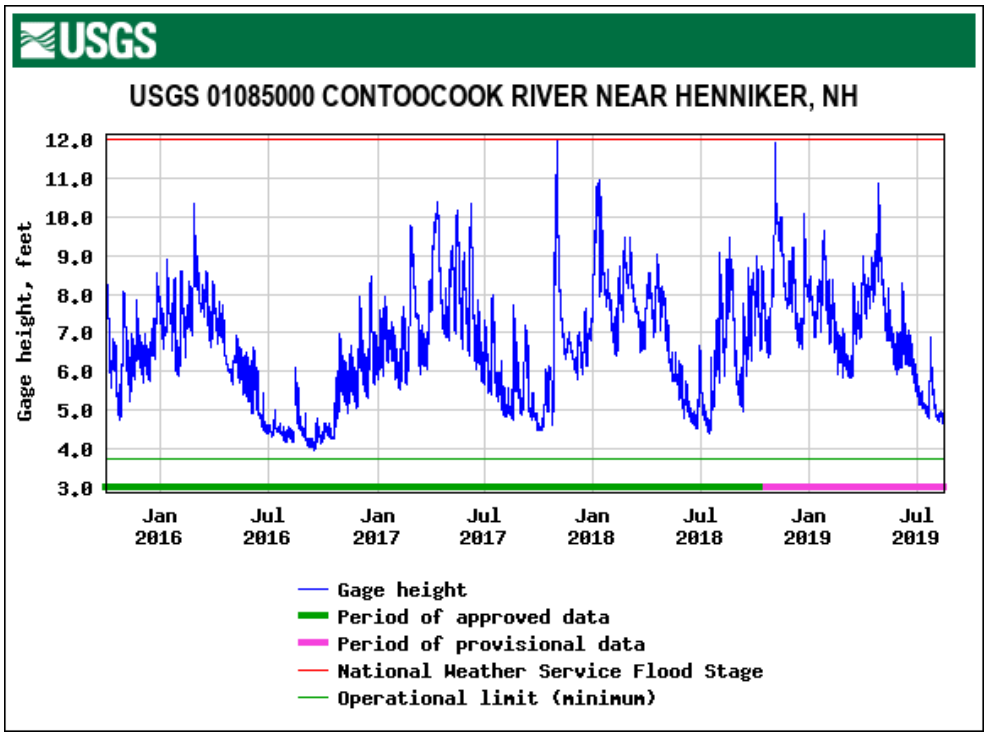
Source: https://www.weather.gov/nerfc/henn3, accessed 08-19

During the sample time period of **Aug 2019**, the NWS graph in **Figure 9** displays the height of the **Contoocook River** as compared to flood stages. The **10.0' Action Stage** is when local officials would get ready to take action for a flooding event. The **12.0' Minor Flood Stage** will have minor flooding (minimal or no property damage but possibly public threat such as road washout), while the **16.0' Moderate Stage** (inundation of structures and roads near streams, evacuations) and **20.0' Major Stage** (extensive inundation of structures and roads, significant evacuations) will require immediate and significant action by the Town. These **Flood Stages** are another form of **Inland Flooding** magnitude, as pertaining to the **Contoocook River** near Henniker (Western Avenue at Cote Hill Road) gage location.

Shown in **Figure 10** is a historical record of changes at the **Contoocook River** Gage between **January 2016** and **August 2019**. The highest level the water has reached during this time was about **12.0'** (**Minor Flood Stage**) in **October 2017** and **November 2018**, both significant storm events.

Figure 10

USGS Contoocook River near Henniker Gage Hydrograph #01085000, Aug 2019



Source: https://waterdata.usgs.gov/nwis/uv?site_no=01085000, last accessed 08-16-19

Rapid Snow Pack Melt

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

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

Magnitude of Rapid Snow Pack Melt

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

River Hazards

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

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

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

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

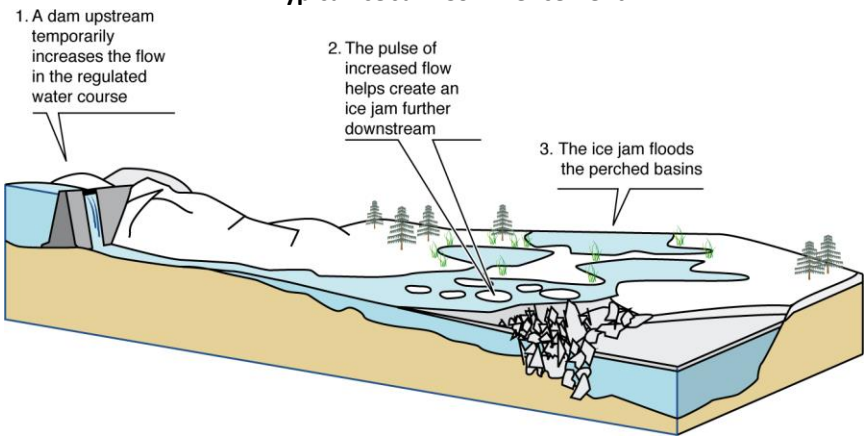
Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
RIVER HAZARDS **Ice Jams, Scouring, Erosion, Channel Movement or Debris**	**4** **HIGH**	1 LOW	3 HIGH	2 MEDIUM	**8.0** **HIGH**

River Ice Jams

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

Figure 11

Typical Ice Jam Commencement



Source: USGS, Internet Accessed May 2014

Magnitude of River Ice Jams

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

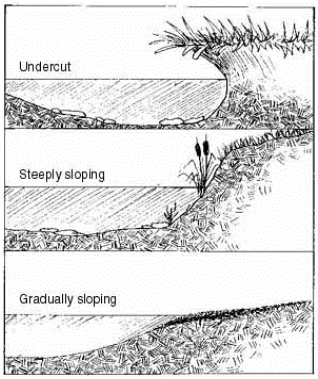
The US Army Corps of Engineers (ACOE) maintains the Ice Jam Database, Bulletins & Surveys website which locates where ice jams are presently occurring and where they have occurred in the past. Reports can be generated in various formats so emergency responders can identify the locations of prior ice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

Fluvial Erosion, Bed Scouring and Channel Movement

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

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

Figure 12
Bank Erosion Characteristics

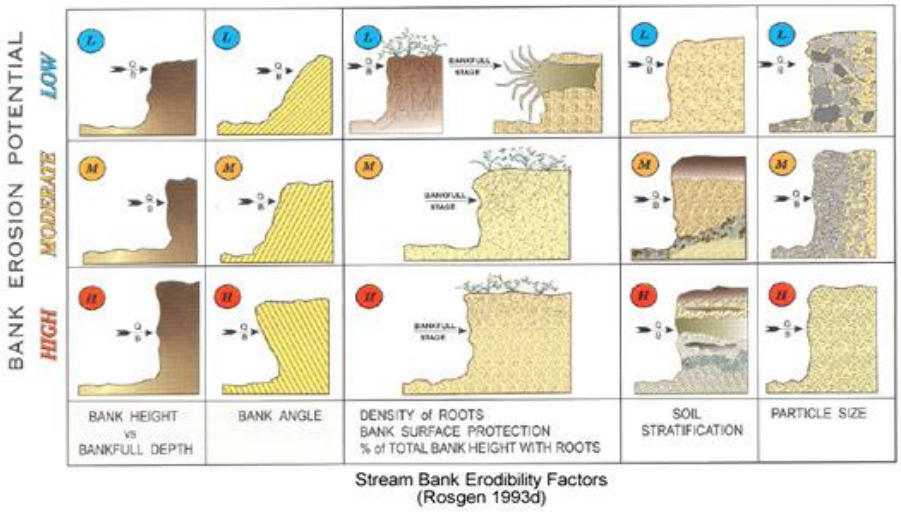


Source: US Geological Survey (USGS)

Magnitude of (Fluvial) River Bank Erosion

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

Figure 13
Bank Erosion Prediction Index (BEHI)



Source: US Environmental Protection Agency (US EPA)

PUBLIC HEALTH HAZARDS

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

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

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

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

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

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

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

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

Influenza

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

Arboviral

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

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

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

Tick-borne

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

Air and Water Quality

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

Water quality hazards such as radon, arsenic, uranium Per- and polyfluoroalkyl substances (PFAS) industrial chemicals, cyanobacteria, coliform bacteria, lead and copper in public water systems, are constantly being tested for and when found, monitored. Once these enter the groundwater (aquifers) system, they are extremely difficult to mitigate. The Climate Change Resilience Plan 2014 describes the NHDES efforts understand how damage to infrastructure from natural hazards such as **Inland Flooding** and spring **snow melt** runoff can occur to create more resilient water systems.

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

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

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
PUBLIC HEALTH Infectious Diseases, Air & Water Quality, Biological, Addiction, Arboviral, or Tick-borne	**4 HIGH**	4 HIGH	2 MEDIUM	2 MEDIUM	**10.7 HIGH**

Magnitude of Public Health

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

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

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

SOLAR STORMS HAZARDS

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

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

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

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

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
SOLAR STORMS AND SPACE WEATHER **Solar Winds, Geomagnetic Storms (Aurora Borealis), Solar Radiation or Radio Blackout**	**2** **MEDIUM**	1 LOW	2 MEDIUM	2 MEDIUM	**3.3** **LOW**

Magnitude of Solar Storms

Many in residents in the Central NH region enjoy the aurora borealis viewed from Mount Kearsarge, visible to Henniker, although when this phenomenon occurs a geomagnetic storm is reaching New Hampshire. Emergency response personnel could monitor these storms from the Craney Hill Tower. NOAA's Space Weather Prediction Service https://www.swpc.noaa.gov/ provides 3-day outlooks on solar storms. Magnitude scales for **Radio Blackout (R)**, **Geomagnetic Storms (G)** and **Solar Radiation Storms (S)** are provided in **Table 18**.

Table 18

Solar Storms Magnitude Scales

Magnitude Scale	Description	Effect of Space Storm	Average Frequency (1 cycle = 11 years)
GEOMAGNETIC STORM (G)			
G1 Geomagnetic	**Minor**	✦ Power systems: Weak power grid fluctuations can occur. ✦ Spacecraft operations: Minor impact on satellite operations possible. ✦ Other systems: Migratory animals are affected at this and higher levels; aurora is commonly visible at high latitudes (northern Michigan and Maine).	1700 per cycle (900 days per cycle)
G2 Geomagnetic	**Moderate**	✦ Power systems: High-latitude power systems may experience voltage alarms, long-duration storms may cause transformer damage. ✦ Spacecraft operations: Corrective actions to orientation may be required by ground control; possible changes in drag affect orbit predictions. ✦ Other systems: HF radio propagation can fade at higher latitudes, and aurora has been seen as low as New York and Idaho (typically 55° geomagnetic lat.).	600 per cycle (360 days per cycle)
G3 Geomagnetic	**Strong**	✦ Power systems: Voltage corrections may be required, false alarms triggered on some protection devices. ✦ Spacecraft operations: Surface charging may occur on satellite components, drag may increase on low-Earth-orbit satellites, and corrections may be needed for orientation problems. ✦ Other systems: Intermittent satellite navigation and low-frequency radio navigation problems may occur, HF radio may be intermittent, and aurora has been seen as low as Illinois and Oregon (typically 50° geomagnetic lat.).	200 per cycle (130 days per cycle)
G4 Geomagnetic	**Severe**	✦ Power systems: Possible widespread voltage control problems and some protective systems will mistakenly trip out key assets from the grid. ✦ Spacecraft operations: May experience surface charging and tracking problems, corrections may be needed for orientation problems. ✦ Other systems: Induced pipeline currents affect preventive measures, HF radio propagation sporadic, satellite navigation degraded for hours, low-frequency radio navigation disrupted, and aurora has been seen as low as Alabama and northern California (typically 45° geomagnetic lat.).	100 per cycle (60 days per cycle)
G5 Geomagnetic	**Extreme**	✦ Power systems: Widespread voltage control problems and protective system problems can occur, some grid systems may experience complete collapse or blackouts. Transformers may experience damage. ✦ Spacecraft operations: May experience extensive surface charging, problems with orientation, uplink/downlink and tracking satellites. ✦ Other systems: Pipeline currents can reach hundreds of amps, HF (high frequency) radio propagation may be impossible in many areas for one to two days, satellite navigation may be degraded for days, low-frequency radio navigation can be out for hours, and aurora has been seen as low as Florida and southern Texas (typically 40° geomagnetic lat.).	4 per cycle (4 days per cycle)
SOLAR RADIATION (S)			
S1 Solar Radiation	**Minor**	✦ Biological: None. ✦Satellite operations: None. ✦Other systems: Minor impacts on HF radio in the polar regions.	50 per cycle
S2 Solar Radiation	**Moderate**	✦ 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	**Strong**	✦ Biological: Radiation hazard avoidance recommended for astronauts on EVA; passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk.	10 per cycle

Magnitude Scale	Description	Effect of Space Storm	Average Frequency (1 cycle = 11 years)
Solar Radiation		✦ Satellite operations: Single-event upsets, noise in imaging systems, and slight reduction of efficiency in solar panel are likely. ✦ Other systems: Degraded HF radio propagation through the polar regions and navigation position errors likely.	
S4 Solar Radiation	**Severe**	✦ 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**	✦ Biological: Unavoidable high radiation hazard to astronauts on EVA (extra-vehicular activity); passengers and crew in high-flying aircraft at high latitudes may be exposed to radiation risk. ✦ Satellite operations: Satellites may be rendered useless, memory impacts can cause loss of control, may cause serious noise in image data, star-trackers may be unable to locate sources; permanent damage to solar panels possible. ✦ Other systems: Complete blackout of HF (high frequency) communications possible through the polar regions, and position errors make navigation operations extremely difficult.	Fewer than 1 per cycle
RADIO BLACKOUT (R)			
R1 Radio Blackouts	**Minor**	✦ HF Radio: Complete HF (high frequency) radio blackout on the entire sunlit side of the Earth lasting for a number of hours. This results in no HF radio contact with mariners and en route aviators in this sector. ✦ Navigation: Low-frequency navigation signals used by maritime and general aviation systems experience outages on the sunlit side of the Earth for many hours, causing loss in positioning. Increased satellite navigation errors in positioning for several hours on the sunlit side of Earth, which may spread into the night side.	2000 per cycle (950 days per cycle)
R2 Radio Blackouts	**Moderate**	✦ 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**	✦ 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**	✦ 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**	✦ HF Radio: Complete HF (high frequency) radio blackout on the entire sunlit side of the Earth lasting for a number of hours. This results in no HF radio contact with mariners and en route aviators in this sector. ✦ Navigation: Low-frequency navigation signals used by maritime and general aviation systems experience outages on the sunlit side of the Earth for many hours, causing loss in positioning. Increased satellite navigation errors in positioning for several hours on the sunlit side of Earth, which may spread into the night side.	Less than 1 per cycle

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

WIND HAZARDS

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

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

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

High Wind Events

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

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
HIGH WIND EVENTS **Wind, Thunderstorms, Hail, Downbursts, Tornadoes or Debris**	**4** **HIGH**	4 HIGH	4 HIGH	3 HIGH	**14.7** **HIGH**

Severe Wind, Rainstorms and Thunder Storms

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

Magnitude of Severe Wind and Thunder Storms

Many of the severe wind storms Henniker experiences are not hurricanes but are severe wind storms or thunderstorms. Thunderstorms are common in New Hampshire, particularly during the hot weather months. The Thunderstorm Category Criteria scale in **Table 19** measures the magnitude of thunderstorms with their various weather components, including rain, wind, hail, tornado, and lightning.

Table 19

Thunderstorm Criteria Scale

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

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

Incidentally, hail can accompany thunderstorms, hurricanes, or severe wind events. The **Hail Size Descriptions** in **Table 20** describes the potential size of hail during a hurricane or severe storm event, which could occur anywhere in Henniker. The Table is shown below along with a **Hail Size Comparison Chart** which is a visual representation of some of the relative sizes of hail (note this chart image is not shown to scale). The **Table 20** hail size description and **Figure 14** size comparison scales measure the magnitude of hailstones that could fall on Henniker during severe storm events.

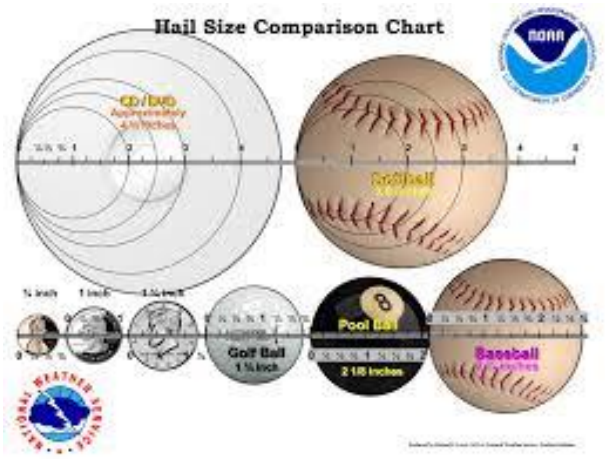
Table 20

Hail Size Description

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

Figure 14

Visual Hail Size Comparison



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

Tornadoes

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

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

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

Magnitude of Tornadoes

A tornado occurring in Henniker would cause considerable damage. Roofs could be torn off frame houses; dams could be damaged; large trees snapped or uprooted; and light object missiles would be generated by an EF-2 Tornado. Tornado magnitude is measured by the Enhanced Fujita (EF) Scale, a 2007 update from the original F-scale (Fujita Scale), which are provided in **Table 21**.

Table 21
Enhanced Fujita (EF) Scale

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

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

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

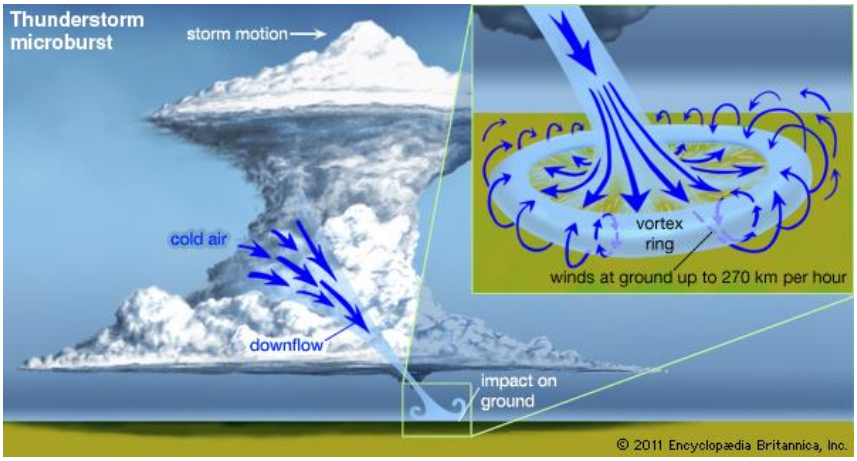
Downbursts

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

Downbursts of both sizes can produce strong wind shear, large changes in wind speed and direction over a short distance. Trees are regularly snapped off in a singular direction by a macroburst or microburst. Downbursts typically originate from thunderstorm clouds, with air moving in a downward motion until it hits the ground level and then spreads outward in all directions. In fact, the wind pattern of a downburst is the opposite of a tornado's wind pattern, shown in **Figure 15**.

Figure 15

Microburst Forming from Thunderstorm Clouds



Source: Internet (Encyclopedia Brittanica)

Magnitude of Downbursts

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

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

Debris Impacted Infrastructure

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

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

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

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

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

Magnitude of Debris Impacted Infrastructure

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

Tropical and Post-Tropical Cyclones

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

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
TROPICAL AND POST-TROPICAL CYCLONES Hurricanes, Tropical Storms or Tree Debris	**4 HIGH**	3 HIGH	2 MEDIUM	2 MEDIUM	**9.3 HIGH**

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 Henniker just like any other community in Central New Hampshire. Forested lands and trees along the transportation infrastructure can be blown down across roads; the above-ground powerlines along the sides of the road can be snapped either by trees or high winds and fall onto the roads or nearby objects; and runoff flooding and stream/brook and river flooding can occur because of hurricanes and severe storms.

Magnitude of Hurricanes and Tropical Storms

The Saffir-Simpson Hurricane Wind Scale **measures the magnitude of wind event** on a **1** through **5** rating basis. The definitions of Category **1** through **5**'s sustained wind miles per hour and their respective threats to people, different types of homes, shopping centers, trees, power lines, water, and more are displayed in **Table 22**.

Table 22

Saffir-Simpson Hurricane Wind Scale

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph	**Very dangerous winds will produce some damage:** Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph	**Extremely dangerous winds will cause extensive damage:** Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 *major*	111-129 mph	**Devastating damage will occur:** Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 *major*	130-156 mph	**Catastrophic damage will occur:** Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 *major*	157 mph or higher	**Catastrophic damage will occur:** A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Source: National Oceanic and Atmospheric Administration (NOAA)

WINTER HAZARDS

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

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

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

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
SEVERE WINTER WEATHER **Snow, Ice, Blizzard or Nor'Easter**	**4** **HIGH**	4 HIGH	3 HIGH	4 HIGH	**14.7** **HIGH**

Severe Winter Storms

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

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

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

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

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

Recent Severe Winter Weather in New Hampshire

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

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

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

Magnitude of Severe Winter Weather

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

Table 23 displays the Sperry-Piltz Ice Accumulation Index (SPIA) which measure the magnitude of ice damage from severe winter weather. The index is compared to the tornado and hurricane scales note above. Storm total rainfall converted to ice accumulation, wind, and temperatures during the storm period are used to develop SPIA.

Table 23

Sperry-Piltz Ice Accumulation Index (SPIA)

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

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

The Regional Snowfall Index (RSI) for the Northeast is used to categorize significant snowstorms. The RSI ranks snowstorm effects on a scale from **1** to **5**, similar to the Enhanced Fujita Scale for tornadoes or the Saffir-Simpson Hurricane Wind Scale for hurricanes. The RSI differs from these other indices because it includes population, a social component. The RSI is based on the spatial extent of the storm, the amount of snowfall, and the juxtaposition of these elements with population. The Regional Snowfall Index (RSI) displayed in **Table 24** is a measurement of the magnitude of a snowstorm in the Northeast, which includes New Hampshire.

Table 24
Regional Snowfall Index (RSI) for the Northeast

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

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

Avalanches

An avalanche is a sudden downhill movement of large mass of snow, ice, earth, rock, or other material from steep hills and mountains. It is a significant hazard to people recreating on mountains. This "slab" avalanche is the most dangerous form of movement and slides as a unit on the snow underneath. An avalanche can be caused by:

- heavy snowfall
- deforestation making the slope less stable (such as new ski runs)
- steep slopes, as this helps to increase the speed of movement
- vibrations from an earthquake, noise or snowmobiles
- human activity (winter sports)
- layering of snow on top of ice
- wind direction depositing snow from upwind of obstacles to the downwind (lee sides)
- warm air temperatures (wet avalanche)

Almost all avalanches occur on slopes between 35 and 45 degrees. Slopes less than 30 degrees seldom produce avalanches and slopes steeper than about 50 degrees "sluff" so often, they tend not to build up into slabs. The intermediate slope steepness that produces most of the avalanches are the slopes people like to ski, snowboard or snowmobile. An expert or "black diamond" slope at a ski resort is usually > 35 degrees--prime steepness for producing avalanches. In the majority of avalanche incidents, the victim or someone in their party triggers the avalanche.

Dry slab avalanches typically travel 60-80 miles per hour with a dust cloud. They reach these speeds within about 5 seconds after they fracture. Wet avalanches usually travel much slower, around 10-40 miles per hour, and are usually caused by warm temperatures. More information on avalanches can be found at avalanche.org and web tutorials can be found at the Utah Avalanche Center.

In New Hampshire, ski locations such as Mount Washington, Canon Mountain, Mount Sunapee and Pat's Peak offer popular winter recreation traditions and bring in essential tourism dollars from out of state. Small avalanches on these high elevation points are possible. When they occur, such as those on Mount Washington, the effect can be devastating, with **6** reported fatalities since **2000**. Avalanches are a

common occurrence in high terrain areas in the State during the winter and spring months. Ski personnel are trained to observe the warning signs and they work to close potential impacted trails to reduce the likelihood of injury. Search and rescue operations occur regularly in the White Mountains for skiers. As more people travel to local ski resorts and the warming climate conditions melt the snow on the mountains, the likelihood of future avalanche events involving people increases.

The overall ratings of **Avalanche** in Henniker from the **HIRA** are:

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
AVALANCHE	**1 LOW**	1 LOW	1 LOW	1 LOW	**1.0 LOW**

Magnitude of Avalanches

Avalanche danger is determined by the likelihood, size and distribution of avalanches. The North American Public Avalanche Danger Scale is the standardized magnitude system used to identify the danger levels and potential effects. If an avalanche occurs anywhere in Henniker, it would most likely occur on Pat's Peak. This rating scale is provided in **Table 25.**

Table 25

North American Public Avalanche Danger Scale

Danger Level	Symbol	Travel Advice	Likelihood of Avalanches	Avalanche Size and Distribution
No Rating		Issued when areas of unstable snow may exist buy are isolated within the forecast areas. Natural and human-triggered avalanche activity may occur. Make your own snow stability assessments and terrain choices.		
[1] Low		Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.	Natural and human-triggered avalanches unlikely.	Small avalanches in isolated areas or in extreme terrain.
[2] Moderate		Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.	Natural avalanches unlikely; human-triggered avalanches possible.	Small avalanches in specific areas; or large avalanches in isolated areas.
[3] Considerable		Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding, and conservative decision-making essential.	Natural avalanches possible; human-triggered avalanches likely.	Small avalanches in many areas; or large avalanches in specific areas; or very large avalanches in isolated areas.
[4] High		Very dangerous avalanche conditions. Travel in avalanche terrain is not recommended.	Natural avalanches likely; human-triggered avalanches very likely.	Large avalanches in many areas; or very large avalanches in specific areas.
[5] Extreme		Avoid all avalanche terrain.	Natural and human-triggered avalanches certain.	Large to very large avalanches in many areas.

Source: Avalanche.org & Mount Shasta (CA) Avalanche Center, adapted by CNHRPC

TECHNOLOGICAL HAZARDS

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

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

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

Magnitude of Technological Events

The magnitudes of technological hazards are not addressed in this Plan. **Dam Breach, Release or Failure** has a close relationship with **Flooding**, uses the NH DES Dam Hazard Classification categories, and has therefore been rated along with the natural hazards. Other technological events could have rating systems within their sphere of influence, but these are outside the scope of this **Hazard Mitigation Plan**. More information is provided for reference as needed for some of these technological hazards.

Dam Failure

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

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

Natural, Technological, Human Hazard Categories	Probability of Occurrence in 10 Years (1-4)	Human Injury Impact (1-4)	Essential Services or Infrastructure Impact (1-4)	Property Damage or Economic Impact (1-4)	OVERALL RISK (1-16)
DAM FAILURE Water Overtop, Breach, Beaver, etc.	**3 HIGH**	2 MEDIUM	4 HIGH	3 HIGH	**9.0 HIGH**

Magnitude of Dam Failures

Although dam failure is considered a **Technological Hazard**, it is often a secondary hazard caused by flooding conditions and has been rated along with the natural hazards. Classifications of dams and their magnitude of failure can be measured by the NH DES Dam Hazard Classifications shown in **Table 26**.

Table 26

New Hampshire Dam Hazard Classifications

Dam Classification		
NON-MENACE Structure		**Inspection**
NM	Means a dam that is not a menace because it is in a location and of a size that failure or misoperation of the dam would not result in probable loss of life or loss to property, provided the dam is:	Every 6 years if certain criteria are met
	❍ Less than six feet in height if it has a storage capacity greater than 50 acre-feet; ❍ Less than 25 feet in height if it has a storage capacity of 15 to 50 acre-feet.	
LOW Hazard Structure		**Inspection**
L	Means a dam that has a low hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in any of the following:	Every 6 years
	❍ No possible loss of life. ❍ Low economic loss to structures or property. ❍ Structural damage to a town or city road or private road accessing property other than the dam owner's that could render the road impassable or otherwise interrupt public safety services. ❍ The release of liquid industrial, agricultural, or commercial wastes, septage, or contaminated sediment if the storage capacity is less than two-acre-feet and is located more than 250 feet from a water body or water course. ❍ Reversible environmental losses to environmentally-sensitive sites.	
SIGNIFICANT Hazard Structure		**Inspection**

Dam Classification		
S	Means a dam that has a significant hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in any of the following:	Every 4 years
	❍ 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: ♦ Damage to a public water system, as defined by RSA 485:1-a, XV, which will take longer than 48 hours to repair. ♦ The release of liquid industrial, agricultural, or commercial wastes, septage, sewage, or contaminated sediments if the storage capacity is 2 acre-feet or ♦ Damage to an environmentally-sensitive site that does not meet the definition of reversible environmental losses.	
HIGH Hazard Structure		**Inspection**
H	Means a dam that has a high hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in probable loss of human life as a result of:	Every 2 years
	❍ Water levels and velocities causing the structural failure of a foundation of a habitable residential structure or commercial or industrial structure, which is occupied under normal conditions. ❍ Water levels rising above the first floor elevation of a habitable residential structure or a commercial or industrial structure, which is occupied under normal conditions when the rise due to dam failure is greater than one foot. ❍ Structural damage to an interstate highway, which could render the roadway impassable or otherwise interrupt public safety services. ❍ The release of a quantity and concentration of material, which qualify as "hazardous waste" as defined by RSA 147-A:2 VII. ❍ Any other circumstance that would more likely than not cause one or more deaths.	

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

Aging Infrastructure

Infrastructure of a community includes its roads, sidewalks, bridges, culverts, water lines, sewer lines. Those components such as electric lines, telecommunications towers and dams are not considered in this section because they are not usually municipal-owned. The State of New Hampshire maintains responsibility for NH 114, NH 9/ US 202 and the ramps in Henniker. The Town is responsible for miles of local Class V gravel and paved roadways and sidewalks, as well as the bridges. Communities in New Hampshire are faced with the dilemma of poor conditioned infrastructure with not enough funding to pay for rehabilitation, even with grants from the NH Department of Transportation (NHDOT) for roads and bridges and revolving loans from the NH Department of Environmental Services for water infrastructure.

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

Bridges, Culverts, Roads

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

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

Fire (Arson, Vehicle, Structure)

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

Hazardous Materials

Hazardous materials and hazardous wastes contain properties that make them potentially dangerous or harmful to humans. They can be liquids, solids, contained gases or sludge. Hazardous wastes can be the by-product of manufacturing, as well as discarded commercial products. Most households contain cleaning agents that become hazardous waste when disposed of improperly. Chemicals have numerous benefits but can also cause hazards during their production, storage, transportation, use or disposal. Hazardous materials can have adverse health related effects and may even cause death in certain cases. In addition, hazardous materials may damage homes, businesses and other property, as well as natural ecosystems. Chemical accidents in plants or chemical spills during transportation may often release hazardous chemicals.

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

Long Term Utility Outage

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

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

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

Electricity

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

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

Summer View from Pat's Peak Ski Lift

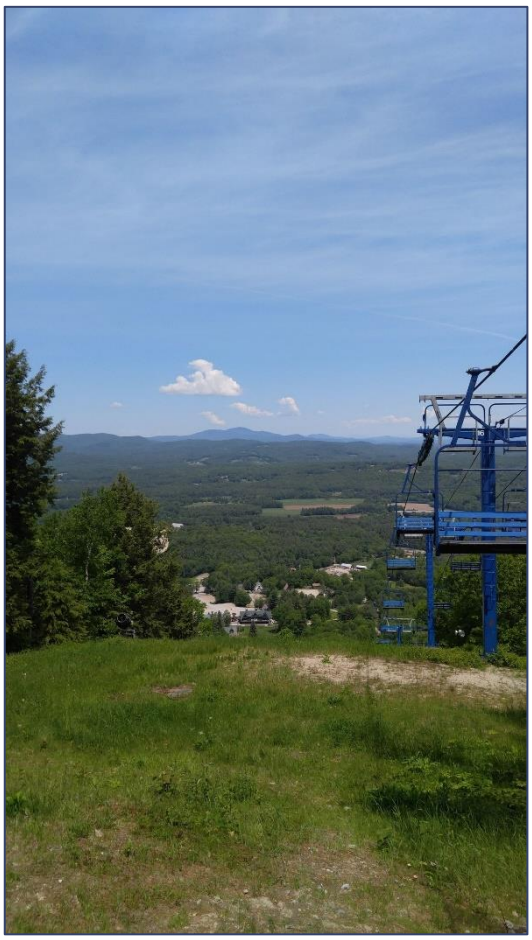


Image accessed online via alltrails.com June 2017, Sep 2019

HUMAN HAZARDS

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

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

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

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

Transportation Crashes

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

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

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

Mass Casualty Incident

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

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

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

Terrorism/Violence

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

Sabotage/Vandalism

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

Hostage Situation

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

Civil Disturbance/Public Unrest

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

Bioterrorism

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

Cyber Event

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

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

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

New England College Facilities, Situated in Downtown Henniker

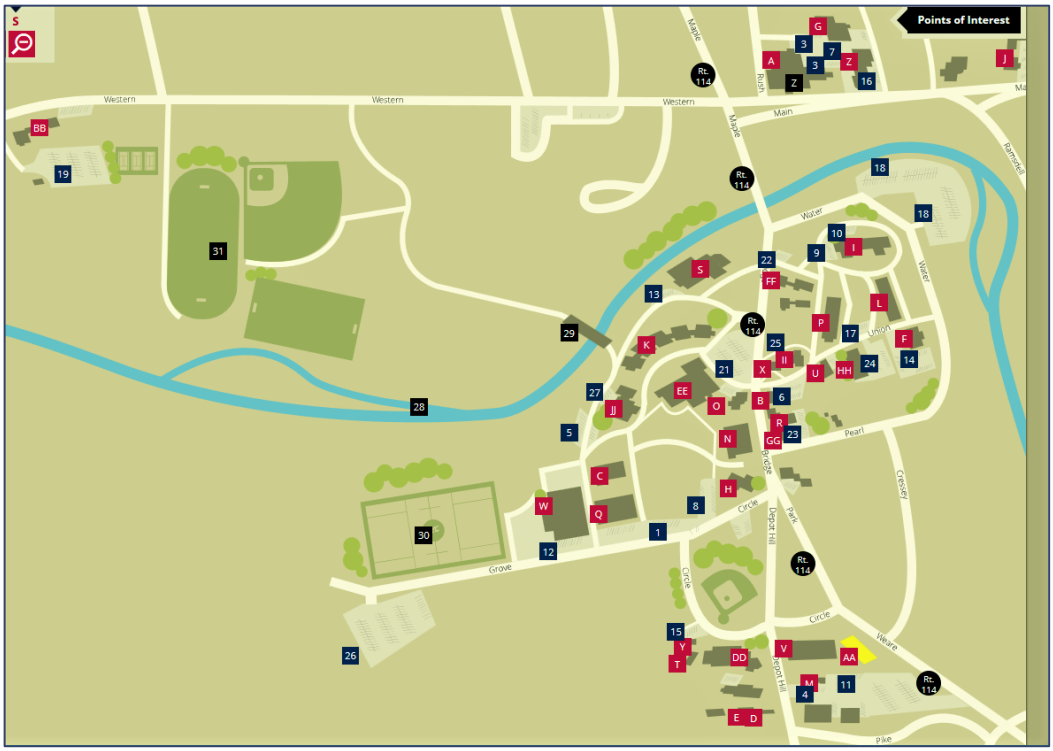


Image accessed via www.nec.edu 09-19

Potential Future Hazards

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

Potential future hazards in **Table 27** indicate locations in the community where a hazard event could occur and how that hazard could impact the Town. The **Overall Risk** score between **1-16** for the **15** rated hazards from the **HIRA** is provided to understand the scale of risk to Henniker from all natural hazards. Also from the **HIRA** is whether or not each hazard event occurred within the last **5** years in Henniker, indicated by either ***Events(s) Within Last 5 Years*** or ***NO Event(s) Within Last 5 Years*** beneath each *Hazard Category*. The magnitude or extent scale where available from previous **4 HAZARD RISK ASSESSMENT** descriptions enables possible effect measurement of the noted Henniker locations.

Table 27

Potential Future Hazards

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
AVALANCHE *Events(s) Within Last 5 Years*	**1.0 LOW**	• Pat's Peak is the location were future **avalanches** could occur in Henniker. The popular ski mountain hosts six black diamond trails that are steep and challenging. They are often closed to the public during dangerous conditions. Avalanches are most likely to occur on these trails.	✦ North American Avalanche Public Danger Scale
DROUGHT *Events(s) Within Last 5 Years*	**6.7 MEDIUM**	• During future **drought** events, agricultural farms, orchards, nurseries tree farms run the risk of high damage from droughts which also brings economic consequences. Some farms are homestead farms which provide food and income for owners. Crop and livestock loss are consequences of **droughts** in these locations. In Henniker, agricultural operations include multiple farms, orchards, nurseries, livestock. See **APPENDIX A** for the list. • In future drought conditions, private homeowner wells will continue to go dry. When this occurs, the owners typically have a new well dug. Town fire ponds and dry hydrants are found throughout the community, but over time they may dry up from drought. The Fire Department draws from these fire ponds around Town but low conditions will make this more difficult. • In the Downtown, users of the Cogswell Springs Water Works municipal water supply might have voluntary or required water restrictions to conserve the supply. The reserve water tanks might be used in severe **drought** conditions, and another active water well might be necessary in the future.	✦ US Drought (D-scale) Monitor Intensity Scale ✦ Palmer Drought Index (PHDI)
EARTHQUAKE *Events(s) Within Last 5 Years*	**4.0 LOW**	• Since Henniker is located within an active seismic region, residents are expected to feel future **earthquakes** but damages should be minor, if any. • Locations to watch include: the historic Downtown, areas with underground utilities, densely populated buildings or vulnerable populations such as Henniker Community School, New England College, Tucker Free Library, Town Hall, and essential Town facilities. Although the buildings may receive little damage from **earthquakes**, they should be carefully monitored because the buildings are structurally larger, typically contain a large number of people, may contain vulnerable populations, and are critical to the Town's operations and culture.	✦ Richter Magnitude Scale ✦ Modified Mercalli Intensity Scale
EXTREME TEMPERATURES **Excessive Heat, Heat Wave, or Cold, Wind Chill** *Events(s) Within Last 5 Years*	**12.0 HIGH**	• Excessive heat and extreme cold will continue being problematic for Henniker residents. There are many group facilities, manufactured housing parks, campgrounds containing the old, young, vulnerable, or marginalized populations. The Fire & Rescue and Police Departments will continue to check on at-risk residents when possible. • Should the temperature remain high (or low), the Town Hall and/or Tucker Free Library, or Grange Hall could be opened as temporary cooling (or warming) centers. The Henniker Community School is the official Town shelter and could be opened for this need with School District, Red Cross, and/or Capital Area Public Health Network assistance.	✦ NWS Windchill Index ✦ NWS Heat Index

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
HIGH WIND EVENTS **Wind, Thunderstorms, Hail, Downbursts, Tornadoes, Debris** ***Events(s) Within Last 5 Years***	**14.7 HIGH**	• All of Henniker will experience future severe wind, rainstorms, and thunderstorms often with lightning, particularly common in the summer months. In addition, tornadoes and downbursts are anticipated in the future based on past events. Flooding, debris, and property damage will accompany these events. Electrical power (Eversource) is disrupted during most wind-related events. The 6 telecomm towers on Lester Lane, Old Hillsborough Road, Flanders Road (3), and Craney Hill and TDS Telecom switching stations on Lester Lane, Dodge Hill Road, Rush Road, Patterson Hill Road, and Western Avenue could be damaged. Water Works water storage tanks could be vulnerable. • The whole Town could be impacted by a tornado or downburst. The Downtown would be most vulnerable with its high number of people and flat terrain along the Contoocook River, as tornadoes travel through flat areas and valleys. The Henniker Community School and New England College would hold the largest numbers of vulnerable people. • Downbursts have been observed to be occurring more frequently than in the past. Wind patterns tend to follow Craney Hill Road, in a west to east direction, and a southwest to southeast direction. Future severe wind events could follow similar routes. • These future high wind events will likely endanger roadways and utility lines from falling trees and limbs. NH 9/ US 202 travels east west and NH 114 travels north south, with the two routes intersecting Downtown. There are Class V town roads for suitable for commuter traveling but most of them are gravel and hilly, and are in danger of tree fall during high wind events. • Outside of the Downtown, the rest of the Town is wooded and forested and sections would be difficult to access with trees and power lines down on the residential roads. Should a downburst or tornado run through the popular hiking trails and conservation lands, people in these unsheltered locations would need assistance. Henniker has over 30 hills/points of elevation. • Older historic or wooden buildings within the Downtown areas, and the Churches, Historical Society, Grange, and other historical sites may be more vulnerable to wind damage because of their age and type of construction.	✦ Enhanced Fujita (EF) Tornado Scale ✦ Accuweather Thunderstorm Criteria Scale ✦ Hail Size Scale
INLAND FLOODING **Rains, Snow Melt or Flash Floods** ***Events(s) Within Last 5 Years***	**10.7 HIGH**	• Future flooding is expected in Henniker. Amey Brook, Bean Brook, Black Brook, Brown Brook, Beards Brook (Hillsborough), Cascade Brook, Chase Brook, Colby Brook, Gulf Brook, and the Contoocook River have the potential to flood their banks. • Many of the Town's 46 miles of paved roads and 28 miles of gravel roads have steep slopes and tend to washout during storm events. The community has unnamed brooks that flow under roads that would become impassible during heavy rainfall and resultant flooding conditions. Over 40 roads have regularly washed out and many are anticipated to do so in the future from spring snow melts or heavy rainfall.	✦ Special Flood Hazard Areas (SFHAs) on 2010 Digital Flood Rate Insurance Maps (Zones A, AE, X) ✦ Flood Action Stages

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		• Western Avenue along the Contoocook River may have a particular vulnerability to flooding conditions. Over 100 housing units, many of them containing vulnerable populations, reside on a Western Avenue that has only one egress during flooding conditions. Evacuation is of particular concern in the location. The Western Avenue Bridge over the Contoocook River was replaced in 2017 after repeated flooding, erosion, and scouring. • If needed to accommodate future Flood Control Reservoir pool elevation changes, the US ACE has enough barricades to close all of the road in the 4 towns they serve. If Hillsborough's Jackman Dam breaches, they would need more barricades. • See the **Special Flood Hazard Areas** (floodplains), **Waterbodies**, and **Road Washouts** sections for details. The SFHAs and road washout areas are anticipated to flood in the future during extreme events.	
LANDSLIDE **Soil, Rockslide or Excavation Areas** ***Event(s) Within Last 5 Years***	**2.0** **LOW**	• Generally, vegetation in Henniker is good at preventing future landslides. Potential future landslide are not expected to occur at the reclaimed excavation sites in Town. • The Town has numerous hills over 1,000' in elevation, most of them with roadways leading to homes. • Roads with steep ditching or embankments will remain vulnerable to landslide in the future. Road washouts and flash-flooding could cause landslides, especially along the hilly roads including Patterson Hill Road, Western Avenue embankments, and the 28 miles of hilly, gravel roads with ditching. Landslide is a fairly uncommon hazard but one that could cause property damage, otherwise the Town is not particularly susceptible.	✦ No known widely-used scale measuring the magnitude of landslides
LIGHTNING ***Events(s) Within Last 5 Years***	**12.0** **HIGH**	• Future lightning strikes may cause the damage at wooden historic structures in the greater Downtown: Downtown/Main Street blocks, New England College facilities, Town Hall, White Birch Center, Henniker Historical Society, Congregational Church, St. Theresa's Church, Weare Friends Quaker Meeting House, Colby Hill Inn, Henniker Pharmacy, Grange, Ocean Born Mary House, Hammond's Barn, Barrett House, Old School House, O'Connor House, Kirchner House, Holden House, buildings within the Historic District and buildings without lightning rods. Other structures and homes located in the populated areas would be most vulnerable to the power surges and outages caused by these strikes. • Town essential facilities buildings, construction/lumber businesses, and the fuel businesses could be damaging to the community if struck by lightning. • The high elevations over 1,000' including Bear Hill, Buck Hill, Colby Hill, Craney Hill, Liberty Hill, Morrill Hill, Mount Misery, Mount Hunger, and Wadsworth Hill, Pat's Peak may be most susceptible to lightning.	✦ Lightning Activity Level (LAL)

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		• High tension power lines, above utilities such as 6 telecommunications towers, and TDS Telecom switching stations each have their own specific vulnerabilities to lightning should a future strike occur. The communications equipment on top of Craney Hill Fire Tower belongs to state agencies, federal agencies and private cell phone companies. The repeaters and other equipment could be vulnerable to lightning events. • Forested areas and open recreation fields can be dangerous to people and property. Trees are constantly struck. These include the public Town and State Forests, conservation areas, and points of higher elevation which can be dangerous to people and property if struck by lightning, including the Hopkinton Everett Reservoir, Foster Conservancy, Vincent State Forest, Totten Trails State Forest, Preston Memorial Town Forest, Ames State Forest, Buehler/Salmen Forest, Colby Hill Forest, Craney Pond Town Forest, Craney Hill State Forest, or within the many private conservation lands and trail systems. Many of these locations cannot be easily accessed by emergency vehicles, whether to fight the fire or remove people from harm's way.	
PUBLIC HEALTH Infectious Diseases, Air & Water Quality, Biological, Addiction, Arboviral, or Tick-borne *Events(s) Within Last 5 Years*	**10.7 HIGH**	• Public health issues may occur in the community in the future during warm or cold months. For indoor contamination, the highest risk facilities for pick-up or transfer of viruses and bacteria can include the White Birch Center, Henniker Community School, New England College, Town Hall, Rush Square, Congregational Church, St. Theresa's Church, Weare Friends Quaker Meetinghouse, Henniker Pharmacy, and local food such as Country Spirit Restaurant, Daniel's Restaurant, Dunkin Donuts, Gin Gin Chinese Restaurant, Intervale Pancake House, Sonny's Main Street Restaurant, The Grazing Restaurant, and Western Avenue Pizza. All winter long, people of all in Henniker in close quarters get sick from different viruses. • Outdoor susceptibility to arboviral and tickborne diseases is expected to grow. Henniker is a highly rural community with many waterbodies (Grassy Pond, Carr Pond, Craney Pond, Keyser Pond, Long Pond, Upper Pond, Middle Pond, French Pond, Pleasant Pond and more), Western Avenue wetlands and other swampy areas for these arthropods to thrive. The conservation lands and trails which attract people (see **Lightning**) can also enable transmission. • Air quality warnings from Canadian fires and drifting smog do little to prevent particulate inhalation from Henniker's more vulnerable populations, outdoor enthusiasts, and College pedestrians. • French's Pond, Upper Pond, Pleasant Pond, Keyser Pond and Long Pond canoe launches/ beaches can be shut down in the future due to high cyanobacteria levels, and this situation is one to watch during the warm season in July-August. • The Town's local Point of Dispensing (POD) is located at the Henniker Community School. Henniker is a member of the Capital Area Public Health Network, which will assist the Town in times of public health crisis. The Town might want to find out if New England College can become another local POD to care for the college students.	✦ No known widely-used scale measuring the magnitude of public health incidents

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
RIVER HAZARDS **Ice Jams, Scouring, Erosion, Channel Movement or Debris** ***Events(s) Within Last 5 Years***	**8.0 HIGH**	• Future ice jams in the Contoocook River can be expected and are likely to cause infrastructure damage. Western Avenue and roads within floodplain areas or are likely in the future to be subject to ice jam damage. • These roads are closed by the Army Corps of Engineers annually in the spring for controlled flooding: River Road, Old Concord Road, and Shaker Hill Road. • Erosion of Town roads is anticipated to continue due flooding and heavy rains. The Highway Department will continue to monitor areas around Temple Road, Gulf Road at Depot Hill, Old Mill Pond Road at Rush Road and Amey Brook at Old Concord Road for damages. Western Avenue and Gulf Road on the Contoocook River have been rebuilt and reinforced numerous times due to stream bank erosion, which is anticipated to continue in the future. • Because of the high volumes and swift moving Contoocook River around Azalea Park, bank erosion, and channel movement are future hazards of concern.	✦ EPA Bank Erosion Risk Index
SEVERE WINTER WEATHER **Snow, Ice, Blizzard or Nor'Easter** ***Events(s) Within Last 5 Years***	**14.7 HIGH**	• It is extremely likely that Henniker will be impacted by severe winter weather in the future. Damage and serious conditions can result in all areas of the community. Areas above 1,000 feet are the most vulnerable (including Bear Hill, Buck Hill, Colby Hill, Craney Hill, Liberty Hill, Morrill Hill, Mount Misery, Mount Hunger, and Wadsworth Hill, Pat's Peak), as are the more than 30 elevation points above this level. • As severe winter conditions are expected to continue in the future and to increase in severity, concerns remain regarding safety on NH 9/US 202, NH 114 especially in high speed areas. Many local roads have a sharp incline/decline and cars have trouble traveling the roads during winter conditions, especially when icy. The Highway Department keeps up with the snowfall on 74 miles of Town roads, but ice storms require more time and resources to keep the roads safe. The crew is seeing regular severe warming and snowmelt which then freezes to ice. With the changing climate, this situation is anticipated to grow in the future. • Particular areas of concern during winter weather include high density or vulnerable populations of Downtown, New England College, White Birch Center, Henniker Community School, Rush Square elderly and affordable neighborhood; and the unpaved roads with more than 20 housing units: Bear Hill Road, East Side Drive campground, Hall Avenue, Mount Hunger Road, Patterson Hill Road, Liberty Hill Road, Hillside Drive, Dodge Bill Road, Craney Hill Road, Quaker Street, Ray Road homes & campground, Tanglewood Drive, Union Street, Western Avenue, and Wood Hill Village. • During future storms, some historic buildings including the Grange, Community Center, Town Hall, Town facilities with large or flat roofs and historic homes and large barns may be vulnerable to heavy snow loads or other events that could cause the roof to collapse. Flat roofs can be a problem with snow-loading.	✦ Sperry-Piltz Ice Accumulation (SPIA) ✦ NCDC Regional Snowfall Index (RSI) for Northeast

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		• The Craney Hill Fire Tower and telecomm tower, and the other towers on Lester Lane, Old Hillsborough Road, Flanders Road as well as Department antennas could be highly impacted from future snow, ice, and blizzards. The TDS switching stations and Eversource power lines may be disrupted. • Much of the Town is wooded and forested and sections are difficult to access with trees and power lines down on the residential roads during future snowstorms. See **APPENDIX F Henniker Roads Data**.	
SOLAR STORMS AND SPACE WEATHER **Solar Winds, Geomagnetic Storms (Aurora Borealis), Solar Radiation or Radio Blackout** ***FEW Events(s) Within Last 5 Years***	**3.3 LOW**	• The aurora borealis has been photographed on nearby Mount Kearsarge in Warner bordering Henniker to the north due to geomagnetic storms. These types of events are likely to recur. At this time, the Town is aware of potential impacts to its communications and electrical systems but has rated the hazard unlikely to cause damages. • The high elevation telecommunications array at Craney Hill Fire Tower and the telecom tower could be impacted in the future.	✦ NOAA Geomagnetic Storms Scale ✦ NOAA Solar Radiation Storms Scale ✦ NOAA Radio Blackouts Scale
TROPICAL AND POST-TROPICAL CYCLONES **Hurricanes, Tropical Storms or Tree Debris** ***NO Events(s) Within Last 5 Years***	**14.7 HIGH**	• The last tropical and post tropical storm to impact Henniker was Irene in 2012. There will be future tropical cyclones to impact Henniker. Although the vulnerable areas are spread all over Town instead of more site- specific, the facilities and locations at greatest risk are shared with **High Wind Events** and **Inland Flooding**.	✦ Saffir-Simpson Hurricane Wind Scale
WILDFIRE **Brushfire, Outdoor Fires or Accidental** ***Event(s) Within Last 5 Years***	**9.3 HIGH**	• Although few substantial wildfires have impacted Henniker since the last Plan, the potential exists for large fires in remote or difficult to access locations in the future. Drier foliage, slash on the ground, one-egress roadways, State Forests, conservation lands and backwoods trails could mean difficulty accessing severe fires should the need arise. As a member of the Concord Area Fire Mutual Aid Compact, the Town regularly provides other communities with mutual aid for wildfires. • The Craney Hill Fire Tower owned by the NH Division of Natural and Cultural Resources is not staffed nor does it have a remote camera system. This is a missed opportunity to locate future wildfires in the area. • Henniker is heavily wooded, with difficult, remote areas and many slopes. Aside from the Downtown area, most single family homes within Town could be particularly prone to wildfire since they are located in rural and wooded locations. Most new subdivisions which are approved occur in wooded areas, but most are required to have an adequate water supply for fire-fighting. A lot of slash remains on the ground.	✦ NWCG Wildfire Classification

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		• Some of the private roads or Class VI unmaintained roads could be particularly vulnerable to fire as they might not be readily accessible for fire apparatus. • See also **Lightning**.	
SECONDARY TECHNOLOGICAL AND HUMAN HAZARDS			
DAM FAILURE **Water Overtop, Breach, Beaver, etc.** ***NO Event(s) Within Last 5 Years***	**9.0 HIGH**	• There are few constructed dams in Henniker with potential for future flooding damage if breached or failed. The two **Low (L) Hazard** dams, both of them Pat's Peak (Whisper Impoundment 1.5 acres of water and Unnamed Brook 0.27 acres of water) may be unlikely to flood but still have the potential during a strong flooding event. Several **Non-Menace** dams are located throughout the community. Previous dam breach issues have occurred at the Michie Dam (Chase Brook 1.0 acre of water) which included siltation, and this may recur in the future. • A potential future breach of the upstream Jackman Dam in Hillsborough would place Western Avenue at risk to the impacts of a High Hazard **dam breach or failure**. The Franklin Pierce Lake preventative maintenance and relocation projects undertaken are good and supported by Henniker. • Beaver dams carry a high probability of flooding and potential for breakage. Beaver dams are located throughout the Town but are increasingly encroaching on the Downtown as the rural locations are removed by the Highway Department. Significant damage to Downtown roads may occur if unlocated urban beaver dams breach.	✦ NHDES Dam Classifications
AGING INFRASTRUCTURE **Bridges, Culverts, Roads, Pipes or Underground Lines** ***Events(s) Within Last 5 Years***	not scored	• Most of the Town's infrastructure is aging and only able to be replaced on a priority basis. Therefore, any future natural hazard could render the culverts, ditching, and drainage systems vulnerable. Town bridges are aging and could be subject to floods, ice, transportation crashes or debris impacted infrastructure. • The Wastewater Treatment Plant servicing the Downtown area receives little Town support of necessary improvements and not enough funding to upgrade old pipes, equipment, and facilities. An Asset Management Plan is starting to bring awareness to decision makers and voters. Future hazard events such as earthquakes, floods, severe freezing and continued aging infrastructure will make the problem worse. • See list of **Road Washouts** for a list of culverts susceptible to future floods, ice jams, debris, and other hazards. • The Town's roads are becoming more difficult to maintain and rehabilitate because of lack of funding and significant 74 miles of Town roads to maintain and rehabilitate. The future will bring further lack of maintenance because the Town Highway Budget will only stretch to the immediate priorities, while flooding events and anticipated to increase and impact multiple roads during each event.	N/A
FIRE **Vehicle, Structure,**	not scored	• Any future conflagration within the Downtown blocks, New England College campus, residential subdivisions, the Campground communities,	N/A

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
Arson or Conflagration *Events(s) Within Last 5 Years*		Rush Square, or Western Avenue housing, should one occur in the future, would have devastating effects to the entire community. • Future vehicular fires resulting from crashes could occur, especially on NH 9/ US 202, NH 114 or at Intervale Airport, where Henniker's first responders would arrive on scene before state authorities. • The numerous construction, lumber, and fuel businesses in Town could be subject to potential fires in the future (see **APPENDIX A** for the list). • Vacant structures in the Downtown blocks, vacant housing units affiliated with the College, housing run by absentee landlords, or other unmaintained housing runs a greater risk of arson in the future than occupied or well-kept premises.	
HAZARDOUS MATERIALS **Haz Mat Spills, Brownfields or Trucking** *Event(s) Within Last 5 Years*	not scored	• Transportation of hazardous materials on NH 9/ US 202 and/or NH 114 is believed to be an everyday occurrence. In the future, trucks could rollover and spill their contents (fuel, liquids, propane, solids, etc) onto these significant roadways. • Should a future haz mat spill occur on Western Avenue, not only could the contents of the spill reach the adjacent Contoocook River, nearly 100 vulnerable housing units would need to be immediately evacuated or the decision to either shelter in place would need to be made and conveyed to occupants. • Several occupational facilities in Town handle, store, or use hazardous materials. Any of these facilities could have a spill at their site or during transport which could result in a spill. Key sites include Ayer & Goss Fuel, Mobil Filling Station, Pat's Peak, HHP, Michie Corp, the numerous lumber yards, Central NH Concrete, Granite State Forest Products, construction businesses, and the Transfer Station. Town facilities such as the Damour Wastewater Treatment Plant and Cogswell Springs Water Works utilize and store strong chemicals such as sodium dioxide. See **APPENDIX A** for the full list. • Existing and future brownfields sites (old firing range and old west paper mill site by the steel bridges) might be located along the Contoocook River on property currently for sale. Other such historic use sites may exist and pose future danger to new property owners or river users in the area. The Town should be aware of and inventory these locations.	N/A
LONG TERM UTILITY OUTAGE **Power, Water, Sewer, Gas, Internet, Communications or Live Wire Danger** *Events(s) Within Last 5 Years*	not scored	• High tension lines in Henniker make the Town particularly vulnerable to outage during future disaster events. Utilities will be restored to the Downtown area first, the most populated area, and then to other priority neighborhoods like Rush Square and Western Avenue before the remote locations in Henniker have utilities restored. • Most Henniker residences outside the Downtown area own generators for their homes and are prepared for several days of no utilities to their homes during future storms.	N/A

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		• Important communications towers at Craney Hill, Lester Lane, Old Hillsborough Road, and Flanders Road (3) may be disrupted during future storm events. Essential communications may be paused until redundant capabilities are reestablished in the region.	
TRANSPORTATION CRASH **Vehicle, Airplane, Helicopter, Rail, Interstate, Pedestrian or Bicycle** ***Events(s) Within Last 5 Years***	not scored	• With NH 9/ US 202 and NH 114 running through Henniker, the Town's Fire and Rescue and Police Departments are often the first to respond to the vehicle crashes experienced on the state roadways. These routes are used heavily by commuters as they travel through Henniker to their destinations. Crashes are expected to increase over time, especially when conditions become icy from winter snow melt (climate change) for the fast highways and greater numbers of vehicles use the roads. The single most dangerous road is the Henniker-Hillsborough NH 9/US 202 straightaway. • The Town maintained roads, Class VI unmaintained roads and private roads have significant elevation changes that will continue to make travel difficult in the future in snowy, icy, flooded, or debris blockage conditions. Any time of year, dangerous intersections become more difficult to navigate with heavy winds, rain, treefall or flooding hazards. • Vehicle, pedestrian, and bicycle crashes are anticipated to continue to occur Downtown in the future with the growing College student base and increased public events despite attempts for education, signage, striping and studies for improvement in this area. • The Town may also have alternative future **crash** potential, such as airplanes, helicopters, and drones. The Intervale Airport enables small-engine plane traffic and these types of craft (not necessarily originating from this airport) have crashed in nearby communities. The Town's high elevation may be a challenge to flyers. With the increased usage of drones, the future potential for their crashing in populated areas or causing vehicular crashes is anticipated to rise. The US Army Corps of Engineers is seeing similar drone usage and has the same concerns.	N/A
MASS CASUALTY INCIDENT **As a result of any hazard event** ***NO Events(s) Within Last 5 Years***	not scored	• Significant groups of people are located at the New England School, Henniker Community School and Pat's Peak which could be where a future mass casually event could occur as a result of any other type of hazard event. • Henniker is a vibrant community with extremely active groups and social calendars. Events such as the College guest lectures, political candidate visits, NEC and Henniker School District sporting events, Pat's Peak year-round events, Town Meeting, Old Home Day, Veteran's Parades, Rotary Club Chile Fest, Farmer's Market on the Village Green, concerts, Fall Festival, Church events, Music on Main Street, NH Poetry Festival, charity road races and other community gatherings could set the location for future mass casualty incidents. • Concord Hospital is 20 minutes from Henniker and is the closest hospital with a trauma center. New London Hospital and Franklin Regional Hospital are about 30 minutes from Henniker. Support medical facilities in Henniker include the Pat's Peak First Aid Room, NEC	N/A

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
		Wellness Center, and some private practice doctors in Town should a mass casualty incident occur. • During times of mass casualty, it is likely the communications network will be overloaded. Residents may not be able to call and emergency responders could have difficulty reaching assistance. The Town Hall, Fire and Rescue Department, and Police Department phone lines would be jammed with callers.	
TERRORISM/ VIOLENCE **Active Shooter, Hostage, Public Harm, Civil Disturbance/ Unrest, Politically Motivated Attacks, Incendiary Devices, Sabotage or Vandalism** ***Events(s) Within Last 5 Years***	not scored	• It is possible the Town could be the target of an act of terrorism based on current trends. Possible targets could be New England School, Henniker Community School and Pat's Peak, White Birch Center, Town Hall, Fire Station, Police Station, Tucker Free Library, Citizen's Bank, Post Office, Henniker Pharmacy, Harvester Market, Daniel's Restaurant, Ayer & Goss Fuel Terminals, HHP Sawmill, or Central NH Concrete. • Future hostage situations are isolated events and are nearly impossible to predict. The sites where this potential exists could include those listed above under terrorism, the housing neighborhoods such as Henniker Knolls, River Meadow Condos, Western Ave Manufactured Housing Park, Wood Hill Village Manufactured Housing Park, Keyser Pond Campground, Mile Away Campground and Rock N' Birch Campground, and everyday domestic situations. Isolated incidents of violence could occur in the remote forested areas and trails of those Forests, federal lands, and conservation lands listed in the **Lightning** section. •Large scale incidents of civil disturbance and public unrest are possible in Henniker. Potential public unrest may take place at New England College. • Bomb threats are a possibility for NEC and less likely for the Henniker Community School based on current attitudes and trends. The wooden bridges over the Contoocook River, the upstream Jackman Dam in Hillsborough along the Contoocook River, or the downstream Hopkinton Dam along the River's Hopkinton-Everett Flood Control Reservoir could be subject to terrorist threats or bombs. • Any future sabotage of local utilities, Eversource lines, high tension power lines, the telecommunications towers, Craney Hill Fire Tower, TDS telephone and internet substations, Wastewater Treatment Facility or pipes, Cogswell Water Works pumping stations, wells or water storage tanks, or the local Low Hazard and Non-Menace dams would cause an immense amount of damage in Henniker.	N/A
CYBER EVENT **Municipal Computer Systems Attack, Website Overtake, Cloud Data Breach, Telephone Rerouting, Identity Theft, Phishing,**	not scored	• The entire Town – residents, businesses, municipal, NEC, School District, and state facilities- could be subject to future cyber events. Cyberattacks could target their websites, computer systems, cloud data systems, archival records, or use email phishing or related techniques to install ransomware, etc. The Town Hall, Police Department, Fire and Rescue Department, Transfer Station, Highway Department, Tucker Free Library, Historical Society records, Henniker Pharmacy, Henniker Community School, New England College, Pat's Peak, and technology	N/A

Hazard Risk Assessment Hazards	Overall Risk	Potential Future Hazards – Locations and Impacts	Magnitude/ Extent Measurement Scales
Ransomware, Virus or Phone Scams ***Event(s) Within Last 5 Years***		businesses would be high-value targets for their software and their archival systems. • Email scams, phone scams, door-to-door canvassing, and identity theft are likely to continue in the future, causing regular problems for residents and businesses. These scams are more likely to impact the Town's senior residents. Significant future damage could be done to municipal, NEC, and School systems, the Pharmacy, Bank and Post Office, in addition to tech businesses and other facilities located in Town. Private businesses targeted could create a negative economic impact on the community.	

Source: Henniker Hazard Mitigation Committee

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

Henniker Community School

Image accessed online Sep 2019

INLAND FLOODING

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

Special Flood Hazard Areas (SFHA)

There are active **10** Digital Flood Insurance Rate Maps (DFIRMs) in Henniker from the April 2010 updated set, of which **3** panels contain floodplains of the **Contoocook River**: **#0486, #0487, and #0488**. These Henniker DFIRM panels includes **Zone AE** floodways (1% annual risk of flooding) and **Zone AE Base Flood Elevations (BFEs)** (1% annual risk of flooding). Because of the Hopkinton Everett Flood Control Reservoir, there are few designated SFHAs in Henniker. The DFIRM panels are described and highlighted gray in **Table 28**.

Of the remaining **7** DFIRMs, only **#0491** and **#0485** contain only **Zone A** (1% annual risk of flooding) floodplain areas for **Gulf Brook**, **Carr Pond** and **Grassy Pond**. Five (**5**) DFIRMS do not have SFHAs in Henniker (**#0480**, **#0460**, **#0515**, **#0511**, **#0492**, **#0266**). The remaining **6** DFIRM designated areas do not have DFIRM Panels because there are no SFHAs located within the grid. The many named lakes, ponds and brooks in Town do not appear on these DFIRMs as being located in SFHAs and are mostly displayed in the white rows of **Table 28**.

Table 28

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

Panel NH (D33013C)	Flood Zones in Henniker (330114)	Base Flood Elevations (BFEs)	Water Body Areas in Floodplains	Community of Henniker Geographic Location
#0486	AE with Floodway, AE, X	441' to 472' west to east: 472', 465', 451', 445', 441'	**Contoocook River, Hopkinton-Everett Flood Control Reservoir boundaries**	Cote Hill Road, Browns Way, Overhill Road, Freeman Colby Road, NH 9/US 202, Hillsborough Road, Bacon Road, Colby Hill Road, Deer Run Road.
#0487	A, AE with Floodway, AE, X	422' to 438' west to east: 438', 432', 431', 429', 428', 427', 425', 424', 423', 422'	**Contoocook River, Gulf Brook, Hopkinton-Everett Flood Control Reservoir boundaries**	Geographic community center and most populated areas. Faulkner Road, Butter Road, Bear Hill Road, Patterson Road, Locust Lane, Depot Hill Road, Davison Hill Road, Liberty Hill Road, Fairview Avenue, Grove Street, Water Street, Ramsdell Road, The Oaks, Maple Street, NH 9/ US 202, Rush Road, Old Concord Road, Hopkinton Everett Flood Control Reservoir boundary.
#0488	AE with Floodway, AE, X	480' to 553' west to east: 553, 550, 545, 538, 522, 491, 480	**Contoocook River**	Western edge with Hillsborough. Brown's Way, NH 9/ US 202, Cote Hill Road, Old Hillsborough Road, Bear Hill Road, Peasley Road, Matthews Road, Baker Road, Western Avenue.

Panel NH (D33013C)	Flood Zones in Henniker (330114)	Base Flood Elevations (BFEs)	Water Body Areas in Floodplains	Community of Henniker Geographic Location
#0491	A	N/A	**Gulf Brook, Hopkinton-Everett Flood Control Reservoir boundaries**	Pat's Peak, Craney Hill Road, Craney Pond Road, Weare Road, NH 9/ US 202, Old Concord Road, Centervale Road, Morse Circle. Flood Control Reservoir boundaries to the north and east, Contoocook River, Gulf Brook, Chase Brook (not in SFHA)
#0485	A	N/A	**Carr Pond, Grassy Pond**	Northeastern boundary with Warner and Hopkinton. Lone Pine Road, Dodge Hill Road, Ray Road, French Pond Road, Hemlock Corner Loop, Bound Tree Road, Tanglewood Drive, Foster Hill Road, Hopkinton Everett Flood Control Reservoir. Long Pond, Middle Pond, Upper Pond, French Pond (not SFHA)
#0480	None	N/A	**None**	Northcentral border with Warner. NH 114, Liberty Hill Road, Warner Road, Davison Road, Tanglewood Drive, Rush Road, Hemlock Corner Loop. Long Pond, Colleague Pond, Amey Brook, Warner Brook (not in SHFA)
#0460	None	N/A	**None**	Northwest border with Bradford, Warner, Hillsborough. Liberty Hill Road, Colby Hill Road
#0515	None	N/A	**None**	Southeast corner bordering Weare and Hopkinton. Shaker Hill Road
#0511	None	N/A	**None**	Eastern edge bordering Hopkinton. Longview Drive, River Road
#0492	None	N/A	**None**	Eastern border with Hopkinton. Bennett Road, Weare Road, River Road, NH 9/US 202, Highland Drive, Old West Hopkinton Road, Old Concord Road, Centervale Road, Shaker Hill Road. Contains Flood Control Reservoir boundaries. Contoocook River, Keyser Pond, Mud Pond (not in SFHA)
#0470 No Panel	None	N/A	**None**	Western border with Hillsborough. Liberty Hill Road, Colby Hill Road
#0489 No Panel	None	N/A	**None**	Southern section in the west containing Pleasant Pond.
#0493 No Panel	None	N/A	**None**	Southern section bordering Weare containing Craney Pond.
#0494 No Panel	None	N/A	**None**	Southern section bordering Weare. NH 114
#0605 No Panel	None	N/A	**None**	Southwestern corner bordering Hillsborough and Deering.

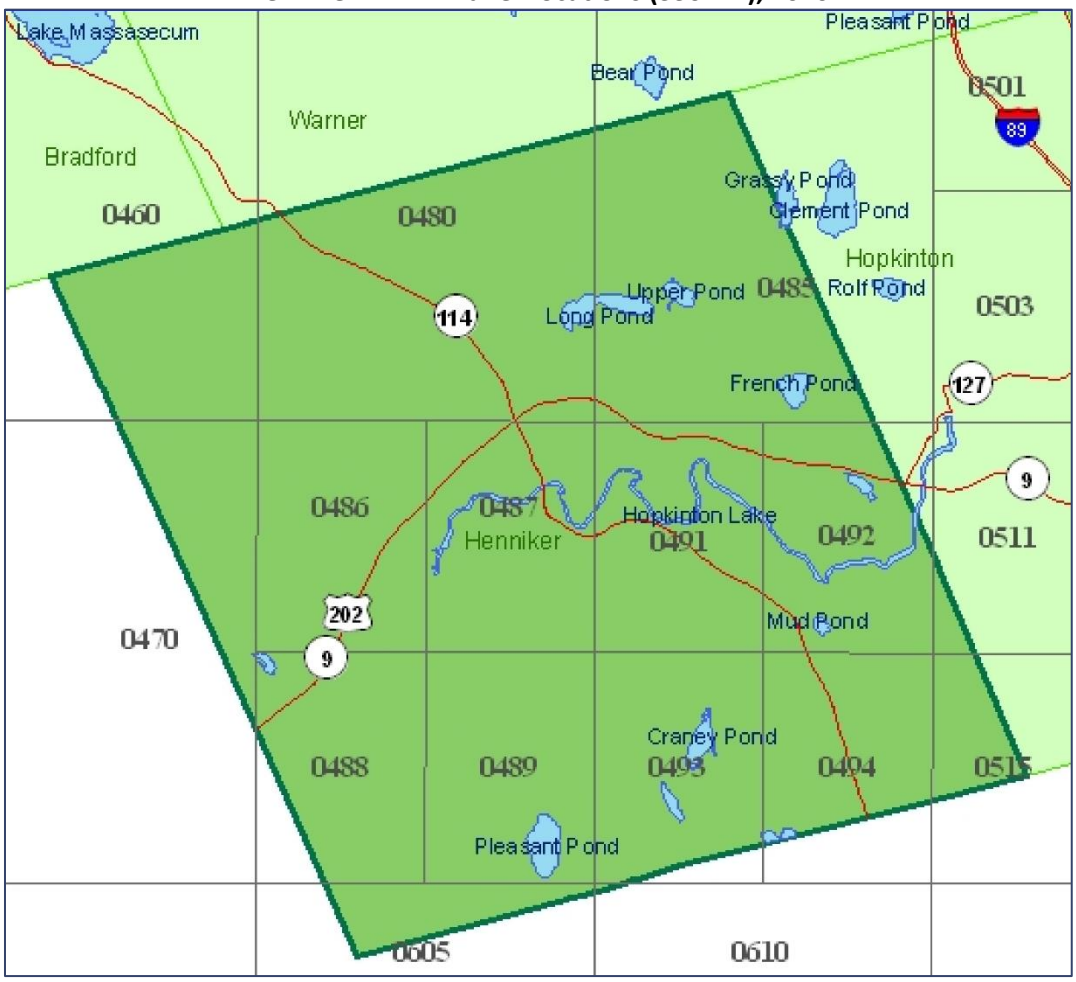
Panel NH (D33013C)	Flood Zones in Henniker (330114)	Base Flood Elevations (BFEs)	Water Body Areas in Floodplains	Community of Henniker Geographic Location
#0610 No Panel	None	N/A	**None**	Southern edge corner bordering Deering.

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

Figure 16 displays the relative location of each of the DFIRM panels in the community used in **Table 27**. This set of DFIRMs is excerpted from the ***Merrimack County Flood Insurance Study (FIS) of 2010***. The graphic illustrates the numbering system of the DFIRMs, how they are not always consecutive.

Figure 16

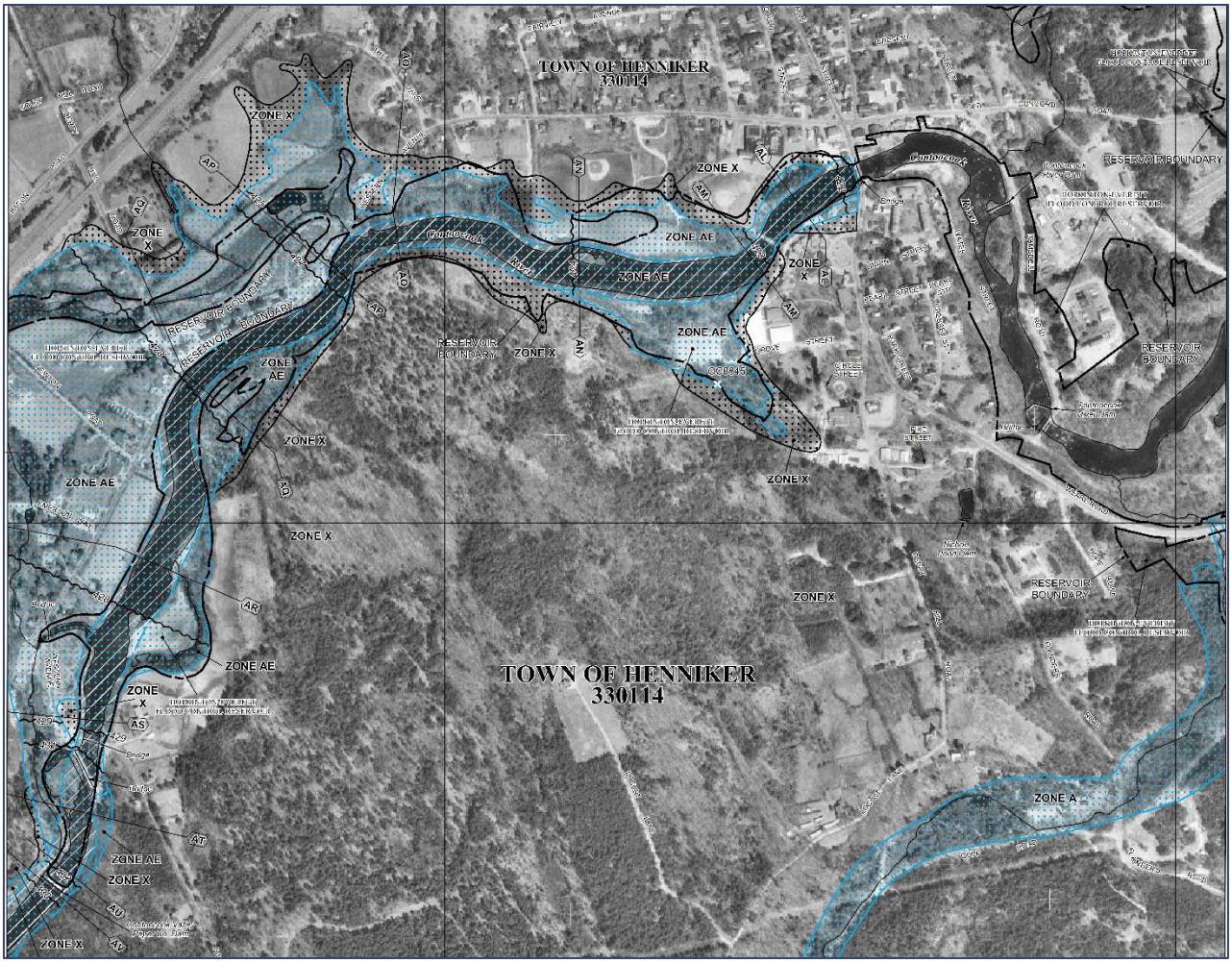
Henniker DFIRM Panel Locations (330114), 2010



Source: Henniker DFIRMS can be downloaded at http://www.granit.unh.edu/dfirms/d-DFIRMzips/Henniker.zip, last accessed 07-19

Figure 17 displays an example of a DFIRM's zoomed-in view of the Henniker Downtown where the Contoocook River flows northeast from Hillsborough south of NH 9/ US 202 and eventually flows into Hopkinton. The Contoocook River in the Downtown has multiple classifications based on location, depth, and elevation. Within this densely populated area of Town, the River is designated as **Zone AE** (1% annual chance, BFEs), **Zone X** (0.2% annual chance), **Zone AE with Floodway** (1% annual chance, channelized), **Zone A** (1% annual chance, no BFEs). The Contoocook River is not designated with a flood zone after Maple Street within this extent of the Hopkinton-Everett Flood Control Reservoir.

Figure 17
Zoom View of Henniker Downtown DFIRM Panel Location #0487



Source: FEMA DFIRM 2010 for Henniker NH #0487

Watercourses do not end at municipal boundaries but contribute to a much larger watershed area. The **Contoocook River** begins in the Town of Rindge in Hillsborough County. In the Central NH Region, the smaller **Warner River** and **Blackwater River** empty into the **Contoocook** in Hopkinton, which borders Henniker to the east. The volume flowing into the **Contoocook River** increases until its confluence with the **Merrimack River** in Penacook/Boscawen. Along these rivers, several river gages of the US Geological Survey monitor river conditions and records statistics. Historical records of flood crests as displayed in **Table 29** enable perspective on how often the **Contoocook River** near Henniker (Western Avenue west of Cote Hill Road) floods, including its contribution to the **Merrimack River** upstream.

The Hopkinton Everett Flood Control Reservoir controls much of the flow volume and height of the **Contoocook River** within the Central NH Region.

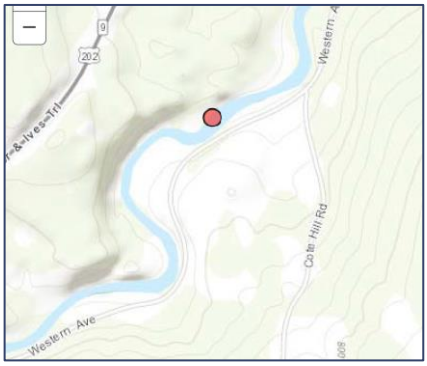
Table 29

USGS 01085000 Flood Crests – Contoocook River near Henniker (Western Ave)

Historic Crests		Recent Crests	
Feet	Date	Feet	Date
21.30	09/21/1938	13.25	03/16/2010
14.54	04/17/2007	14.54	04/17/2007
13.75	10/16/2005	13.48	05/15/2006
13.48	05/15/2006	13.75	10/16/2005
13.32	04/03/2004	12.36	04/04/2005

Source: https://water.weather.gov, last accessed 08-19

National Weather Service's Advanced Hydrologic Prediction Service provides the historical crest data for the **USGS 01085000 Contoocook River** gage location on Western Avenue as related to its **Flood Stages**. Flood impact remarks provide perspective for the next flooding events are also available online.



Major Flood Stage	20
Moderate Flood Stage	16
Flood Stage	12
Action Stage	10

15	Henniker St in Hillsborough flooded with 3 feet of water. Bear Hill Rd in Hillsborough not passable.
14	Henniker St flooded with 2 feet of water. High Tide Restaurant not accessible. Western Avenue in Henniker flooded.
13	Henniker St flooded from High Tide Restaurant to Old Henniker Road. Bear Hill Road is flooded.
12	Henniker St in Hillsborough begins to flood. Parking lot at High Tide Restaurant flooded. Bear Hill Rd in Hillsborough starts to flood. Water encroaching on parts of Western Avenue in Henniker.
10	Lowland flooding.

Waterbodies

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

- **Watercourses:** Contoocook River, Amey Brook, Beards Brook, Chase Brook, Colby Brook, Dudley Brook, French Pond's Brook, Gulf Brook, Sand Brook, several unnamed brooks, and intermittent streams.

- **Waterbodies:** Carr Pond, Colleague Pond, Craney Pond, Dudley Pond, French's Pond, Grassy Pond, Keyser Pond, Long Pond, Middle Pond, Nichols Pond, Pleasant Pond, Upper Pond; several recreation/farm ponds and unofficial Fire Ponds; and several drainage ponds, unnamed ponds and wetlands.

Road Washouts

Most of the local, gravel Town Class V maintained roads in Henniker are constructed using ditching; storm drains are found along the densely situated paved roads. About 40 miles of the Town maintained roads are gravel, enabling easier, regular washout during future flooding events and heavy rains. Regular road washouts have included: (*Frequently washed out or become flooded during periods of high rain)

- Baker Road
- Bear Hill Road
- Butter Road*
- Colby Hill Road*
- Colleague Pond Road*
- Cote Hill Road
- Craney Hill Road
- Depot Hill Road
- Dodge Hill Road*
- Dudley Pond
- Flanders Road
- Freeman Colby Road
- French Pond Road
- Gulf Road at Depot Hill Road*
- Hall Avenue and Western Avenue intersection
- Hemlock Corner Loop
- Highway Department Garage Road
- Huntington
- Liberty Hill Road*
- Mount Hunger Road*
- NH 114 at town line*
- Old Concord Road
- Old Hillsboro Road*
- Patterson Hill Road
- Peasley Road
- Quaker Street*
- Ramsdell Road*
- Rand Road
- River Road
- Ray Road between Upper and Middle Pond*
- Rush Road
- Shaker Road
- Temple Road
- Warner Road and Hemlock Corner Loop*
- Weare Road at Colby Crossing*
- Western Avenue (numerous locations)*
- Whitney Road
- And several more

HOPKINTON-EVERETT FLOOD CONTROL RESERVOIR

The Hopkinton-Everett Flood Control Reservoir covers a large section of eastern Henniker in the vicinity of the **Contoocook River**. The following history and technical information was excerpted from the US Army Corps of Engineers New England District Hopkinton-Everett Lakes Flood Risk Management Project at: https://www.nae.usace.army.mil/Missions/Civil-Works/Flood-Risk-Management/New-Hampshire/Hop-Ev/.

The Hopkinton-Everett Lakes project (Henniker, Hopkinton, Weare, Dunbarton) provides flood protection to residential, commercial, and industrial property downstream on the Contoocook and Piscataquog Rivers, which are tributaries of the Merrimack River. Hopkinton Lake protects the communities of Concord including the Contoocook and Penacook sections, Boscawen, Canterbury, and Bow. Everett Lake protects Dunbarton and Weare, Manchester including the Riverdale section, and Goffstown. Operating in conjunction with other Corps dams in the Merrimack River Basin, the project also helps protect major industrial centers along the Merrimack River, including Nashua and the Massachusetts communities of Lowell, Lawrence, and Haverhill.

The Flood Control Reservoir was constructed as a result of the disastrous flooding in **November 1927** and **March 1936** and **September 1938** storms and flooding. When completed, the Hopkinton-Everett Dams would provide assurance that the floodwaters would not ravage communities again in central and southern New Hampshire and northern Massachusetts. Construction of Hopkinton Dam was started in **November 1959** and completed in **January 1963**. In addition to the protection of the Merrimack River Basin, Hopkinton Lake provides protection to downstream communities along the Contoocook River. The dam is an earth dam consisting of rolled earth fill with rock slope protection. It is approximately **790** feet long and **76** feet high.

Hopkinton Dam in Henniker on the Contoocook River

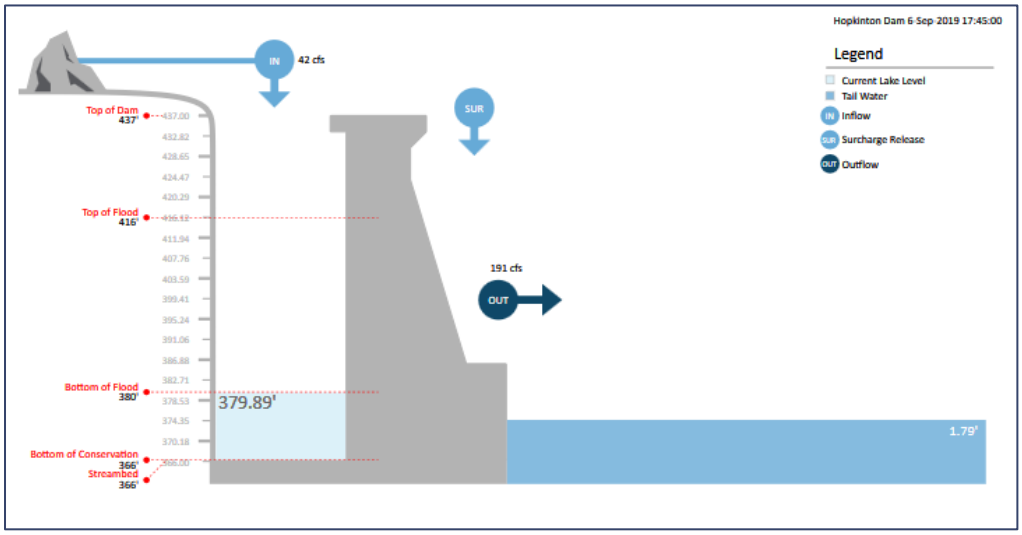
Image accessed online via US Army Corps OF Engineers New England District Civil Works, 09-19

Construction of Everett Dam started in **November 1959** and was completed in **January 1962**. Everett Dam is an earth dam consisting of rolled earth fill with rock slope protection. It is approximately **2,000** feet long with a maximum height of **115** feet.

In **Figure 18,** a data image of the **Sep 2019** Hopkinton Lake pool elevation height at **379.89'** illustrates comparison with the profile height of the Hopkinton Dam and with other redline benchmarks related to pool height. The surcharge downstream water release (**Contoocook River**) for this date is **1.78'**.

Figure 18

Hopkinton Dam Profile and Pool Elevation for 09-06-19



Source: USACE Access to Water Resources Data http://water.usace.army.mil/a2w/f?p=100:1:0:# accessed 09-06-19

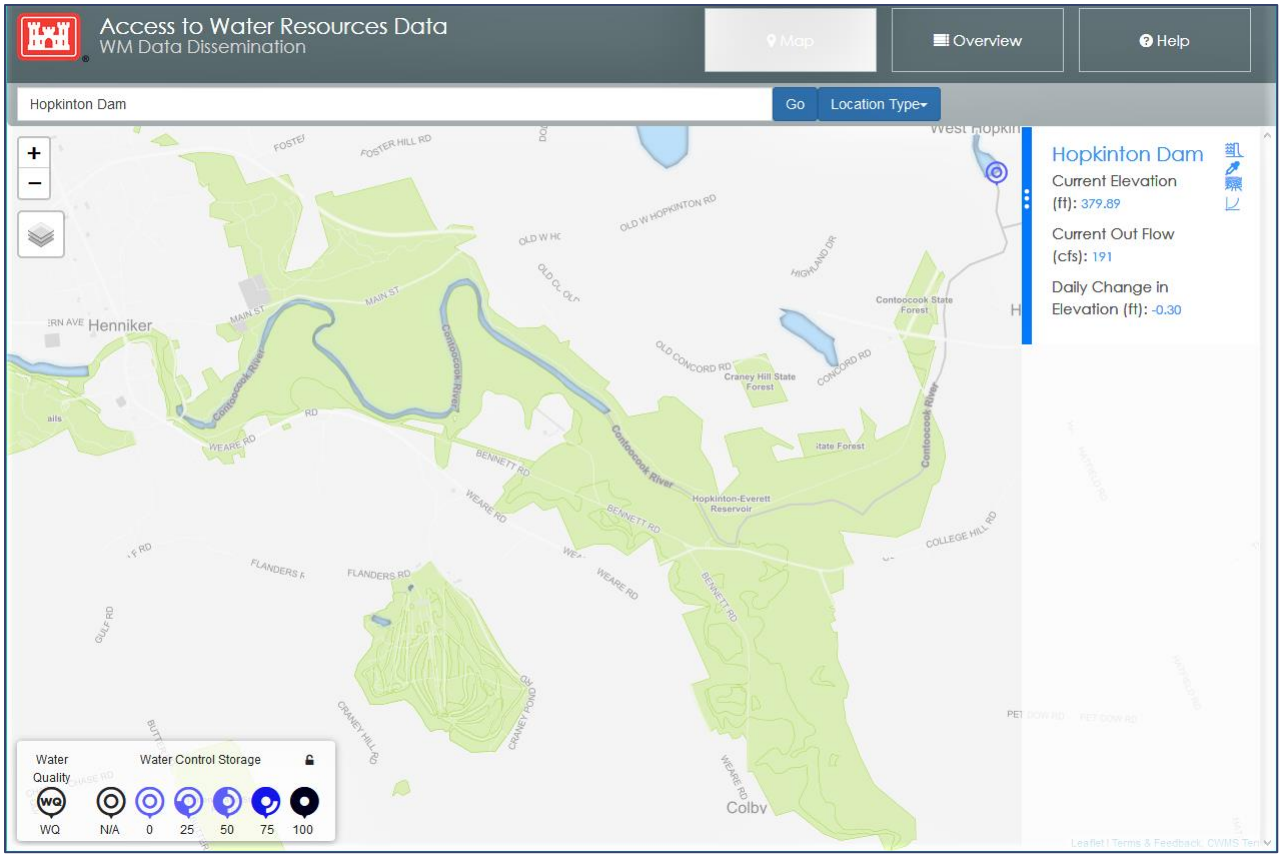
Hopkinton Lake consists of an earthfill dam with stone slope protection 790 feet long and 76 feet high; three gated square concrete conduits, each measuring 11 feet high and 11 feet wide, with two conduits 124 feet long and the third 128 feet long; and a spillway excavated in rock. The spillway at Hopkinton Lake is unusual in that instead of being located adjacent to the dam as most spillways are, it is located about 1.8 miles east of the dam. The spillway, situated across Cressy Brook, has a concrete weir 300 feet long with a crest elevation 21 feet lower than the top of the dam.

The project also has four earthfill dikes with stone slope protection (two at each dam) totaling 16,300 feet in length. At Hopkinton Lake, Dike One is located on Elm Brook, about .25 mile east of the dam, and is 5,220 feet long with a maximum height of 66 feet. Dike Two, located adjacent to the spillway across Cressy Brook about 1.8 miles east of the dam, has a length of 4,400 feet and a maximum height of 67 feet. The other two dikes are located at Everett Lake.

The features that distinguish the dams at the Hopkinton-Everett Lakes project from other Corps-built dams in New England are two canals that act in conjunction to divert the floodwaters of the Contoocook River stored behind the dam at Hopkinton Lake to the flood storage area behind the dam at Everett Lake. During minor and moderate flooding, there is enough flood storage area behind the dam at Hopkinton Lake to store the floodwaters from the Contoocook River, and there is enough storage area behind the dam at Everett Lake to hold back floodwaters from the Piscataquog River. However, when major flooding occurs, there is not enough land behind the dam at Hopkinton Lake to hold the large volume of

floodwaters from the Contoocook River. If not held back, these floodwaters would race downstream and threaten lives and property. There is enough land behind the dam at Everett Lake on the Piscataquog River to hold not only potentially damaging floodwaters from the Piscataquog River, but also the excessive floodwaters from the Contoocook River that the dam at Hopkinton Lake cannot contain. The two canals act together to direct Contoocook River floodwaters from behind the dam at Hopkinton Lake to the flood storage area behind the dam at Everett Lake. **Figure 19** displays the location of the Hopkinton Dam and most of the extent of the Hopkinton-Reservoir in Henniker.

Figure 19
Location of Hopkinton-Everett Reservoir in Henniker



Source: USACE Access to Water Resources Data http://water.usace.army.mil/a2w/f?p=100:1:0:#

The flood storage area behind Hopkinton Lake totals 3,700 acres and extends about 8.5 miles upstream through Henniker to the Contoocook Valley Paper Company. This acreage includes areas that are normally empty and areas that have permanent bodies of water. Some of the larger bodies of water behind the dam at Hopkinton Lake include the 220-acre permanent pool on the Contoocook River, which has a maximum depth of 14 feet; the 456-acre Elm Brook Pool; the 47-acre Drew Lake, which makes up the upper 2,000 feet of Canal II; and two lakes, approximately 87 and 35 acres respectively, located within the confines of Stumpfield Marsh. The flood storage area behind Everett Lake totals 2,900 acres and extends westerly up the Piscataquog River in Weare; northerly up Choate Brook, which lies mostly in Weare with a

small portion lying in Dunbarton; and northerly up Stark Brook in Dunbarton. This acreage includes a 130-acre permanent pool with a maximum depth of 15 feet. Together, the flood storage areas behind both dams can hold 52.6 billion gallons of water, which would cover approximately 8,000 acres (12.5 square miles). This is equivalent to 6.8 inches of water covering its drainage area of 446 square miles. The lakes and all associated project lands cover 9,945 acres.

The Reservoir Control Center (RCC), located at the Corps' New England District Headquarters in Concord, MA, is the "nerve center" for all Corps-operated dams in New England. Using radio and satellite communications, RCC constantly monitors river levels and weather conditions and directs the operation of the dams during high flows.

Local USACE Coordination in Henniker

Annually, these Henniker roads are closed by the US Army Corps of Engineers for **2-3** weeks in the spring to accommodate rapid snow pack melt: Old Concord Road, Ramsdell Road, and River Road. For other hazard events such as severe rain storms or tropical and post-tropical storms which bring large amounts of precipitation, the Hopkinton Dam is monitored in real-time to ensure the basin levels are appropriate at this site: https://reservoircontrol.usace.army.mil/NE/pls/cwmsweb/cwms_web.cwmsweb.cwmsindex.

Locally, when the pool elevation reaches certain benchmarks, USACE staff take action to close barricades on Henniker roads to ensure vehicular traffic does not go through these areas. **Table 30** displays the benchmarks and the barricades closed at these respective water heights.

Table 30

Hopkinton Lake Elevations Recorded by US Army Corps of Engineers

Pool Elevation (ft, msl)	Description of Impact and Actions at Hopkinton Lake Area
366	Inlet Elevation
380	Permanent Pool (as controlled by ENE) 1 May -30 Sept
382	Permanent Pool (as controlled by ENE flashboards) 1 Oct -30 April
383	First Alert
384	Water begins passing to Elm Brook Pool via Canal #1
386	Close gates at Elm Brook Park and 202/9 Boat Ramp
388.5	Piezometers / Downstream Reconnaissance Inspections by Project Personnel
390	Close gates at Sharpe's Farm
392	Close barricades at College Hill Rd., Shaker Rd., Stumpfield Mudget (Hopkinton), River Rd. (Henniker)
397.5	Close east and west barricades on Old Concord Rd. (Henniker)
397.5	Level of snowmobile bridge under 202/9 by Dunkin Donuts
398.2	Close east and west barricades on Thain Rd. (Hopkinton)
400.75	Crest of South Weir (Choate Brook)
401.75	Close barricades on Sugar Hill Rd. (Hopkinton). Crest of North Weir – flow passes from Hopkinton Lake to Everett Lake
403	Close east and west barricades on Ramsdell Rd. (Henniker)
405	NAE Reconnaissance Inspection

Pool Elevation (ft, msl)	Description of Impact and Actions at Hopkinton Lake Area
410	Erect barricades on old Route 114 by Bennett Rd. (Henniker)
416	Spillway crest elevation – Project personnel will notify local authorities in advance if spillway discharge is expected to occur
420	Limit of flowage easements in reservoir area – above 420 problems may occur in Henniker
430	Maximum design surcharge elevation (14 foot surcharge over spillway)
	Barricades are to be put in place in advance if pool is expected to reach indicated elevation

Source: US Army Corps of Engineers, Hopkinton-Everett Lake Reservoir May 2019

Maps 1-2 of this **Hazard Mitigation Plan** display the extent of **420'** elevation inundation, which is the limit of the flowage easements (**2,155** acres in Henniker) in the Hopkinton-Everett Flood Control Reservoir. Gate locations at the elevations **390' – 410'** indicated in **Table 30** provide visual representation in western Hopkinton and in Henniker of where access will be denied for safety reasons during these extreme flooding conditions. These gate location elevations are displayed on *Map 1, 2 and 4* of the **2019 Plan**.

Local contact information for the Hopkinton Dam USACE staff, to coordinate emergency management and mitigation projects, is 603-746-3601. The office is located at 2097 Maple Street in Hopkinton, or 102 Elm Brook Park Road in Contoocook. The updated Facebook page is https://www.facebook.com/HopkintonEverettLake/.

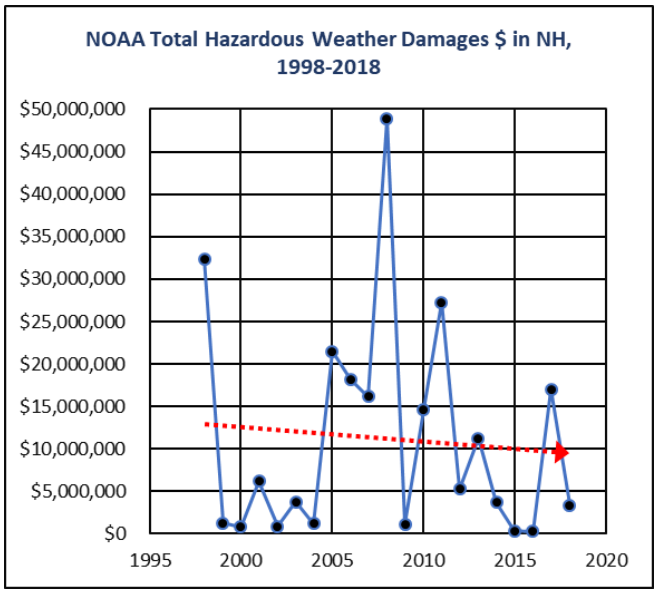
Local Climate Changes and Extreme Weather

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

Table 31

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

Year	Fatalities	Injuries	Total Damages $ in Million
2018	2	9	**$3.4**
2017	0	0	**$17.0**
2016	1	1	**$0.27**
2015	2	34	**$0.37**
2014	0	2	**$3.7**
2013	0	30	**$11.3**
2012	1	4	**$5.28**
2011	1	2	**$27.3**
2010	1	6	**$14.63**
2009	1	0	**$1.13**
2008	2	5	**$48.9**
2007	0	3	**$16.15**
2006	1	9	**$18.2**
2005	4	9	**$21.5**
2004	0	11	**$1.2**
2003	2	29	**$3.8**
2002	0	7	**$0.9**
2001	0	2	**$6.2**
2000	2	6	**$8.0**
1999	3	17	**$1.3**
1998	1	23	**$32.4**



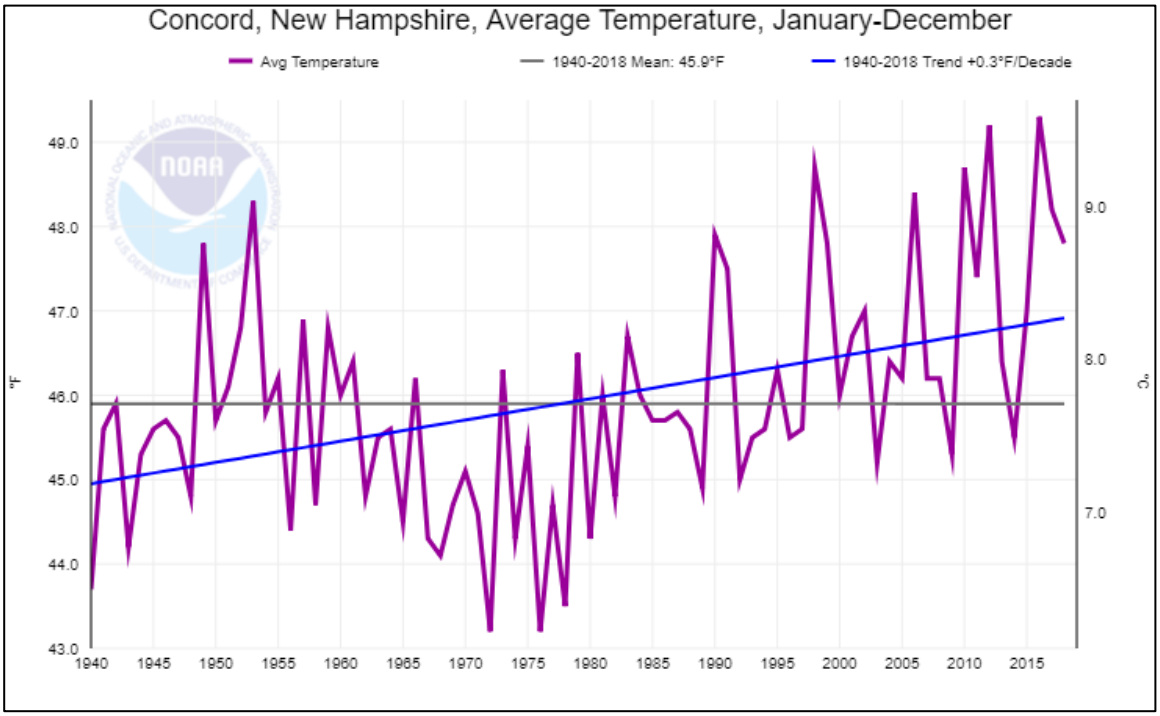
Source: National Oceanic and Atmospheric Administration, last accessed 07/19.
Adjusted for inflation [Consumer Price Index CPI)]
http://www.nws.noaa.gov/om/hazstats.shtml

Injuries to people and the costs of damages in New Hampshire have slightly decreased from hazardous weather over the last **20** years according to the trendline displayed in the associated chart for **Table 31**. Between **1998-2008**, this slight decline in injuries and damages can be generally applied to the major disasters declared in the State. The highest damage costs correlate to the **1998** (**$32m**) and **2008** (**$49m**) ice storms. The number of injuries and fatalities have a less distinct association, with the highest casualties shown in **2015** (**36**), **2013** (**30**) and **2003** (**31**). However, the single greatest number of fatalities during this time period occurred in **2005** (**4**), likely during the time of the **Oct 2005 Columbus Day Floods** that struck the southwestern section of the State very hard.

The Central NH Region's weather history is summarized to provide a view of the trends around the Concord area where some weather measurements have been taken at the Concord Airport since **1868**. Although Henniker is geographically close to the City of Concord (within **15** miles) and these measurements should have some reasonable basis in Henniker, small unique microsystems are found throughout the region, particularly at higher elevations. As the closest large and longest active weather station, and for CNHRPC region continuity, the Concord measurements will be used for Henniker.

Figure 20 displays Concord's average annual temperature (Jan-Dec) between **1940** (**43.7°F**) and **2018** (**47.8° F**) with a mean temperature over the **1940-2018** period of **45.9° F**. The warmest years were **2016** with a **3.4° F** departure from normal, **2012** at **3.4° F** departure and **2010** and **1998** tied with a **2.8° F** departure from normal. As with typical New Hampshire weather, the seasonal temperatures can vary year after year and without obtaining an average, changes are difficult to see. The coolest years were **1972** and **1976** tied at **43.2 ° F**, **1978** at **43.5 ° F**, and **1940** at **43.7 ° F**. The displayed trend line allows a definitive way of averaging all of the temperatures and illustrates an average **+0.3°F** temperature increase trend per decade and the increase of about **2.4 ° F** total during this approximately **80**-year time period in Concord.

Figure 20
Average Annual Temperature for Concord, 1940-2018



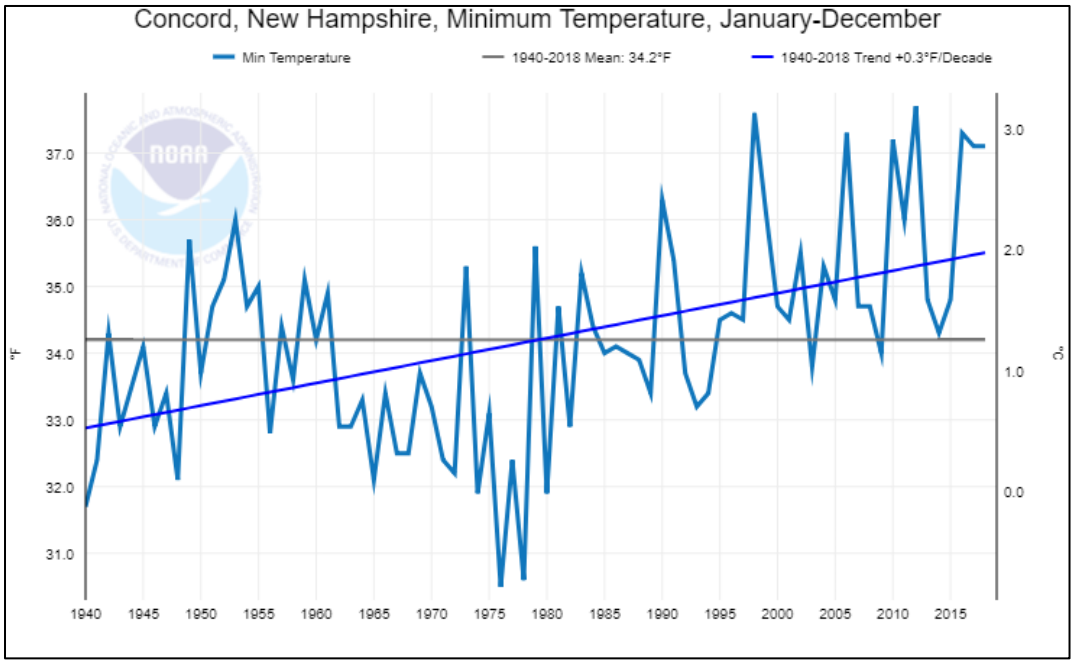
Source: National Oceanic and Atmospheric Administration https://www.ncdc.noaa.gov/cag/city/time-series/USW00014745/tavg/12/12/1940-2018?base_prd=true&firstbaseyear=1939&lastbaseyear=2018&trend=true&trend_base=10&firsttrendyear=1939&lasttrendyear=2018 *, last accessed online 03-11-19*

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

Figure 21 displays the *minimum* average temperatures for Concord, with a mean (average) of **34.2° F** for **1940-2018**. In **2018**, the *minimum* average temperature was **31.7° F**, equal to the **1940** temperature of **31.7° F**. The lowest minimum was **55.7° F** in **19xx**, followed by **55.7° F** (**19xx**), **55.7° F** (**19xx**), **55.7° F** (**19xx**), and **55.7° F** (**19xx**). The highest *minimums* were in **2012** (**37.7° F**), **1998** (**37.6° F**), tied in **2006** and **2016** (**37.3° F**), **2010** (**37.2 ° F**), and tied in **2017** and **2018** (**37.1° F**). In fact, **9** of the top **10** highest *minimums* occurred since **1990** during the nearly **80**-year data span, indicating the coldest temperatures are growing warmer.

Figure 21

Minimum Average Temperatures for Concord, 1940-2018

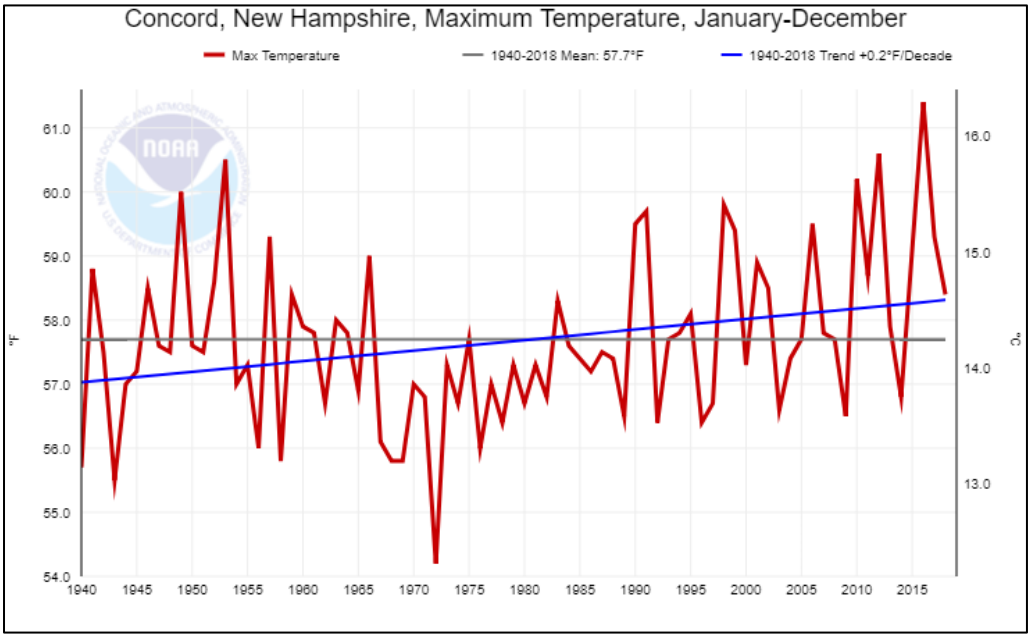


Source: National Oceanic and Atmospheric Administration, last accessed online 03-11-19

Figure 22 displays the *maximum* average temperatures between **1940-2018**, with a mean (average) of **57.7° F** annually. In **1940**, highest *maximum* average temperature was **55.7° F**, while in **2018** the highest *maximum* was **58.4° F**. The lowest *maximums* were in **1972** (**54.2° F**), **1943** (**55.5° F**), **1940** (**55.7° F**), and tied in **1958**, **1968** and **1969** (**55.8° F**). The highest *maximums* in Concord were in **2016** (**61.4° F**), **2012** (**60.6° F**), **1953** (**60.5° F**), and **2010** (**60.2° F**). Eight (**8**) of the top **10** highest *maximums* occurred since **1990** during the nearly **80-**year data span. These numbers indicate the hottest temperatures in the Central NH Region are growing warmer.

Figure 22

Maximum Average Temperatures for Concord, 1940-2018

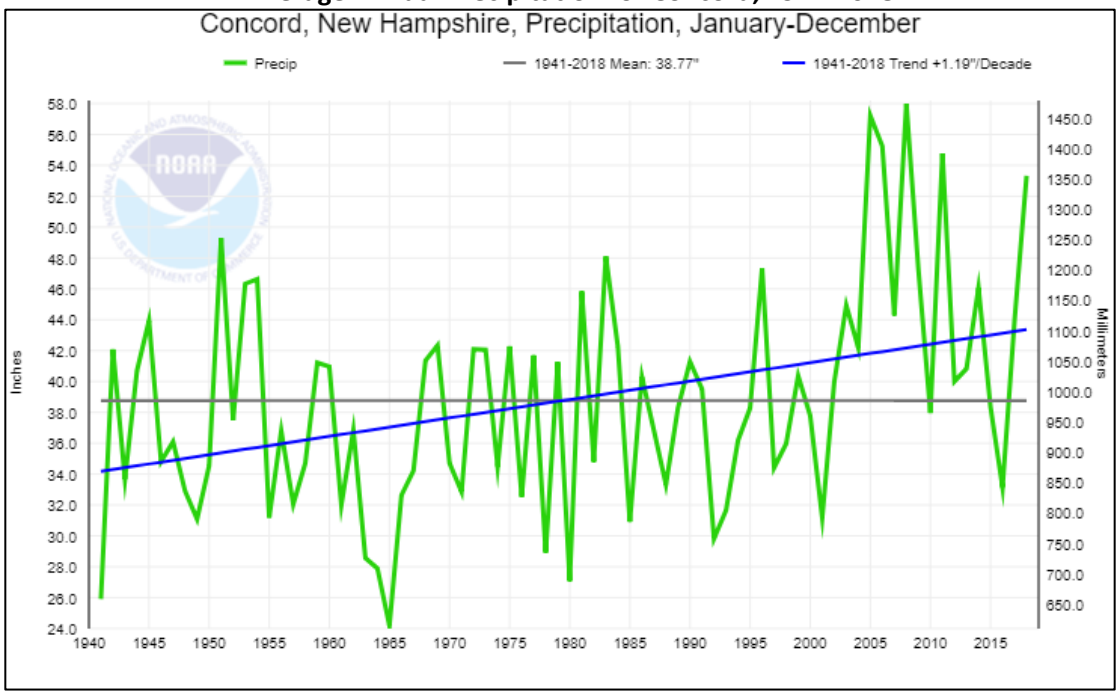


Source: National Oceanic and Atmospheric Administration, last accessed 03-11-19

For precipitation (rain) changes, **Figure 23** displays Concord's average annual Jan-Dec precipitation rates between **1941** and **2018**. Varying seasonal rainfall amounts continue over the decades. The mean annual precipitation during this period is **38.77"** annually. In **1941**, the amount of precipitation was **25.91"** while in **2018** the total was **53.33"**. The wettest year in Concord was **2008** at **58.0"**, followed by **2005** at **57.22"** and **2006** at **55.24**". The years with the least amount of rainfall were **1965** (**24.19"**), **1941** (**25.91"**), and **1980** (**27.07"**). The trend line serves the same purpose to illustrate an increase of **1.19"** in precipitation per decade, or about **9.5"** overall, during this nearly **80**-year time period from **1941-2018** in Concord. Henniker will have experienced very similar conditions.

Figure 23

Average Annual Precipitation for Concord, 1941-2018

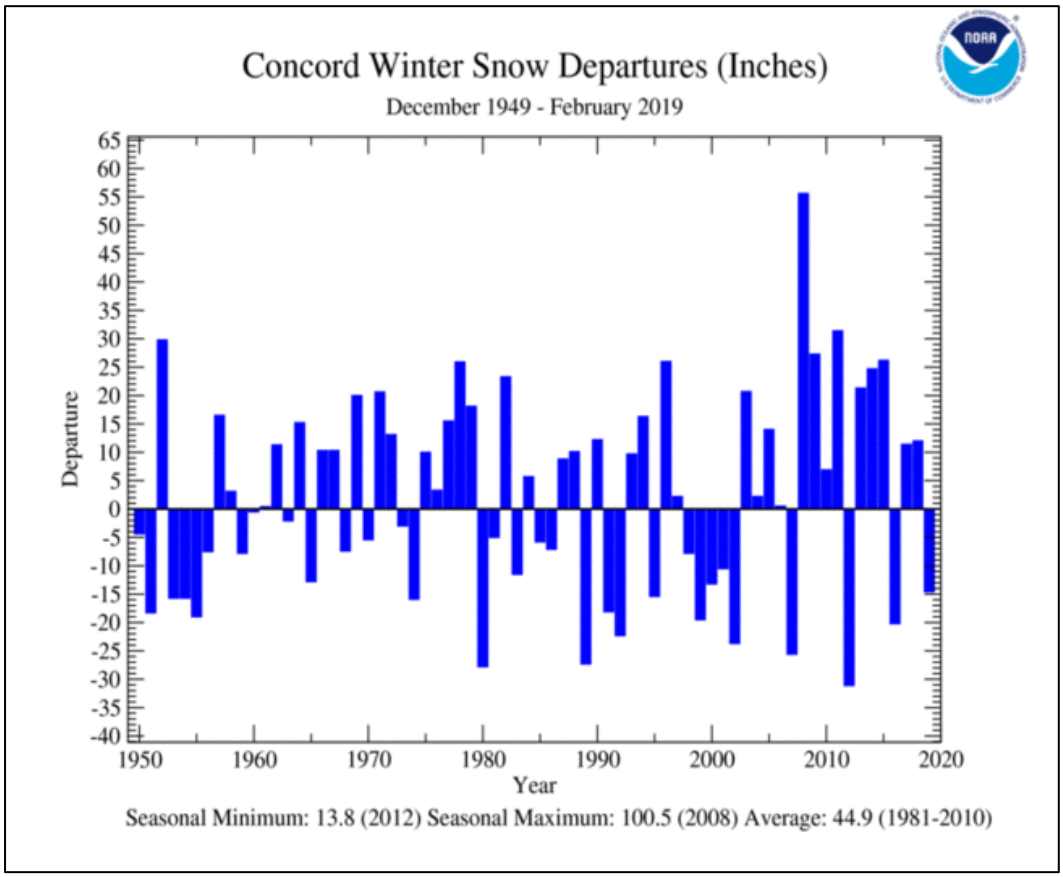


Source: National Oceanic and Atmospheric Administration, last accessed 03-11-19

Displayed in **Figure 24** is the departure from normal snowfall instead of actual inches per year, using a "**30-**year normal" period as the baseline, which for **1981-2010** is **44.9"** of snowfall annually in Concord.

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

Figure 24
Concord Winter Snowfall Departure from Average, 1949-2019

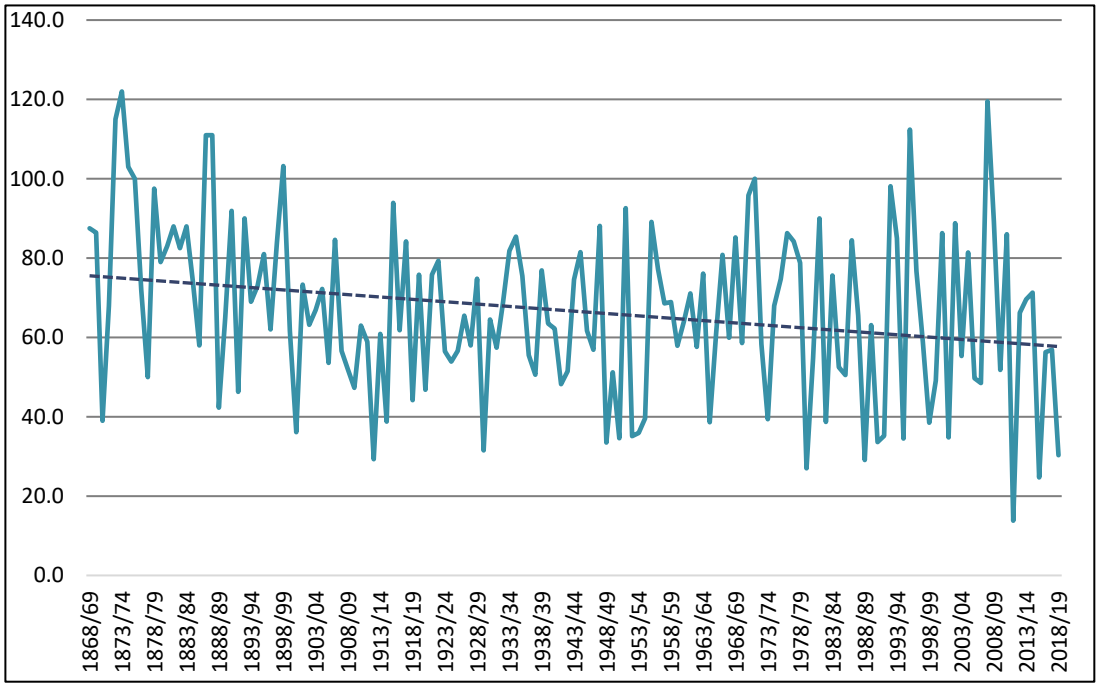


Source: National Oceanic and Atmospheric Administration, National Climate Report February 2019
https://www.ncdc.noaa.gov/sotc/national/201902/supplemental/page-2 last accessed 03-11-19

The National Oceanic and Atmospheric Administration (NOAA) seasonal snowfall totals were compiled by CNHRPC for Concord, where snowfall data gathering began in **1868**. Figure 25 displays the snowfall every **5** years and includes a trendline that indicate annual seasonal snowfall has decreased by nearly **20"** since **1868**. The years with the highest snowfall accumulations were **1873/74** (**122.0"**), **2007/08** (**119.5"**), **1872/73** (**115.0"**) and **1995/96** (**112.4"**). The years of lowest accumulations were **2011/12** (**13.8"**), **2015/16** (**24.7"**), **1979/80** (**27.0"**), and **1988/89** (**29.1"**).

Figure 25

Seasonal Snowfall Totals for Concord, 1868-2019



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

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

IMPACTS OF CLIMATE CHANGES IN SOUTHERN NEW HAMPSHIRE

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

The Southern NH Climate Change Assessment, formally entitled ***Climate Change in Southern New Hampshire: Past, Present, and Future, 2014*** by Climate Change Solutions of New England under the University of New Hampshire, reviewed current climate conditions and projected future conditions of Southern New Hampshire under potential low and high emission scenarios. The Central NH Region and the Town of Henniker are within southern New Hampshire. The past and future Southern NH climate overview is illustrated in **Figure 26**.

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

Figure 26

Southern NH Climate Assessment Projections

Past Data and Future Climate Overview

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, 2014

More Human Health Emergency Events

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

Natural Environment Disruption

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

Declining Forest Health

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

Fewer Recreation Opportunities

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

Risks to the Built Environment

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

Increasing Municipal Transportation Systems Maintenance Needs

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

Aging and Inadequate Stormwater Infrastructure

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

Decreasing Water Resources

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

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

Changing Food and Agriculture Production

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

This is a sampling of how changing climate and severe weather impacts can affect communities in New Hampshire, in the Central NH Region and in Henniker. 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**.

Henniker's Hazard Vulnerability Changes Since the 2014 Plan

The locations of where people and buildings are concentrated now or where new lands may be developed have been considered as compared to the changing locations of potential natural hazards in order to best mitigate potential property damage, personal injury or loss of life. These factors assist the community with determining whether Henniker's vulnerability to natural hazard events has changed in any way since the **2014 Plan**. Facilities and their locations with vulnerabilities to specific natural hazards are listed in **APPENDIX A Critical and Community Facilities Vulnerability Assessment**.

There have been moderate population and housing increases over the last **5** years from **2 COMMUNITY PROFILE**, but aging citizens and individuals with access and functional needs require more services and attention. Traffic continues to increase within Town because of NH 114 and NH 9/ US 202 through Henniker and its exit ramps, with commuters seeking faster travel time. New England College continues to be a successful higher learning opportunity and the number of students and facilities have grown. The need for volunteers increases annually as younger people are not joining Town Boards and Committees. Membership in the Capital Area Fire Mutual Aid (CAFMAC) Dispatch has enabled for faster emergency response for Fire and Rescue needs. The Town has access to the Central NH Hazardous Materials Response Team and the Central NH Special Operation Unit (formerly known as a SWAT team) for special incidents, and has more training opportunities available. Membership in the Capital Area Public Health Network enables organized public health assistance while membership in the NH Public Works Mutual Aid program enables shared Highway Department labor and vehicles from across the State during times of need.

The Town's Statements of Vulnerability Change

2019

Natural Disasters The Town's overall vulnerability to natural disasters **is believed to have INCREASED over the last 5 years** with its increasing population and aging population, the changing climate and weather impacts, and continuing disasters and hazard events.

Changing Climate

The Town is experiencing increasing temperatures, more rain, less snow, and storms are bigger. The frequency of torrential downpours has increased which impacts waterbodies and the Contoocook River, brooks, and waterway, often flooding gravel roads, ditches, and drainage systems. The rain that is unable to run off in the cold months or during the torrential downpours washes out many of the **74** miles of Town maintained roads (**46** miles of paved roads and **28** miles of gravel roads). Increased traffic accidents result from the weather and road conditions. The US Army Corps of Engineers continues its monitoring of the Contoocook River and Flood Control Reservoir conditions.

When the normal 4- season climate varies, Henniker's businesses (restaurants, inns, recreation businesses) which economically rely on the Contoocook River and Pat's Peak for recreational tourism dollars are negatively impacted. The unpredictable weather has brought more rain and washouts, more significant and damaging weather events to an infrastructure (roads, water, wastewater) which is aging, unable to keep pace with maintenance and population growth service demands, and cannot be replaced or improved without increased funding.

Changing Town Demographics and Housing

The Town is at greater risk from not only the natural hazards, but also from the changing population characteristics in Henniker. The lovely remote but accessible community attracts retired people because of its location to both quiet streets and nearby services. The younger generation leaves the local school system for college and greater employment opportunities and does not often return to the Town after completing their college degrees. Henniker housing is too expensive and jobs are not available for highly educated young people. Trends are noticed of some of the younger generation beginning a family then returning to Henniker to live with their parents to obtain support while their children are young.

The townspeople are aging, with its young people leaving Town after high school. Senior programming at White Birch is growing at 18% per year, indicating a consistently aging-in-place population. The Town continues a very strong volunteer ethic for Town Committees and Boards and organizations. The older volunteers of the Town, when they retire, are not being replaced with younger volunteers. The existing volunteers have been in place for many years and often feel they cannot leave their positions because there is no one available to take their place.

While population has increased, more non-affordable homes have been built to attempt to fulfill this housing need. More college students are staying year round as they obtain their degrees in old, non-maintained low-income apartments often owned by absentee landlords. There is a distinct lack of investment in existing student housing which may lead to undesirable, hazardous conditions in the future.

New England College is growing, constructing new buildings, attracting more students, and in turn, changing the identity of Henniker. The growing Downtown area and college population bring more risks to this high density area – crashes, human disturbance, potential for fire, and more. Walking and bicycling from student housing results in more street crossings along the confusing Bridge Street and Maple Street intersection and along Main Street, and a greater potential for vehicle-pedestrian/bicycler crashes arises.

Changing Economics

Years when the economy is good, both and housing and business development will occur. In the Town, commercial and industrial use are resisted despite the tax dollars brought to the community. Repetitive Town administration staff turnover means no one is available to consistently follow through on these issues or to lead many of the potential mitigation projects. When the economy has fallen, many businesses have shut down, resulting in fewer jobs and fewer taxes paid. Most established businesses continue to grow and flourish. Many businesses in Town bring risk of hazardous materials incidents or fire because of the nature of their businesses or materials onsite.

There are many employment opportunities available in Henniker, although most commute using NH 9/ US 202 or NH 114 to employment in Concord, Hillsborough, Lebanon, Manchester, or points beyond or between. Yet continued high local tax rates prevent voters from choosing to set money aside for long-term mitigation planning projects.

Changing Infrastructure

With an older fixed income population, the Town of Henniker is unable to raise taxes for mitigation projects and is unable to provide the appropriate services to better meet the needs of natural hazard challenges. There has not been enough funding available to adequately upgrade the Town road network of **74** miles (**46** miles of paved roads and **28** miles of gravel roads). Other Department infrastructure encounter similar problems. Mitigation Actions have been developed for many aspects of Town infrastructure yet there was not enough funding or the staffing capability to see many of the projects through.

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

Nor was there enough funding available to appropriately upgrade the Wastewater Treatment Plant infrastructure necessary for safe and adequate function. The age of the facility's machinery, increasing usage of the WWTP, and lack of major upgrades over the last several years has meant the facility may not have been able to function as needed during a large disaster event, which has not occurred in Henniker since the **2014 Plan**. The budget permits replacing smaller items, but major upgrades needed to replace the wear and tear on the facility cannot occur. An Asset Management Program has been developed but is not yet implemented because of its high expense.

For all Departments, budgets are extremely limited for infrastructure upgrades. Each Department has their own Capital Improvements Program but the funding is not available to make the required improvements.

The burden on the Town's aging infrastructure is increasing with no end in sight. Henniker has no red listed bridges which is a positive, but the high upkeep and rehabilitation costs of Town roads, buildings, and utilities including wastewater, and the services provided by Departments are too high to be sustainable. Not enough funding and taxation are available to repair the existing infrastructure, and thus the Town is unable to be proactive. As a result, most of Henniker's infrastructure ages **5** years with every **Plan**.

Natural Hazards Protection and Vulnerability

Despite these risks, Henniker **is also better protected now than in the past**. These protections arise from select infrastructure and service improvements to past vulnerable areas, identified and mitigated where feasible by the Highway Department, Emergency Management, Police Department, Fire and Rescue Department, and Town Administration, as assisted by New England College, the State of New Hampshire, and memberships agreements with organizations and neighboring towns for aid. Because the Town feels it will be unable to meet funding, personnel, and volunteer needs for future natural hazard events and the situations described previously, the vulnerability to natural hazards has increased from **2014** and is anticipated to continue increasing to **2024**.

2019

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

Human Hazards

Human hazards are unpredictable to a large degree, but preparedness can enable faster, more appropriate emergency response. The New England College and the School District conduct drills and develop improved Standard Operating Procedures annually. The Town emergency response (Emergency Management, Fire, Rescue & Police) often participates. All regularly participate in the newest training related to human hazards.

The Fire and Rescue Department calls have increased to the point of increasing the per-call billing to accommodate the service provided to people in Town. The Police

Department call volume in general has increased since **2014** and reports about **50%** of their calls relate to mental health concerns. More human hazards, especially these mental health concerns, have been experienced in the Town especially at the Henniker Community School and New England College (NEC). Emergency response and law enforcement visits have increased dramatically and a change in student attitude has been noticed. The increased use of social media is believed to increase the volatile situations and bullying handled by emergency response personnel. There are issues with copy-cat situations, and protective "red flag laws" restricting gun access are not in place in New Hampshire. Firearm permits issued increased, but not to an alarming extent, but the pistol permit was eliminated and now is unable to be tracked along with the other types of firearms sold.

Stress on the general Henniker population has increased as noticed by Departments and the School District. Mental health issues need to be addressed. At the White Birch Center, parent stress levels have been observed to be higher than ever. Higher can stress result in human hazard events such as active shooter, kidnapping, hostage situations, civil disturbance, or public harm.

Technological Hazards

The Wastewater Department and Cogswell Spring Water Work Department are safe from cyber-attack because their systems are not automated by computer.

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

Human and Technological Hazards Protection and Vulnerability

The Town itself is better protected from human hazards by partnerships among Town Department, New England College, Henniker School District, mutual aid agreements, and emergency response and membership with the Capital Area Fire Mutual Aid Compact (CAFMAC). However, with all factors considered, the Town's vulnerability to these hazards have increased.

FUTURE DEVELOPMENT IN HENNIKER

Most of the town's roads and homes are located in remote locations, and some were newly constructed after the **2014 Plan**. Henniker is located in a unique area which is accessible to a primary NH 9/US 202 State highway, has **a** vibrant, growing Downtown yet remains highly rural outside of this area. Residents are aging, and adults who are employed either work in Town or commute along NH 114 or NH 9/ US 202 to Concord, Hillsborough, Manchester, or Lebanon or points within or beyond. Since much of the easily developable land in Town has already been built or subdivided, these newest developments will built on **wetlands** or **steep slopes** or at high elevations, or along gravel hilly roads with ditching. **Floods**, **landslides**, **erosion**, and **fires** could occur in these residential areas. **Severe winter weather**, **storms** and **wind events** on these hilly locations will bring trees down on roadways, interrupt **power and communication** services and will **flood** ditches and **washout** roads.

Many large businesses are located in Henniker, and more subdivisions are anticipated.

Should additional **large-scale housing** development occur in Henniker eventually, although the remote locations are often protected with dry hydrants against severe impacts of **wildfire** and **lightning**, the housing could be vulnerable to **severe winter weather**, **storms**, and **flooding of local roads.** There remains the potential for a great number of subdivisions in the future when the lots change hands to younger generations ("legacy parcels") if the largest parcels are not placed under conservation.

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

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

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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 **Henniker Hazard Mitigation Plan 2014**.

The identification of Critical and Community Facilities within Henniker 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 Henniker is provided in **APPENDIX A Critical and Community Facilities Vulnerability Assessment**. The ***911 Street Address*** and ***Phone*** number of each facility is supplied, the assessed ***Structure Replacement Value $***, and the ***Primary Hazard Vulnerabilities*** to which the facility is most susceptible are listed. The hazards identified are primarily natural disasters but regularly include the technological (and secondary disasters) such as power failure and communications systems failure as well as human hazards such as vandalism/ sabotage.

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

Potential dollar losses for each of the facilities' ***Structure Replacement Value $*** (not land) have been obtained through the Dec 2018 assessment to provide a starting point of the financial loss possible should these structures become damaged or require replacement. These community facility losses are estimated for the value of structure and does not include land (unless indicated), contents, or infrastructure.

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

Potential dollar losses to buildings in the Henniker 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**:

Facility Name	Street Address (911)	Phone	Structure Replacement Value* $	Primary Hazard Vulnerabilities

Critical Facilities

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

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

Essential Facilities include: Charles E Damour Wastewater Treatment Plant, Cogswell Springs Water Works (office), Fire Department (EOC) and Henniker Rescue Squad, Highway Department, NH DOT District 5 Shed, Police Department, Town Hall (1769 Meeting House) [NO generator], Transfer Station. **Assessed structure (only) valuation for these essential facilities total $2.9m.**

Utilities include: TELECOMMUNICATIONS TOWERS: Lester Lane Communications Tower (1), Old Hillsboro Road Communications Tower (1), Flanders Road Communications Towers (3). DRY HYDRANTS: Dodge Hill Road at Brook, Pat's Peak Pump at Craney Pond, Emerson Way at Pond, Flanders Road, French Pond Boat Launch, Newton Road at Brook, Old Concord Road at Amey Brook, Liberty Hill Road, Old Concord Road at Keyser Pond, Old Hillsboro Road at Brook, Plummer Hill Road at Pond, Quaker Street, Ray Road at Upper Pond, River Road Contoocook River Boat Launch at Brook, Rush Road at Amey Brook, Long Pond to Mill Pond at Brook. CISTERNS: Bennett Road Cistern 30,000 gallons, Mount Hunger Road Cistern (HHP). ELECTRIC LINES: Eversource Electric Lines. MUNICIPAL: Wastewater Treatment Underground Lines, Wastewater Pumping Station in West Henniker [has generator], Wastewater Pumping Station on Main [has generator], Cogswell Springs Water Works Tank #1 at Patterson Hill, Cogswell Springs Water Works Tank #2 (500,000 gallon) at Davison Road, Cogswell Springs Well #1 (not use) at Foster Road, Cogswell Springs Wells #2 & #3 at Weare Road. TDS SWITCHING STATION (INTERNET & PHONE): Lester Lane, Dodge

Hill Road, Rush Road, Patterson Hill Road, Western Avenue. OTHER: Intervale Airport at Elm Street, Craney Hill Fire Tower (vacant, NHDHCR) at Lester Lane. **Assessed values for these utility structures (without electric lines) in Town total $8.6m.**

Dams include: **1** High Hazard (**H**) Dam- 116.04 Jackman Reservoir Dam in Hillsborough (North Branch of Contoocook River). **2** Low Hazard (**L**) Dams- 114.21 Pat's Peak Dam Whisper Impoundment (Chase Brook Tributary), 114.24 Pat's Peak Dam (Unnamed Brook). **7** Non-Menace (**NM**) Dams- 114.05 Amey Brook (Amey Brook Tributary), 114.08 French's Pond Brook Fish Screens (Contoocook River Tributary), 114.09 Fish Pond Dam (Colby Brook), 114.13 Siltation Pond Dam (Runoff), 114.14 Nichols Pond Dam (Nichols Pond), 114.16 Alan Michie Dam (problems with siltation of Chase Brook when breach), 114.17 Furness Farm Pond (Unnamed Brook). **Estimated structure (only) repair values for these dams total $4.5m**.

Bridges include: **1** CLOSED BRIDGES- 165/051 (Town)- Colby Crossing Road over Old RR Bed. **7** TOWN BRIDGES: 072/103 on Old Hillsboro Road over unnamed brook, 095/101 on Western Ave over Contoocook River, 096/105 on Western Ave over canal, 097/101 Historic Bridge on Patterson Hill Road over Contoocook River, 123/106 Leatherboard Bridge on Ramsdell Road over Contoocook River, 144/095 on Bennett Road over Chase Brook, 149/111 on Old Concord Road over Amey Brook. **9** STATE BRIDGES: 083/101 on US 202, NH 9 over unnamed brook, 087/105 on Old Hillsboro Road over US202 & NH 9, 099/156 on NH 114 over Amey Brook, 101/116 on US202/NH9 over Liberty Hill Road, 118/124 Russell Durgin Memorial Bridge on NH 114 over US 202/NH9, 120/112 Edna Dean Proctor Bridge on NH 114 over Contoocook River, 125/125 on US 202/NH 9 over Rush Road, 126/128 on Warner Road over Amey Brook, 131/124 on US 202/NH 9 over Amey Brook. **Estimated structure (only) rehabilitation values for these** 24 **bridges total $29.3m**.

Shelters, Schools, and Medical Facilities include: Community Center - Secondary Town Shelter [NO generator], Dr. David Lewis Chiropractic Services, Dr. Roger Belson Internal Medicine, Grange Hall - Secondary Town Shelter [NO generator], Henniker Community School [**~415** children, **~100** staff] Primary Town Shelter [has generator], Henniker Pharmacy, Henniker Veterinary Hospital, NEC Wellness Center at Hill House, New England College [up to **~1,200** students housed on campus, **~40** staff], Pats Peak First Aid Room. **Assessed structure (only) valuation for these schools, medical facilities and shelters total $34.3m.**

PROBLEM STATEMENTS AND EVALUATION

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

Essential Facilities Table

- A severe earthquake could damage or break the underground pipes of Cogswell Springs Water Works and Wastewater Treatment Plant. Such an event could be a public health issue because then sewer would not run. Fire hydrants would be also without water for fires.
- The sater line under US 202/9, 30 feet beneath the road, is broken and shut down. Users can still access water since the water is on a loop system so they can obtain water from other direction, but the pressure is lower. This section is not as old as other pipe sections. Fixing this problem is complicated and expensive. The problem may have been caused by an earthquake, but even if not, an earthquake could cause this situation in other locations.
- The wooden, historic Henniker Town Hall is subject to aging infrastructure and is more sensitive to natural hazard events. Power is often lost. In the basement, an old boiler is situated in a small, padlocked room. Access is difficult and the boiler itself might become problematic in the future. Similarly, when performing restorative work on the USACE buildings, the ACE had to work with the NH Division of Historical Resources office to ensure upgrades comply with historic regulations.
- The Town Hall does not have physical barriers for protection of staff and visitors should a human hazard occur (active shooter, hostage, civil disturbance), only panic buttons. Henniker Loss Prevention Committee looked into placing a bullet proof window at the Town Clerk window but was not voted upon.
- *INFO:* Wastewater Dept is completing an inventory, now in draft form, of the Town's wastewater infrastructure. The inventory and plan contain maps, the identified issues to resolve, finances needed to fix these issues, ways to track and maintain new and future improvements. The projected completion is June 2019. The document and data are in paper format only, not digital on a computer.

Utilities Table

- The Craney Hill Towers experience unapproved human activity. People often try to vandalize the Tower, which stores the expensive radio and communications equipment. The Fire Department is evaluating the use of video and audio surveillance to increase response time to the site. Surveillance does not work when power and internet outages occur.

- The TDS Switching Station at Craney Hill Road is often knocked offline by high wind and winter events. They have their own portable generator that their TDS crew places during events.
- The Craney Hill Communications Tower often experiences utility outages from snow, ice, high winds, and debris. The Fire Dept must first shovel a path to the Tower, then bring a portable generator onsite and maintain gasoline for operations to continue. The Tower hosts important local Town Highway, Fire and Rescue, and Police dispatch communications; Capital Area Mutual Aid dispatch for the region, which also carries the redundant backup for Lakes Region Mutual Aid; hosts Merrimack County communications; and the tower is a repeater tower. Access to the site is difficult during winter and is often granted by a property owner on their private road, Corbin Road.. The icy steps during winter are hazardous for staff accessing the facilities but also are dangerous for trespassers.
- Any terrorism or natural contamination of the 1 or 2 Cogswell Springs Water tanks could affect the public health of all downtown businesses, residents using Town water and New England College. One tank could be taken offline if sabotaged and then flushed, with the second tank used in the interim. Town is believed to have safeguards.
- With its proximity to the Contoocook River, the Wastewater Treatment Plant's pumping stations could become flooded. Should this occur, the Downtown's sewer will become unusable and may back up, possibly causing a public health hazard. The Dept has a cell-based alarm system with main control at treatment plant. Even with a pump station flooded, the alarm itself at the Treatment facility office could still sound.
- Water Department is more prone to flooding than Wastewater Department, and Water Dept staff access could be impaired from the flooded driveway. Ramsdell Road floods but Wastewater Dept has access through the back way at the DOT sheds as needed. Flooding or spillage of Wastewater's 55-gallon barrels holding 50% sodium hydroxide is not believed likely. NH 114 area is low and most prone to flooding at Water Dept entrance at Davison Road. Water Dept stores 250-gallon totes of 25% sodium chemicals. Potential floodwaters have never reached the height of flooding at either facility.
- *INFO:* USACE (terrorism) has a series of protection levels based on national threat that also correlate with floodwater levels. One of the first flooding elevation protocols is closing NH 127. Incidentally, with US 202 work in April 2019, the highway is being closed with all traffic rerouting to NH 127 through June 2019. If extreme reservoir flooding occurred during this timeframe, the USACE would have closed NH 127 out of necessity and the traffic would have needed to be rerouted to a third route.

Dams Table

- If the Jackman Dam (aka Pierce Lake Dam) in Hillsborough fails, heavy water will flow up the Contoocook through Hillsborough Village and into Henniker. Western Avenue is the first populated area the floodwaters would reach.
- Beavers can cause flooding and washouts on roads and culverts through their activities. One beaver dam was recently breached and an embankment on Western Avenue was swept away. Although the Highway Department keeps up with regular beaver sites, the Town is large and not all beaver activity is known. The situation is currently calm, but Dept regularly checks in the regular locations. Beavers are in the Contoocook River currently, cutting down trees along the banks, which is problematic. Trapping is more safe than hunting or Town staff removal. A professional company is used by the Town and Army Corps for this purpose.
- *INFO:* Both Hopkinton and Everett dams may be compromised as a result of earthquake. US Army Corps has seismographs checking monthly to see if the underlying bedrock of the dam has been altered to change the integrity of the facility. After a local earthquake, USACE uses a protocol to inspect gates, locking mechanisms, etc. The ACE has two dams in the Hopkinton-Everett Reservoir. If the Hopkinton dam fails, Hopkinton and Contoocook Village would immediately experience the flooding (the Contoocook River flows north to the Merrimack River). If Everett (in Goffstown) dam fails, New Boston and Manchester would be impacted as well.
- *INFO:* Temple Road and its bridge at Chase Brook were repaired from flooding years ago and have not had any flooding problems since. River Road is on the edge of the Contoocook River and the Army Corps closes the road when releasing the reservoir water. Siltation of Chase Brook has occurred when Michie's dam breaches and washes out Flanders Road. There are several beaver dams on Chase Brook.

Bridges Table

- Ice jams are regularly occurring on the Contoocook River on the Western Avenue Bridge and Patterson Hill Road Bridge. No damage was experienced, but the Town watched and waited for the ice approach and melt.
- Flooding of the rivers and streams can occur, with a potential undermining of abutments, from heavy rains. Amey Brook over Old Concord Road Bridge, and Ramsdell Road over the Contoocook are two examples. The Highway Dept is currently upgrading culverts.
- *INFO:* Two sites may be available for additional flood storage capacity. 1) A potential brownsfield property on Western Avenue, which may have lead from old firing range and trapping, has been for sale for years (Lot #380-A). New owners have not wanted the burden of cleaning the land. 2) Another location for potential flood storage capacity is the old west paper mill site by the steel bridges, which

may also be for sale. HMGP funding could be used for acquisition of the firing range because it has a building (as of summer 2019, HMPG funds became available again for potential project funding).

Shelters, Schools and Medical Facilities Table

- Access to the various private doctors in Town for immediate, local medical treatment is not always possible if their offices are closed or the doctors are out of Town.
- No generators: Grange, Community Center, Town Hall, Craney Hill Tower, and Simons Student Center (temporary NEC shelter) & Gilmore Dining Hall at NEC.

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 2019**. 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 Henniker has hundreds of culverts and is not known to have a mapped inventory. The Highway Department maintains **2-3** culverts daily (debris removal, clearing, repairs) and attempts to keep pace with culvert upgrades. Yet with nearly **150** roads in Town, **75** miles of which are under Town maintenance, upgrading all of the culverts that require this action would be infeasible even if the Town had the budget and staffing available to do so.

Table 33 displays Henniker's initial listing of culverts in need of most urgent upgrade and approximately when the upgrades should occur. The intent is to upgrade all of these failing culverts with either open box culverts or appropriately-sized PVC culverts, respectively. The estimated cost for all of these projects reaches about **$72,000** for materials, permitting, study and design. Labor for the smaller projects is performed by Town staff and is usually considered an in-kind cost. For larger projects, contracted engineering, design and permitting may need to occur and would be included in the respective cost estimates. The optimal timeframe for these upgrades to protect the Town from **Inland Flooding**, **River Hazards** and **Aging Infrastructure** is between **2019-2024** which is within the span of this **2019 Plan**.

Table 33

Town-Owned Culverts in Need of Upgrade

Action #	Location of Culvert(s) to Upgrade	# of Culverts	Intersecting Watercourse	Issue(s) with the Culvert(s)	Upgrade Diameter *Inches*	Estimated Upgrade Year	Total Approx $ Cost for All
#41-2014	**Butter Road**	3	Drainage	Change from steel and cement to pvc. Upgrade from 12" to 24"	24"	2020-2021	$2,500
#42-2014	**Mount Hunger Road**	2	Drainage	Change from steel and cement to pvc. Upgrade from 12" to 24"	24"	2020-2021	$1,500
#45-2014	**Flanders Road and Gulf Road**	3	Unnamed brook	Unable to handle heavy runoff and rain leading to road damage, and in severe storms, road closures	Upgrade sizing	2020-2021	$3,000
#47-2014	**Ray Road**	3	Drainage	Change from steel and cement to pvc. Upgrade from 12" to 24"	24"	2020-2021	$2,000
#49-2014	**Rush Road**	5	Drainage	Change from steel and cement to pvc. Upgrade from 12" to 24"	24"	2020-2021	$3,000
#50-2014	**Colby Hill Road**	1	Drainage	5' metal culvert has bottom rusting out. HD to look at sleeving as an option, or a pre-fab concrete box culvert	Upgrade sizing	2022-2023	$15,000
#51-2014	**Craney Hill Road**	5	Drainage	Much work is necessary on Craney Hill Rd due in part to large 2012 washout. Existing culverts to upgrade range from 24" - 36".	Upgrade sizing	2020-2021	$4,000
#52-2014	**River Road**	8	Contoocook River tributaries	Change from steel and cement to pvc. Upgrade from 12" to 24"	24"	2022-2023	$4,000
#53-2014	**Hemlock Corner Loop**	3	Drainage	Change from steel and cement to pvc. Upgrade from 12" to 24"	24"	2022-2023	$2,000
#54-2014	**Western Avenue**	11	Contoocook River tributaries	HD upgraded 21 culverts from Bridge to Cote Hill Road in Spring 2016. 11 more 24" pipes to go	30"	2020-2021	$20,000
#55-2014	**Dodge Hill Road**	10	Drainage	Change from steel and cement to pvc. Upgrade from 12" to 24"	24"	2022-2023	$15,000
	Totals						**$72,000+**

Source: Henniker 2019 Mitigation Action Plan, Highway Department Road Agent April 2019

This table can help the Town develop a formalized culvert upgrade and maintenance planning document. Mapped drainage facilities permits 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 more clear and may be more successful at Town Meeting with such a plan.

All of the culverts listed in **Table 33** have been developed into **Mitigation Action Plan** items in **8 MITIGATION ACTION PLAN**.

MOST VULNERABLE ROADS AND NEIGHBORHOODS

The Town of Henniker has about **131** miles of roadway including Town maintained Class V (both paved and unpaved roads), unmaintained Class VI roads, private roads and State highways. Many of these roads are remote, have significant elevation changes, or are dead-end roads or cul-de-sacs with only one way in and one way out. The majority of Henniker residents reside outside of the Downtown area. When trees and powerlines fall down on roads or flooding or wildfire hazards are occurring, evacuation of many of these neighborhoods would be difficult. The Town's road mileage, classification, and surface type are displayed in **Table 34**.

Table 34

Town Road Length and Classification

Henniker Roads Classification	Total Length in Miles	Total Length in Feet	Miles Paved	Miles Unpaved
Town Class V	**74.17**	391,617.6	46.40	27.77
Town Class VI (not maintained)	**22.85**	120,648.0	2.13	20.71
Private	**14.83**	78,302.4	0.30	14.53
State	**19.31**	101,956.8	0.00	19.31
Road Length Totals	**131.16**	**692,524.8**	**48.83**	**82.32**

Source: CNHRPC compilation of data from NH Department of Transportation GIS Road Network Geodatabase, July 2019

The Town of Henniker is responsible for over **74** miles of Town owned roads, of which **46** miles are paved and **28** miles are unpaved. Compared to other medium-sized Central NH region communities, the Town of Henniker hosts higher than average roadway miles.

Excerpted from **APPENDIX F Road Data**, **Table 35** displays the main **78** roads in Henniker with perhaps the greatest vulnerability to natural, human and technological hazards because of their length, surface, the number of homes/density, and any specific hazard concerns. Roads with over **20** homes are denoted with pink highlight, while unpaved roads are denoted with brown highlight. Roads over **1.0** mile in length are denoted in blue. **Table 35 does not depict every road in Henniker**, since there are about **150** roads.

KEY for Table 35

Roads over 1.0 miles in length	**Unpaved Road**	**Town road maintenance responsibility (Class V)**
Over 20 homes or large non-residential facility on the road	**Paved/Unpaved Road**	**Town road maintenance responsibility (Class V) shared with Class VI unmaintained, private, or State roads**
*** indicate roads that washout regularly**		

Table 35

Roads with Greatest Vulnerability to Hazard Events

Henniker Road Name	Total Length in Miles	Total Length in Feet	Road Classification (s)	Surface Type	Specific Hazard Concerns Where Noted	Approx Number of Homes or Vulnerable Units (10+)	Vulnerable Neighborhood or Facilities
Bacon Road	**1.2**	6,193	Class V Local	Paved	Flood	About 27 homes	Bacon Road
Bear Hill Road	**2.5**	13,295	Class V Local	Paved/ Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	About 7 apartments, 26 homes	Aucoin Farms Apartments
Bennett Road	0.7	3,495	Class V Local	Paved	Flood	About 10 homes	Cistern
Birchwood Terrace	0.1	433	Class V Local	Paved	------	Up to 60 units	Birchwood Terrace Neighborhood
Bradford Road (NH 114)	**3.1**	16,241	State	Paved	Flood, Wind, Winter, Crash	About 30 homes & businesses	Bradford Road
Bridge Street (NH 114)	0.3	1,410	State	Paved	Flood, Crash	NEC campus	New England College
Browns Way	**2.4**	12,762	Class VI Not Maintained	Unpaved	Flood. Many buildings in the SFHAs	About 17 homes or businesses	Browns Way
Butter Road*	**1.2**	6,225	Class V Local	Unpaved	Erosion, Flood, Winter, Wind, Lightning, Wildfire	10 homes	Butter Road
Buxton Industrial Drive	0.4	1,969	Private	Unpaved	Hazardous Materials (??)	No homes, business only	Buxton Industrial, Michie Corp, HHP
Checkerberry Lane	0.2	1,130	Class V Local	Unpaved	Wind, Winter	Up to 15 units	Checkerberry Lane
Chelsea Court	0.2	1,146	Class V Local	Paved	Wind, Winter	About 15 homes	Chelsea Court
Circle Street	0.2	1,209	Class V Local	Paved/ Unpaved	Wind	No Homes, NEC only	New England College
Colby Crossing Road*	0.5	2,492	Class V Local	Paved	Flood, Erosion, Wind, Winter, Wildfire	About 10 homes	Colby Crossing Road
Colby Hill Road*	**3.7**	19,531	Class V Local & Class VI Not Maintained	Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	About 19 homes	Colby Hill Extension
Cote Hill Road	0.7	3,833	Class V Local	Paved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	15 homes	Cote Hill Road
Craney Hill Road	**2.8**	14,805	Class V Local & Class VI Not Maintained	Paved/ Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	38 homes	Pats Peak
Craney Pond Road	**2.7**	14,098	Class V Local & Class VI Not Maintained	Unpaved	Erosion, Flood, Winter, Wind, Lightning, Wildfire	13 units, homes or businesses	Craney Pond Road
Crescent Street	0.2	1,051	Class V Local	Paved	------	25 homes/units	Crescent Street
Cressey Street	0.2	824	Class V Local	Paved	------	18 homes	Cressey Street
Davison Road	**1.1**	5,560	Class V Local	Paved	Flood, Wind, Winter	15 homes	Davison Road

Henniker Road Name	Total Length in Miles	Total Length in Feet	Road Classification (s)	Surface Type	Specific Hazard Concerns Where Noted	Approx Number of Homes or Vulnerable Units (10+)	Vulnerable Neighborhood or Facilities
Deer Run Road	0.2	1,199	Class V Local	Paved	Erosion, Wind, Winter	10 homes	Deer Run Road
Depot Hill Road	0.8	4,097	Class V Local	Paved	Elevation, Flood, Erosion, Wind	10 homes	AGS Services, New England College
Dodge Hill Road*	**2.9**	15,528	Class V Local	Paved/ Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	40 homes	Dodge Hill Road
East Side Drive	0.3	1,368	Private	Unpaved	Wind	130 camp sites	Mile Away Campground
Elm Street	0.6	3,052	Class V Local & Class VI Not Maintained	Paved	Flood, Erosion, Wind, Winter, Wildfire	6 homes	Intervale Airport
Evergreen Circle	0.3	1,800	Class V Local	Paved	Wind, Lightning, Winter	About 20 homes	Evergreen Circle
Fairview Avenue	0.4	1,874	Class V Local	Paved	Wind, Lightning, Winter	30 homes	Fairview Avenue
Flanders Road	**2.0**	10,470	Class V Local	Paved	Elevation, Erosion, Landslide	55 apartments, 12 homes	Henniker Knolls Affordable Housing Neighborhood
Foster Hill Road	**1.3**	7,033	Class V Local	Paved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	39 homes	Foster Hill Road
Freeman Colby Road	**2.4**	12,635	Class V Local & Class VI Not Maintained	Unpaved	Flood, Erosion, Wind, Winter, Wildfire	10 homes	Freeman Colby Road
French Pond Road	**1.2**	6,262	Class V Local	Paved/ Unpaved	Flood, Erosion, Wind, Winter, Wildfire	15 homes	French Pond Road
French Road	0.9	4,726	Class V Local	Unpaved	Erosion, Wind, Winter	10 homes	French Road
Goss Drive	0.3	1,700	Class V Local	Paved	Wind, Lightning, Winter	15 homes	Goss Drive
Gould Pond Road	0.5	2,856	Class V Local	Unpaved	Flood, Erosion, Wind, Winter, Wildfire	12 homes	Gould Pond Road
Gould Street	0.2	972	Class V Local	Paved /Unpaved	Wind, Lightning, Winter	12 units, 3 homes	Gould Street
Grove Street	0.3	1,806	Class V Local & Class VI Not Maintained	Unpaved	Flood, Erosion, Wind, Winter, Wildfire	No Homes, NEC only	New England College
Gulf Road*	**1.3**	6,980	Class V Local	Paved	Flood, Erosion, Wind, Winter, Wildfire	10 homes	Gulf Road
Hall Avenue	0.5	2,603	Class V Local	Paved	Wind, Lightning, Winter	36 units, 20 homes	White Birch Center, Ayer and Goss
Hemlock Corner Loop*	**2.3**	12,044	Class V Local	Paved	Flood, Erosion, Wind, Winter, Wildfire	10 homes	Hemlock Corner Loop
Highland Drive	**1.2**	6,547	Class V Local	Paved	Wind, Lightning, Winter	25 homes	Highland Drive

Henniker Road Name	Total Length in Miles	Total Length in Feet	Road Classification (s)	Surface Type	Specific Hazard Concerns Where Noted	Approx Number of Homes or Vulnerable Units (10+)	Vulnerable Neighborhood or Facilities
Hillside Drive	0.6	3,252	Class V Local	Paved/ Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	53 homes	Hillside Drive
Juniper Road	0.5	2,714	Class V Local	Paved	Wind, Lightning, Winter	15 homes	Juniper Road
Lester Lane	0.4	2,149	Private	Unpaved	Erosion, Wind, Winter	No homes	Craney Hill Fire Tower, radio comm
Liberty Hill Road*	**4.0**	21,358	Class V Local & Class VI Not Maintained	Paved /Unpaved	Flood, Elevation, Erosion, Winter, Wind, Lightning, Wildfire. Many buildings in the SFHAs	40 homes	Liberty Hill Road
Longview Drive	0.6	3,004	Class V Local	Paved	Erosion, Winter, Wind, Lightning, Wildfire	10 homes	Longview Drive
Main Street	0.3	1,352	Class V Local	Paved	Flood, Wind, Winter, Crash	34 units, 4 homes	Main Street
Maple Street (NH 114)	0.6	3,020	State	Paved	Wind, Lightning, Winter, Crash	24 units, 12 homes	Congregational Church
Mount Hunger Road*	**1.7**	8,892	Class V Local	Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	About 25 homes	Mount Hunger Road
Old Concord Road	**3.5**	18,385	Class V Local	Paved	Flood (Hopkinton Everett Reservoir)	112 campsites. About 25 homes or businesses	Keyser Pond Campground
Old Hillsboro Road*	**2.7**	14,013	Class V Local	Paved	Flood. Many buildings in the SFHAs Winter, Wind	About 53 homes	Old Hillsboro Road
Old Mill Pond Road	0.3	1,399	Class V Local	Paved	Wind, Lightning, Winter, Wildfire	16 homes	Old Mill Pond Road
Old West Hopkinton Road	**1.4**	7,450	Class V Local	Paved	Wind, Lightning, Winter, Wildfire	About 22 homes	Old West Hopkinton Road
Patch Road	0.8	4,367	Class V Local	Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	10 homes	Patch Road
Patterson Hill Road	**1.2**	6,336	Class V Local	Paved /Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	About 23 homes	Patterson Hill Road
Pine Hill Road	0.4	1,969	Class V Local	Paved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	15 homes	Pine Hill Road
Plummer Hill Road	0.7	3,775	Class V Local	Paved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	10 homes	Plummer Hill Road
Post Office Place	0.2	887	Class V Local	Paved	Wind, Lightning, Winter	No homes	Post Office
Prospect Street	0.2	987	Class V Local	Paved	Wind, Lightning, Winter	12 units, 6 homes	Prospect Street

Henniker Road Name	Total Length in Miles	Total Length in Feet	Road Classification (s)	Surface Type	Specific Hazard Concerns Where Noted	Approx Number of Homes or Vulnerable Units (10+)	Vulnerable Neighborhood or Facilities
Quaker Street*	**2.5**	13,364	Class V Local	Paved/ Unpaved	Erosion, Winter, Wind, Lightning, Wildfire, Elevation	About 22 homes	Quaker Street
Ramsdell Road*	0.6	3,300	Class V Local	Paved	Flood (Hopkinton Everett Reservoir)	3 homes, 2 units	Highway Garage, Wastewater Treatment Plant
Ray Road*	**1.6**	8,485	Class V Local	Unpaved	Flood, Erosion, Wind, Winter, Wildfire	About 53 campground sites. About 20 homes	Rock N' Birch Campground *
Ridgetop Lane	0.4	2,049	Class V Local	Paved	Erosion, Winter, Wind, Lightning, Wildfire	20 homes	Ridgetop Lane
River Road	**1.7**	8,738	Class V Local	Paved	Flood, Erosion, Wind, Winter, Wildfire	About 14 homes	River Road
Ruffled Road	0.4	2,054	Class V Local	Paved	Wind, Lightning, Winter, Wildfire	15 homes	Ruffled Road
Rush Road	**2.5**	13,337	Class V Local & State	Paved	Flood (Hopkinton Everett Reservoir)	40 Elderly and affordable units, 106 units, 50 homes	Rush Square, New England College Sanborn
Shaker Hill Road	**1.7**	8,934	Class V Local & Class VI Not Maintained & Private	Unpaved	Flood (Hopkinton Everett Reservoir), Elevation, Erosion, Winter, Wind, Lightning, Wildfire	10 homes	Shaker Hill Road
Shore Drive	0.4	2,228	Class V Local	Paved	Wind, Lightning, Winter, Wildfire	15 homes	Shore Drive
State Shed Road	0.1	649	Private	Paved	Wind, Lightning, Winter, Wildfire	No homes	State Highway Shed, Hopkinton Forestry & Land Clearing
Tanglewood Drive	**1.3**	6,695	Class V Local	Paved /Unpaved	Flood, Erosion, Wind, Winter, Wildfire	About 52 homes	Tanglewood Neighborhood
The Oaks	0.2	1,272	Class V Local	Paved/ Unpaved	Flood, Erosion, Wind, Winter, Wildfire	4 Units, 8 homes	Colby Hill Inn
Tower Road	0.3	1,526	Private	Unpaved	Elevation, Erosion, Winter, Wind, Lightning, Wildfire	About 6 homes	Craney Hill Fire Tower, radio comm
Union Street	0.3	1,447	Class V Local & Private	Paved/ Unpaved	Erosion, Winter, Wind, Lightning, Wildfire	450 dorm rooms	New England College Quad
Village Green	0.3	1,563	Class V Local	Paved	Wind, Lightning, Winter	16 homes	Village Green
Warner Road*	**1.1**	6,035	Class V Local	Unpaved	Flood, Erosion, Wind, Winter, Wildfire	About 11 homes or businesses	Warner Road

Henniker Road Name	Total Length in Miles	Total Length in Feet	Road Classification (s)	Surface Type	Specific Hazard Concerns Where Noted	Approx Number of Homes or Vulnerable Units (10+)	Vulnerable Neighborhood or Facilities
Weare Road (NH 114)	**4.7**	25,001	State	Paved	Flood, Crash. Many buildings in the SFHAs	About 45 homes or businesses	Weare Road
Western Avenue	**4.3**	22,709	Class V Local & Private	Paved/ Unpaved	Flood, Winter, Ice, Evacuation. Many buildings in the SFHAs	30 homes, 40 attached condo units, 4 apartments. About 100 total homes/ housing units	Western Ave Manufactured Housing Park, River Meadow Condominiums, Ferreira Apartments. Both NEC buildings and Police Department, Henniker Community School
Wood Hill Village Extension	0.1	533	Private	Unpaved	Wind, Winter	10 homes	Wood Hill Village Extension
Wood Hill Village	0.3	1,478	Private	Paved/ Unpaved	Wind, Winter	About 25 homes	Wood Hill Village Manufactured Housing Park
	89.01	**469,962** Total Miles & Feet of Most Vulnerable Roads in Henniker					

Source: CNHRPC compilation of data from NH Department of Transportation GIS Road Network Geodatabase, July 2019

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

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: Aucoin Farms Apartments [**~7** units], Ferreira Apartments [**~4** units], Henniker Knolls Affordable Housing [**~40** apartments], Keyser Pond Campground [**~112** camp sites], Mile Away Campground [**~130** camp sites], River Meadow Condominiums [**~40** attached units, bldgs of **6**], Rock N' Birch Campground [**~53** units], Rush Square [**~40** elderly and affordable housing units], Western Ave Manufactured Housing Park [**~7** homes], White Birch Center [**~86** children preschool+ **~35** senior adults+ **~25** staff], Wood Hill Village Manufactured Housing Park [**~47** homes]. See also Shelters, Schools and Medical Facilities. **Assessed structure (only) valuation for these vulnerable population facilities total $13.2m**.

Economic Assets include those **businesses and services** that employ a large number of people or contribute to the local economy: Citizen's Bank, Colby Hill Inn and Barn (**~75** people)/ The Grazing Restaurant, Country Spirit Restaurant, Daniel's Restaurant and Pub, Davis & Towle Insurance, Dollar General, Dunkin Donuts, Gin Gin Chinese Restaurant, Harvester Market, Henniker Brewing Co, Henniker Farm & Country Store, Henniker House Bed and Breakfast, Intervale Farm Pancake House, Michie Corporation, Quilted Threads, Sonny's Main Street Restaurant (and apartments), Stonefalls Gardens, Western Avenue Pizza (in L of building). AGRICULTURAL: Aucoin Farm (Elk, Maple Syrup), Davison Farm (Produce), Forster's Christmas Tree Farm, French Pond Orchard (Apples, Peaches), Henniker Community Market (seasonal May-Oct), Hop N Henn Farm (Poultry), Houston's Pine Lane Farm (Corn Fields), L Aucoin Hay Fields , Peak Orchard (Apples, Peaches, Porkside Farms (Pork). See also **Hazardous Materials** facilities. **Assessed structure (only) valuation for these economic asset facilities total $9.7m**.

Hazardous Materials Facilities include: All in One Market, Ayer & Goss, Ayer & Goss Fuel Terminal, Ayer & Goss Fuel Terminal, Browns Way Automotive, Central NH Concrete, Contoocook Artesian Well Company, Contoocook Valley Lumber Company, Cousineau Valley Chipping Company, Danny's Automotive Service Center, Foster's Materials Management, Goss Lumber, Granite State Forest Products, H. G. Caldwell Auto Repair, Henniker Crushed Stone, Henniker Motors, Henniker Salvage Company Non Legal Junkyard, Henniker Speed and Accessories, HHP Sawmill Inc., Hustis Auto Repair, Jim & Tina Nash Garden Accents Landscaping and Masonry Supplies, Mobil Filling Station, New England College Science Building, Non Legal

Junkyard (Colby), Non Legal Junkyard (Roberts), Patenaude Lumber Co (Sawmill), Pats Peak Operations Buildings (Fuel Storage), Pike Industries, Transfer Station, Triple L Lumber Company. See also **Economic Asset** facilities. **Assessed structure (only) valuation for these hazardous material facilities total $13.3m**.

Cemeteries and Churches include: CHURCHES: Congregational Church of Henniker, St. Theresa's Church, Weare Friends Quaker Meeting House. CEMETERIES: Chase Cemetery, Chase Yard Cemetery, Colby Cemetery, Depot Hill Cemetery (aka First Burial Yard) (Town), Gordon Cemetery, Harriman & Huse Cemetery, Henniker (New) Cemetery, Highland (Part of) Cemetery (aka Gordon, Old /North/Left) (Town), Highland Cemetery New /South/Right (Town), Patten Family Yard, Plummer Cemetery, Plummer Hill Cemetery (Town), Quaker District Cemetery and Quaker School (1867) (Town), Roy Cemetery, Village Cemetery (aka Old Center) (Town). **Assessed structure (only) valuation for church facilities and headstone replacement estimates for cemeteries ($50k each) total $4.6m**.

Historic Sites and Buildings include: Barrett House (1820), Currier Alumni Center (1850 B&M railway station), Downtown Block (Henniker Pharmacy to NEC Admin Building) , Hammond's Barn (1780), Henniker Historical Society (Academy Hall), Holden House (1800), Kirchner House, Meeting House, New England College Cogswell House (1820), Ocean Born Mary House, O'Connor House (1887), Proctor Square: Childs Block (Yin Apartments), Proctor Square: Emerson Block (Henniker Pharmacy), Proctor Square: Noyes Block (Davis & Towle), Proctor Square: Preston Block (Sonny's Pizza), Proctor Square: Preston Home (Daniel's Restaurant), School House. See also **Recreational and Gathering Sites**. **Assessed structure (only) valuation for these historic facilities total $2.3m**.

Recreational and Gathering Sites of both land and buildings include: Contoocook River DOT Railroad ROW, Contoocook River Twin Bridges Canoe Access, Clement Arena Covered (Walking) Bridge (NEC), Craney Pond [47 acres], French Pond Boat Launch [39 acres], Henniker Athletic Fields, Long Pond Canoe Access [90 acres], Main Street Stone Arch Bridge, NEC Athletic Fields, NEC Laurie Cox Athletic Fields, NEC Lee Clement Ice Arena [~2,200 capacity], NEC Ropes Course, Disc Golf, and Trails, NEC Tennis Courts, Pat's Peak, Pleasant Pond Town Beach and Boat Launch [92 acres], Tall Pines Cottages [~5 units], Tucker Free Library [~200 capacity], Upper Pond Canoe Access [25 acres]. Some of these sites can be **Economic Assets** to the Town even if the land is untaxable. **Assessed structure (only) valuations for the recreational facilities total $6.1m**.

Future Development includes mostly residential development potential as most of the land in Henniker is rural. APPROVED DEVELOPMENTS As of **07-19**, there are several approved but unbuilt residential (home) or non-residential developments noted by the Hazard Mitigation Committee: Barletta Property (residential), Bennett Development (residential), Chase Brook Open Space Residential Development (**20** lot residential), Commercial-Recreational CR-1 Zoning District (commercial-recreational, Mount Hunger Development (**12** lot residential), New England College (new Academic Building). LEGACY PARCELS, family legacy large acre lots with future development potential, include a selection of the largest, non-

conservation parcels over **200** acres: Aucoin Farms Lot (**351** acres), Aucoin Farms Lot (**256** acres), Barletta Property (**375** acres), Clement Lot (**200** acres), Freeman Colby Road Partnership Lot (**200** acres), McNulty Lot (**275** acres), Northern Investment Trust Lot (**1,033** acres), Patenaude, T Lot (**386** acres), Rice, A Lot (**329** acres). There are many more large family legacy parcels which could be identified with an inventory. LARGE-SIZED LOTS IN HENNIKER FOR SALE **03-19**: lots for sale during this snapshot include – Bear Hill Road Residential Lot (**14** ac residential), Butter Road House and Residential Lot (**30** ac residential), Colby Hill Road Residential Lot 135-02 (**12** ac residential), Freeman Colby Road Residential Lot 124 (**39** ac residential), Lyman Road House and Residential Lot (**275** ac residential), Mount Hunger Residential Lot (**10** ac residential), Mount Hunger Residential Lot (**11** ac residential), Quarry Hill Court Residential Lot (**59** ac residential), Ray Road Residential Lot (**11** ac residential), Weare Road Residential Lot #752 (**42** ac residential), Western Avenue Lot (**45** ac residential). **Assessed valuation for the Potential/Approved PB Developments (LAND) and Lots for Sale properties (LAND) only totals $31.4m**.

PROBLEM STATEMENTS AND EVALUATION

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

Vulnerable Populations Table

- Hall Avenue has catch basins but they are not functional and are being replaced/cleaned. A similar situation is occurring at the end of Rush Road. Until the catch basins are taken care of, flooding can occur. All were to be upgraded by summer 2019. Catch basins and storm drains are cleaned with Vactor (vacuum truck).
- The NH 114 and Main Street intersection of Downtown is confusing for drivers. Although there are crosswalks, there is a blind sight danger to pedestrians. Clearer signage may be needed. Students do not often stay in crosswalks or look both ways. Police Dept often meets with college freshmen to talk about dangers. Henniker Pharmacy parking causes visibility issues to the nearby pedestrian crossing. The three crosswalks, high buildings, active parking configurations and steady traffic contribute to the safety issues.
- From NH 114 to Flanders Road, pedestrian hazards are located all along the length. This is the heart of Downtown Henniker and where New England College students walk and bike. Crosswalks are sometimes located in illogical spots, traffic drives too fast, etc. Pedestrian-vehicle crashes do happen.
- The Henniker Community School serves as the Town's emergency shelter. During an earthquake, high wind event, fire, or contamination of the Town water supply, these disasters could also damage the

School and remove the option to use the School as a shelter. Pat's Peak, St. Theresa's, White Birch, and restaurants could be considered as alternate temporary shelter locations around Town.

- White Birch Center is a designated warming and cooling shelter. However, damage from fire, high winds, or earthquake could inhibit its usage as a cooling or warming shelter. State required an EOP for child care for White Birch Center. A generator is required for the use of White Birch not only for the warming and cooling, but also to provide child care for emergency workers. EMPG 50/50 grant and HMPG 75/25funding could be used.
- A loss of electricity and torrential downpours (flooding in the building) could prevent the use of White Birch Center as a warming shelter, cooling shelter, and its hosting of senior programs and services and vital child care. A generator would be a good solution to pursue, as would floodproofing options.
- Western Avenue which has vulnerable culverts could be flooded or experience ice jams from the Contoocook River. Road gets washed out by the Police Station. These washouts would impact the Police Department, Wastewater pumping station, manufactured homes and River Condos on Western Avenue. The corner of Western Avenue had been reinforced with large boulders to give it more stability. The large Western Avenue culvert has a screen to collect debris so it does not build up inside, and plastic pipes help better than the steel. The Highway Dept replaced dozens last summer. When that culvert floods, the road goes underwater, nothing that can be done. The Town should prepare an evacuation plan for River Condos.
- If the West Henniker Wastewater pumping station on Western Ave is flooded or damaged by earthquake, the entire west side of Town could lose sewer capacity. Built 30' underground, new pipes are constructed to earthquake standards. Electrical controls are aboveground with ladder down to pump. Station has never flooded, but was close during the 2006 flood. Options could include constructing a 10'-20' wall and flood door around the pump station; raising the electrical panels, etc.
- *INFO:* Several electrical meters for the WWTP building would have to be replaced and consolidated into one meter as part of the project. Consider possible addition of showering facilities as many people now choose to return home without power to sleep, needing to charge accessories (phones, laptops) and shower prior to returning to work. Funding could include EMPG 50/50 or Red Cross.
- *INFO:* USACE stated the River Meadow Condo swamp was part of their flood control area. The newest flood inundation GIS layers were provided to CNHRPC to add to the Haz Mit Maps.

<u>Economic Assets Table</u>

- Any lightning strike, accidents, or terrorism incident impacting the Ayer and Goss fuel depot on Hall Avenue could also place the child care and senior programming at risk at White Birch Center across the street and impede its use as a cooling/warming shelter. Evacuation of the surrounding area may be necessary if Ayer & Goss experiences an disaster event. White Birch has an evacuation plan.

- All the cornfields and hay fields are subject to lightning (fire), flooding and drought. Damage to crops would result in no feed for dairy animals, and no water for livestock (drought). Fire Dept was instructed not to provide water to wells because it not potable. The Dept has a mapping system on iamresponding of all hydrants and dry hydrants, buildings, and turbo systems 75' feet from water sources. Fire Marshal is obtaining Henniker info. State is adopting iamresponding next year so Town may not need to pay for the subscription.
- *INFO:* Town can post emergency information at the Post Office.
- *INFO:* In this busy Downtown, NH 114 and Main Street intersection was just re-done in 2017. For pedestrian, vehicle and business safety, look into developing a traffic study to find ways to make pedestrians safer and intersections easier for drivers to understand. Options could include barrels or signalized pedestrian intersection, flashing sidewalk warning lights that can be activated as needed by pedestrians, speed bumps or high visibility crosswalk paint.

Hazardous Materials Table

- Heavy rainfall on informal but still harmful junkyards could leach unknown materials into the groundwater or run off into nearby streams.
- The NEC Bridge Street parking lot has about 50-60 cars which could be flooded during high water conditions. (This situation occurred at Plymouth State several years ago)

Cemeteries & Churches Table

- Damage from wind, fire, lightning, or earthquake to the Congregational Church Parish Hall and/or St. Theresa's Parish, which are the evacuation locations for White Birch Center, would require tertiary off-site evacuation plans for the White Birch patrons.
- The high hills New Cemetery has had problems with landslides from flooding, heavy rain, melt. Casket edges of old burials were exposed and have been fixed. Trees were removed, drainage was improved. Monitor the situation to ensure similar problems do not occur during future rain/flood/melt events.

Historic Sites & Buildings Table

- Damage to the historic Henniker Community School would cause an issue for White Birch's before and after School programming as well as vacation and summer camp which are held at the School. These services allow parents to work while their children are cared for and enriched. White Birch has MOUs to get children to a safe location.
- The historic, dry wooden downtown containing critical and community facilities such as Cogswell Water Works, White Birch Center, NEC, Henniker Pharmacy, and other Main Street buildings could be a catalyst for a conflagration should a lightning strike occur (no lightning rods on buildings) or if a fire

is started in one of these downtown buildings. Downtown Block has the greatest potential for conflagration.

- *INFO:* Dept staff indicated once there was a State study developed about pros and cons of lightning rods (date unknown). The Town should review the study first – the State Fire Marshal's office should have information, and then make decisions about the rods.
- *INFO:* Discuss lightning rod potential installation with the Historical Society. Work on the cupola is being done, so the HMC's Historical Society member will bring it up at the next HS meeting.

Recreation & Gathering Sites Table

- Flooding for all riverside Western Avenue facilities and Old Concord Road facilities & buildings beside the Contoocook River can occur during heavy rainfall or snow melt. Apartment owners need to keep their tenants up to date. Government owns flowage easements to where old Mill Dam existed, to elevation 420 feet (2 feet above spillway crest at Hopkinton Dam).
- An avalanche at Pat's Peak could impact the 6 black diamond trails, including the rare possibility of catching people on the trails. Buildings, including Pat's Peak Lodges may be caught in such an event, but staff have undergone training and close off potentially dangerous locations.
- New England College has a large ice arena that hosts events, political candidates, sports, and more. Heavy rains, wind, or active shooter possibilities could close down the arena and require an evacuation. The college has an international student population and is known for its liberal arts and political science curriculum.

Future Development Table

- When spring melts the snow and the temps warm, or during heavy rains, washouts occur at: Liberty Hill Road, Craney Hill Road (paved), Patterson Hill Road (half paved), Quaker Hill Road (half paved), Butter Road, Mount Hunger Road, Dodge Hill Road (half paved), Cote Hill Road (paved), Hemlock Corner Loop.
- With the growing popularity of drones used for business (real estate, etc) and for personal interest, accidents with the 30-40lb flying machines could be deadly if falling in populated areas, on cars or people or on infrastructure. Another concern is the potential for intelligence gathering and terrorism usage. [USACE in MA worked with FAA to identify regulations. USACE will use the CFR Title 36 regulations to restrict drones from flying over their dams, but the FAA will not be designating any Army Corps property, including in NH, specifically as official no-fly zones in the known future.]

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

Potential Losses from Natural Disasters

Natural disasters, including floods, wind events, severe winter storms and ice storms, secondary disasters as a result of the natural disasters (such as power loss) and to a lesser degree, human and technological hazards as documented in **4 HAZARD RISK ASSESSMENT** have occurred in Henniker 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 Henniker most prone to recurring hazards (like flooding), some initial estimates of measurable property damage and building damage have been discussed by utilizing simple techniques such as the numbers of structures and assessed valuation. This two-dimensional approach of calculating dollar losses from tangible structures offers a basic yet insightful tool to begin further loss estimation analyses.

TOOLS FOR COMMUNITIES WITH GIS

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

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

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

METHODS OF POTENTIAL DOLLAR LOSSES BY NATURAL HAZARDS

A more manageable technique was used for loss estimation for the purposes of this **Hazard Mitigation Plan Update**. Natural hazard losses are calculated based on dollar damage ranges over the entire community, or in the case of flooding, buildings in the Special Flood Hazard Areas (SFHAs) are counted and their value is collected. The number of total parcels in the community as of **February 2019** is **1,959**. Using Henniker's MS-1 **Dec 2018** valuation data, **the total assessed value of all residential and non-residential structures ONLY in Henniker (\$272,705,978) is the basis for loss estimation calculations.** ***Land and utilities are not included here.***

Potential Building Dollar Losses by SFHA Flooding

Using geographic information system (GIS) technology, parcels with buildings within the floodplain were identified using Henniker's online digital tax maps developed by Cartographic Associates Inc (CAI) in **August 2019** that contained assessing data, and geospatially overlaid this data with the **2010** FEMA Digital Flood Insurance Rate Maps (DFIRMs) digital map. An intersection operation identified all the parcels with buildings in the SFHAs, although this evaluation does not determine whether the building itself is situated within floodplain boundaries. ***Building Type*** was characterized into one of four categories, single-family homes, multi-family homes, manufactured homes, and non-residential buildings. Building number and value were excerpted from the assessing database. **Table 36** summarizes this data, identifying **81** primary buildings in the SFHA. ***Land value, building contents value and infrastructure were not considered in these calculations.*** Henniker parcels and assessing data can be found at www.axisgis.com/hennikernh.

Table 36

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	59	\$7,178,500	\$121,669
Multi-family Homes	14	\$1,722,100	\$123,007
Manufactured Homes	2	\$96,000	\$48,000
Non-Residential Buildings	6	\$717,500	\$119,583
Totals	**81**	**\$9,714,100**	-----

Sources: CNHRPC 2019 Digital Parcel Data Intersection with 2018 Assessing Data, 2010 DFIRMs

In **Table 36**, digital analysis and human interpretation identified **59** single family residential homes, **14** multi-family homes, **2** manufactured homes, and **6** non-residential buildings as situated within the Special Flood Hazard Areas (SFHAs). As the Town's total number of **2018** housing units is estimated at **1,971**, about **4%** of Henniker's parcels with buildings seem to be located in a floodplain area. The average replacement value is **\$122k** for a single-family home or **\$123k** for a multi-family home, or **\$120k** 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 **\$9.7m**.

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

Table 37 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 37

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

Building Type	Total Value of Buildings in SFHA	Total Value of Potential Damages in SFHAs by Respective Building Type		
		Eight-Foot Flood 49% Damage	Four-Foot Flood 28% Damage	Two-Foot Flood 20% Damage
Single Family Homes	**$7,178,500**	$3,517,465	$2,009,980	$1,435,700
Multi-Family Homes	**$1,722,100**	$843,829	$482,188	$344,420
Manufactured Homes	**$96,000**	$47,040	$26,880	$19,200
Non-Residential Buildings	**$717,500**	$351,575	$200,900	$143,500

Sources: See Table 36; FEMA

If all **59** single family homes were damaged by a ***Two-Foot Flood (20% Damage)***, the dollar damage to the buildings *only* could be **$1.4m** while an ***Eight-Foot Flood (49% Damage)*** could cause **$3.5m** in damage. If all **14** multi-family buildings in the SFHA were damaged by a ***Two-Foot Flood***, the dollar damage to the buildings *only* could be **$344k**, while an ***Eight-Foot Flood*** could cause **$844k** in damage. The **2** manufactured homes identified in the SFHA would have a smaller ***Two-Foot Flood (20% Damage)*** **($19k**) and the **6** non-residential buildings could have damage valued at **$144k**. Dollar damage estimations vary according to the standard percentages of damage levels associated with flooding levels set by FEMA.

Table 38 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 38

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

Building Type	Average Value of Individual Buildings in SFHA	Individual Value of Potential Damages in SFHAs by Respective Building Type		
		Eight-Foot Flood 49% Damage	Four-Foot Flood 28% Damage	Two-Foot Flood 20% Damage
Single Family Homes	**$121,669**	$59,618	$34,067	$24,334
Multi-Family Homes	**$123,007**	$60,274	$34,442	$24,601
Manufactured Homes	**$48,000**	$23,520	$13,440	$9,600
Non-Residential Buildings	**$119,583**	$58,596	$33,483	$23,917

Sources: See Table 36; FEMA

One (**1**) single family home averages **$24k** when damaged by a ***Two-Foot Flood*** while an ***Eight-Foot Flood*** could cause **$60k** in damages. One (**1**) multi-family home compares similarly at **$24k** for a ***Two-Foot Flood*** damages and at **$60k** for an ***Eight-Foot Flood***. One (**1**) single non residential building in the SFHA is also similar at similarly at **$24k** for a ***Two-Foot Flood*** damages and at **$59k** 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 Dec 2018 assessed value of all residential, commercial, and industrial structures in Henniker is $272,705,978 (no land) on 1,959 parcels.** Disaster damages are often illustrated in the following section utilizing a percentage range of town-wide building damage. At **1,971** housing units in Henniker estimated from the **2018** NH Office of Strategic Initiatives (NH OSI) housing estimates, any type of disaster impact to **10%** of Henniker housing units would yield **197** damaged homes.

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

building contents, are not examined here. Specific individual studies would be needed to assess more detailed scenarios. Following are potential building-only dollar damages from select natural hazards.

Drought

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

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

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

Earthquake or Landslide

Earthquakes can cause buildings and bridges to collapse, disrupt water supplies, electricity and phone lines and are often associated with **landslides** and **flash floods**. Buildings that are not built to a high seismic design level or are large in size could be susceptible to structural damage. Large facilities or historic buildings including the Downtown, Town Hall, New England College, Rush Square (older person & affordable housing), Wood Hill Village Manufactured Housing Park, and other densely populated locations are particularly at risk because of building sizes and/or their large numbers of people contained within. NH 9/ US 202 travels through the Town over several bridges and crosses NH 114. and serves as a highway for a great number of people. The ramps are the primary access for Henniker residents. Loss of this infrastructure due to an earth hazard could be create significant problems.

Loss of these or other community buildings or highways could result in fewer services available to residents or reduce the ability to evacuate. Buildings which are located on or near the sides of river and stream banks or that are located on a hill over **15%** could be subject to **landslide** triggered by rains or **erosion**. Henniker has over **30** high elevation points. The Central NH Region area of Boscawen, Webster, Hopkinton (Contoocook), Henniker, Hillsborough and Warner (Davisville) hosts frequent epicenters of deep earthquakes.

With a scenario range of **0.5%** to **1%** of buildings damaged throughout the Town, an **earthquake** or **landslide** could potentially cause up to **$1.4m** to **$2.7m** in building-only damage costs alone, not including contents, infrastructure, or land.

Extreme Temperatures

Excessive heat and **extreme cold** can harm property, such as landscaping and agriculture, or infrastructure. People will draw more water from their wells to help alleviate these conditions. Extreme heat can sicken people, causing sunstroke, heat exhaustion and dehydration if the environment is not cool enough or water intake is too low. Conversely, extreme cold can cause hypothermic conditions. In this manner, neither extreme heat or cold is measurable for dollar damage. Henniker has many vulnerable populations, including White Birch Senior Center, Henniker Community School, New England College, Rush Square, manufactured housing parks, remote neighborhoods, and more. A detailed inventory of ***Vulnerable Populations*** can be undertaken by the Town and regularly updated which can be used by emergency responders to ensure susceptible people remain healthy.

High Wind Events or Tropical and Post-Tropical Events

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

With a scenario range of **1%** to **5%** of buildings damaged by wind events throughout the Town, a wind event could potentially cause up to **$2.7m (for more localized downburst, high winds** and **hail, or tornadoes)** to **$13.6m (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 Henniker are at specific risk but lightning strikes can cause fires. Damages will vary according to the value of the structure and home and the contents inside, and dollar amounts would depend on if the hazard hit an area with a high density of buildings. Specific sites which would cause the greatest impact if struck by **lightning** include conflagrations in the Downtown; high elevations; densely populated buildings including those at New England College or Henniker Community School; historic buildings such as White Birch Center, St. Theresa's Church, Historical Society, and more. Town Facilities like the Wastewater

Treatment Plant, Water Works, Highway Department Garage, Town Hall, and Police and Fire Departments are necessary for governmental function and provision of basic services.

The Town's utilities, including Eversource powerlines, high tension powerlines, the **5** telecommunications towers and **5** TDS switching stations, TDS telephone lines and broadband cable internet service, and the water and sanitary facilities, as well as the municipal and School computer systems, are vulnerable to **lightning strike**. Tall buildings like those found in the Downtown or at the high elevations could be vulnerable without lightning rods.

With a scenario of **0.5%** of buildings damaged throughout the Town, a **lightning strike** could potentially cause up to **$1.4k** in building-only damage costs alone, not including contents, infrastructure, land, or through fire spreading.

Public Health

Dollar damage estimates are not feasible for public health hazards.

River Hazards

Ice jams on the **Contoocook River**, the **Amey Brook** or **Chase Brook** would be a major cause of **flooding** which could recur in the future. Woody material causing **debris impacted infrastructure** may be more likely to impact bridges than ice jams, especially any the structurally deficient State or Town bridges. Several bridges span across the Contoocook River and its canals, Amey Brook, Chase Brook, and many unnamed brooks. Small brooks culverts and drainage systems offer additional opportunity for ice jams, debris blockage, and more. The ***2019-2028 NH Department of Transportation Ten Year Plan (TYP)*** provides many examples of basic cost estimates bridge replacement and rehabilitation.

This average figure of **$750,000** can be used for one (**1**) local bridge *replacement* in Henniker 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 (**30**) of the **59** 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 **$718k** in building damage costs.

Winter Weather

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

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

With a scenario range of **1%** to **5%** of buildings damaged throughout the Town, **severe winter storms** could potentially cause up to **$2.7m** to **$13.6m** in building-only damage costs.

Solar Storms and Space Weather

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

Wildfire

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

A large recreational area behind New England College and the US Army Corps of Engineers offers wonderful recreational opportunities for residents and students, including trail systems. These areas and the Town's State Forests and publicly accessible conservation easements are particularly vulnerable to **wildfire** because accidental human-caused fires could occur. Remote fires might not be reported until they become large enough to be spotted. Dollar damage would depend on the extent of the fire, the number and type of buildings burned, and the amount of contents destroyed within the buildings.

With a scenario of **1.0%** of buildings damaged in the Town, a **wildfire** could potentially cause up to **$2.7m** in building-only damage costs alone, not including contents, infrastructure, or land.

National Flood Insurance Program (NFIP)

In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities such as Henniker 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 Henniker's Flood Hazard Boundary Maps were developed on **March 15, 1974,** and later the first Flood Insurance Rate Maps (FIRM) were developed on **May 1, 1978** and included the Special Flood Hazard Areas (SFHAs). The Town entered the regular phase of NFIP membership on **March 14, 1979**. Henniker's first Flood Insurance Study (FIS) was produced in **November 1977**. No amended FIS or FIRMs were developed for the Town until over four decades later, consistent with other Central NH Region communities.

In the present day, Henniker's effective FIRMs are digital (DFIRMs) dated **April 19, 2010** as is the Merrimack County Flood Insurance Study (FIS) which includes Henniker (community **#330114**); individual community FIS are no longer being developed. These **2010** newest documents were adopted by the Board of Selectmen, supercede all previous NFIP documentation, and are placed into the Town Zoning Ordinance. **Table 39** summarizes the historical background of the Town's NFIP effective dates.

Table 39

NFIP History of Henniker – Effective Dates

Version	Flood Insurance Study (FIS)	Flood Insurance Rate Maps
Original	**November 1977**	**May 1, 1978**
Current	**April 19, 2010**	**April 19, 2010**

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

HENNIKER'S NFIP STATISTICS

In **Table 40** is a cumulative history of the trends and overall totals of flood insurance policies and losses of those property owners utilizing the NFIP insurance in Town. Four snapshots in time, one from each of Henniker's **Hazard Mitigation Plan** versions, display the number of NFIP policies in force and paid loss statistics between **November 2007 - September 2018**.

Table 40

History of NFIP Policy and Paid Loss Statistics

Report Date	Policies in Force	Insurance in Force	Number of Paid Losses Since 1979	Total Losses Paid Since 1979
Nov 2007	62	$12,186,400	3	$890
Mar 2013	62	$12,886,400	3	$890
Sep 2018	52	$12,388,000	3	$890

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

From Table 40, in **November 2007** within the severe flooding event period of **2005-2008**, **62** properties in Henniker were covered by NFIP flood insurance. By **March 2013**, that figure remained constant at **62** policies in Henniker. Since **1979**, a total of **3** loss claims had been paid to owners in Town due to flooding damage totaling only **$890**. By **September 2018**, with no severe flooding events since **2012** in the Central NH Region, the number of properties covered by flood insurance fell to **52** parcels covered by NFIP flood insurance, with a total of **$12.4m** coverage.

To date, since Henniker joined the NFIP in **1979**, there have been **3** payouts totaling a small **$890** in paid losses to policyholders for insurance claims, sometime before **November 2007**. Normally, the number of policies would fluctuate more than displayed over this **15**-year period, influenced by the lack of current severe flooding events, recent changes in flood insurance regulation, the higher cost of insurance, uncertainty about exact floodplain location, unchanging real estate market, and assumptions that flood insurance is unnecessary if one's property is outside of the floodplain. This fluctuation did not occur in Henniker.

Table 40 also illustrates that while the property owners anywhere in the entire Town of Henniker are eligible to purchase flood insurance for their property, only **52** properties out of the **1,959** total parcels in the entire community are insured against flooding. As described previously, a total of **81** parcels with homes and non-residential buildings seem to be at least partially situated in the Special Flood Hazard Areas (SFHA). Assuming the **52** policy properties are within the SFHA, **64%** of buildings in the floodplain are insured against flooding.

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

REPETITIVE LOSS PROPERTIES

A specific target group of properties is identified and serviced separately from other NFIP policies when repetitive losses occur on the same properties. The group includes every NFIP-insured property that, since **1977** 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 **1992**.

As of **April 2018**, Henniker had a total of **0** repetitive loss properties according to records kept by the Federal Emergency Management Agency and supplied by the NH Office of Strategic Initiative (NH OSI). Zero (**0**) repetitive loss properties (RPL) have been recorded in the community even during the significant flooding and infrastructure damage disaster period of **2005-2012** (See **4 HAZARD RISK ASSESSMENT**). **Table 41** displays the repetitive loss data:

Table 41

Number of Repetitive Loss Properties

Building Type	Number of Repetitive Loss Properties
Single Family	0
Multi-Family	0
Non-Residential	0
Total Properties	**0**

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

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

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 Henniker

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

Since the NH Office of Strategic Initiatives (NH OSI) does not identify Henniker as a repetitive loss community, which is based upon **Table 41** data, the Town is classified as a Tier 2 community. A telephone call may be made to the Town every 5-10 years or otherwise as needed when classified as Tier 2. 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.

On **September 18, 2007**, a CAV was held in Henniker to review compliance with NFIP policies and educate staff on these policies. A review of the Floodplain Development Ordinance, Subdivision Regulations, Site Plan Review Regulations, and building permit processes were examined. A letter was sent to Henniker Selectmen on **November 27, 2007** reviewing the visit and discussing the results, which are as follows.

According to the **2007** letter, the Town of Henniker Zoning Ordinance was not in compliance to National Flood Insurance Program (NFIP) requirements and revisions were supplied. NH OSI suggested accompanying site plan review regulation and subdivision regulation changes should occur.

Since the CAV, the Floodplain Development Ordinance and Planning Board regulations were been revised accordingly, bringing Henniker into full compliance with the NFIP. The **Nov 2007** CAV was the last conducted. Shortly prior to the CAV, Tier 2 Henniker experienced severe damages during the **April Spring 2007 Floods** (**$111k** Public Assistance federal funding received) and was impacted heavily during **Tropical Storm Irene 2011** (**$154k** PA received). As needed, a follow up phone call should be made by NH OSI to request a review of Zoning Compliance procedures and the contents of the Floodplain Development Ordinance, Subdivision Regulations and Site Plan Review Regulations prior to **2024**, when this **2019 Plan** expires.

Floodplain Development Ordinance Amendments

The Town of Henniker has a Floodplain Development Ordinance that currently contains the required FEMA regulations to remain eligible for the NFIP. The Town of Henniker approved their first Floodplain Ordinance at Town Meeting in **March 1978** prior to becoming a NFIP member on **March 14, 1979** the following year. Since then, sections of the Floodplain Development Ordinance had been modified in various years, including **March 1982**, **March 1992**, **March 2008**, and **February 2010**, its last amendment.

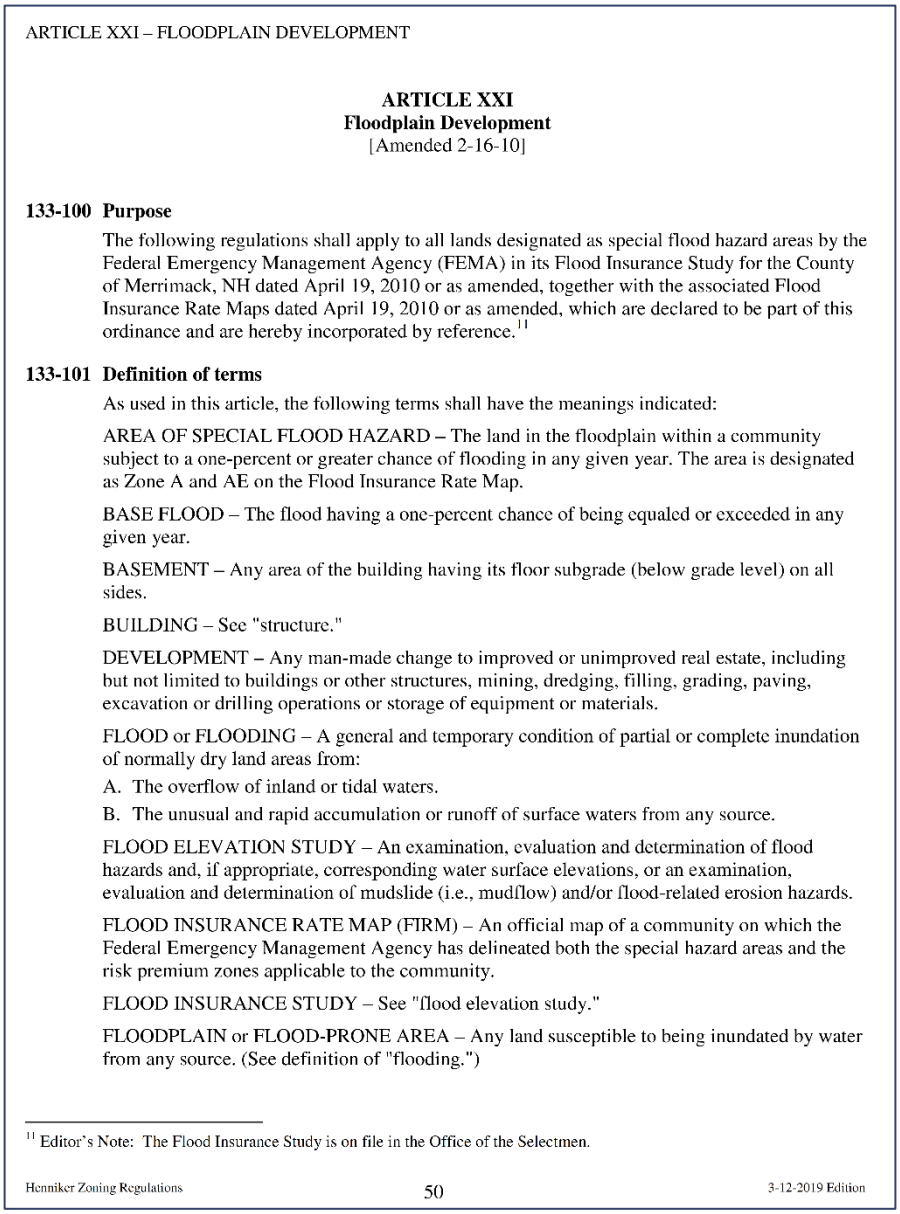
In **March 2008**, Henniker updated the Floodplain Ordinance to comply with recent changes to the NFIP program and to allow the Selectmen to approve the new Digital Flood Insurance Rate (DFIRM), when available to accept the forthcoming new Flood maps without the Town Meeting approval process.

In **February 2010**, the Board of Selectmen adopted the new FEMA Floodplain Maps, the current effective Digital Flood Insurance Rate (DFIRM) maps dated **April 19, 2010**, and incorporated the necessary FEMA language revisions into the Floodplain Development Ordinances.

The **2010** Henniker Floodplain Development Zoning Ordinance contains all the elements to date requested by FEMA and the NH Office of Strategic Initiative's Floodplain Management Program. An excerpt of the Floodplain Ordinance is displayed in **Figure 27**.

Figure 27

Latest Floodplain Development Zoning Ordinance



ARTICLE XXI – FLOODPLAIN DEVELOPMENT

ARTICLE XXI
Floodplain Development
[Amended 2-16-10]

133-100 Purpose

The following regulations shall apply to all lands designated as special flood hazard areas by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study for the County of Merrimack, NH dated April 19, 2010 or as amended, together with the associated Flood Insurance Rate Maps dated April 19, 2010 or as amended, which are declared to be part of this ordinance and are hereby incorporated by reference.[11]

133-101 Definition of terms

As used in this article, the following terms shall have the meanings indicated:

AREA OF SPECIAL FLOOD HAZARD – The land in the floodplain within a community subject to a one-percent or greater chance of flooding in any given year. The area is designated as Zone A and AE on the Flood Insurance Rate Map.

BASE FLOOD – The flood having a one-percent chance of being equaled or exceeded in any given year.

BASEMENT – Any area of the building having its floor subgrade (below grade level) on all sides.

BUILDING – See "structure."

DEVELOPMENT – Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

FLOOD or FLOODING – A general and temporary condition of partial or complete inundation of normally dry land areas from:

A. The overflow of inland or tidal waters.

B. The unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD ELEVATION STUDY – An examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

FLOOD INSURANCE RATE MAP (FIRM) – An official map of a community on which the Federal Emergency Management Agency has delineated both the special hazard areas and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY – See "flood elevation study."

FLOODPLAIN or FLOOD-PRONE AREA – Any land susceptible to being inundated by water from any source. (See definition of "flooding.")

[11] Editor's Note: The Flood Insurance Study is on file in the Office of the Selectmen.

Henniker Zoning Regulations 50 3-12-2019 Edition

Source: Section of Henniker Zoning Ordinance March 2019

NFIP Familiarity in Henniker

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

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

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

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

When possible, Town staff should try promote flood insurance to property owners in Town; only **52** properties out of the **1,959** parcels in Henniker 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.henniker.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 **Henniker Hazard Mitigation Plan Update 2019.**

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

Capability Assessment Types
Planning & Regulatory
Administrative and Technical
Financial Resources
Education and Outreach

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

Each Capability had inventoried the latest version or adoption Date; a Description of the item; the location of the capability in Town; the Level of Effectiveness of the Capability; which Department, Board or other has Responsibility for the capability; what Changes were made to the capability since the **2014 Hazard Mitigation Plan**; and Future Improvements to the Capability.

Town Capabilities

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

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

DEPARTMENT ABBREVIATION KEY:

ACE	US Army Corps of Engineers (stakeholder)
BOS	Board of Selectmen
CC	Conservation Commission
BI	Code Enforcement/Building Inspector
EM	**Emergency Management**
FD	**Fire & Rescue Department**
HD	**Highway Department**
LU	Land Use Department
NEC	New England College (stakeholder)
PB	**Planning Board**
PD	**Police Department**
SD	Henniker School District
TA	Town Administration
WB	White Birch Center (stakeholder)
WD	Cogswell Springs Water Works (Water District)
WW	Wastewater Department (Board of Selectmen)

Primary Mitigation Department

PLANNING AND REGULATORY CAPABILITIES

The planning and regulatory capabilities displayed in Table 42 are the plans, policies, codes, and ordinances that reduce the risks or impacts of hazards. There are **3** categories: ***Plans and Planning Documents***; ***Building Codes, Permitting, and Inspections***; and ***Land Use Ordinances, Regulations, and Town Ordinances***. Most of the documents listed below are the Town's documents, but others are School, local, regional, state and federal which support the Town's the hazard mitigation goals, objectives, and/or Actions.

Table 42

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 Low Moderate High	Responsibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
HENNIKER PLANS AND PLANNING DOCUMENTS							
2017	**EM Emergency Operations Plan 2017**	The last plan was 2017. Describes who's responsible for what actions during an emergency, includes evacuation plan. Includes general warning systems, chain of command, lists of resources.	Entire Town	**High**	Emergency Mgt	Plan was updated in 2017	Work with town departments on ways to improve the LEOP.
Dec 2014	**EM Henniker Hazard Mitigation Plan 2014**	Hazard Mitigation Plan regularly updated every 5 years. First Plan in 2007, next in 2014. Currently updating for 2019.	Entire Town	**High**	Emergency Mgt	Updated Plan in 2019	Evaluate the Plan and update sections of the Plan annually. Implement the mitigation actions.
Apr 2019	**EM Town of Henniker Sheltering Plan**	The EMD maintains current sheltering information and contacts. During an emergency situation the EMD may activate the shelter following guidelines established with SAU officials and DHHS procedures	Entire Town	**Moderate**	Emergency Mgt	Began coordinating a shelter agreement with the Henniker Community School	EMD and SAU will work to update the MOU. Work with Capital Area Public Health Network to develop shelter plan, reach out to Rotary for help with staffing the shelter
Dec 2018	**EM Dam Operational Plans (DOPs)**	Archived several NHDES High, Significant or Low Hazard private dam plans on record that	Dams	**High**	Emergency Mgt	Continued collecting current High	Annually review the overall effectiveness of the dam plans

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 Effective-ness Low Moderate High	Respons-ibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
		need to be reviewed. Most plans are done by engineers.				(H) hazard DOPs	
Oct 2017	**EM Jackman Dam Emergency Action Plan (EAP)**	An emergency action plan was developed in by PSNH (Eversource) for the Jackman hydroelectric project on the Contoocook River in Hillsborough. The Town of Hillsborough provided a copy to Henniker as the dam is up stream.	Western at Henniker along the Contoocook River	**Unknown** - untested	Emergency Mgt with Town Administration, Fire Dept	Drills for the Jackman Dam were conducted.	EMD will continue to work with Henniker Fire to review potential overall impact of a various breach levels.
April 2019	**HD Culvert Maintenance Plan**	The Highway Department has a culvert maintenance plan to replace those most in need first. Nearly 100 culverts have been replaced 2014-2019.	Town Roads	**High**	Highway Dept	Upgraded 30 culverts in 2018, 19 on Western Avenue and/or inspected, up to 100 culverts replaced or inspected in the last 5 years.	Inspect and upgrade /upsize culverts according to the culvert replacement plan or as otherwise needed.
Summer 2019	**NEC Incident Action Plan 2019**	NEC held 3 Tabletop exercises, 1 with NEC & Town of Henniker first responders, 1 with NEC Senior Administrative team, and 1 with NEC On Campus First Responders to develop a new Incident Action Plan	New England College	**Unknown – has not been tested**	NEC Senior Administrative Team	IAP currently under development	Undertake a drill/ exercise in fall 2019 to test new IAP
2014	**NEC Incident Action Plan 2014**	Response to specific plan to address issues such as severe weather, active shooter. Can reach FD on one frequency on new radios since 2014.	NEC Campus	**High**	Campus Security	Update Currently underway, potential fall 2019, purchased 10 radios.	Work on issues regarding communication.
2015	**PB Master Plan Update 2015**	The Plan is used by the Town for reference, to establish rules, and to generate ideas.	Entire Town	**Moderate**	Planning Board	The planning Board revised the Master Plan which was	Update the Master Plan in the next few years.

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 Effective-ness Low Moderate High	Respons-ibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
						adopted Sept 9, 2015.	
2015	**PB Annual Capital Improvements Program**	The CIP is updated yearly by a designated CIP Committee. Tight budgets have led to some underfunded cap reserve funds. The document is provided to the Budget Committee.	Entire Town	**High**	Planning Board	Currently a new subcommittee is being established.	Update the CIP on an annual basis. Consider the need to continue to fund Capital reserve funds.
Sept 2016	**PD Active Shooter Response Plan 2016**	The response Plan covers New England College and the schools for active shooter scenarios. Fire and Rescue is involved, and the plan was revised in Sep 2016.	New England College, Elementary & Middle Schools	**High**	Police Dept	Updated the document in 2016 to reflect changes in active shooter response.	Evaluate the Plan after drills are conducted to see where improvements are needed. Evaluate White Birch Center for response and evacuation as a result of Active Shooter capability.
2018	**SD Emergency Operations Plan for Elementary School**	The EMP contains information for fire drills, what students, parents, and teachers will do in the event of an emergency. All schools in the Henniker School District.	Henniker Community School	**High**	School District	Annual updates to the School EOP	Add changes from the drill exercises to the EOP to make the school safer for students.
Oct 2012	**SD Safe Routes to School Travel Plan 2012**	Safe Routes to School project completed by the School and Town Departments together. Examines intersections of Gould Street, Western Ave/Main Street and NH 114 streets, bridges, and sidewalks. Purpose is to enable safer walking for students to and from school.	Henniker Community School, Western Ave, Main Street	**Moderate**	School District with Town Administration	No changes since the last Plan. Overall difficulty with Town Main Street and crosswalks for all people	Work with the Town, NEC and Police Dept, and Main Street businesses, and NH DOT to enable safe walking of downtown
		THIS ROW INTENTIONALLY LEFT BLANK					

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 Effective-ness Low Moderate High	Respons-ibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
HENNIKER BUILDING CODES, PERMITTING, INSPECTIONS							
April 2019	**FD Inspection Upon Complaint Program**	Fire dept does inspections for occupancy, places assembly, fireworks, event tents and inspections upon complaint.	Entire Town	**High**	Building Inspector with Fire Dept assistance	Inspected those buildings, gatherings, etc when complaints came in. Building Codes were voted down at Town meeting twice in the last 5 years	Would like to see the State adopt the current Life Safety Codes version, and would like the Town to adopt the State Building Codes
April 2019	**FD Assembly, and Woodstoves Inspection Program**	Department performs inspections for places of assembly two times per year, and multifamily once per year. The FD inspects new buildings for certificate of occupancy. Woodstoves also inspected.	Entire Town	**Moderate**	Fire & Rescue Dept and Building Inspector	Inspected existing building, places of assembly, woodstoves, buildings during construction.	Provide public education for building safety
2009 Codes	**FD NFPA 101 Life Safety Codes Occupancy Inspections 2009**	Contains 15 types of occupancies that may be inspected by Fire Departments **- Places of Assembly** - Mercantile - Business - Health Care - Ambulatory Health Care - Residential Board and Care **- Day Care** **- Educational** - Apartment Buildings - Lodging or Rooming Housing - Hotel or Dormitory - 1 and 2 Family Dwellings - Industrial - Storage - Detention and correctional	Places of Assembly, Day Cares, and Educational sites	**High**	Fire Dept	Continued inspections for these 3 types of buildings. Granted Certificate of Occupancy	Would like to see the State adopt the current version (2015). Develop a pamphlet to assist with self-inspections and one for getting people ready when it is time to build new buildings.

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 Effective-ness Low Moderate High	Respons-ibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
2009	**FD NFPA 1 Fire Codes Permitting**	Section 1:12, and Table 1.12.7a specifically outline instances when permits are required	Select Structures	**High**	Fire Dept	Continued to issue permits	Would like to see the State adopt the current version
2010	**PB NFIP Participant**	Enrolled in NFI program. The Town is required to have a Floodplain Ordinance and provisions in the Subdivision Regulations. The Floodplain Ordinance was just updated 2010 to the specifications of the State. New DFIRMS were being digitized for Merrimack County and adopted by the Town in 2010.	Floodplains	**High**	Planning Board, with Building Inspector	BI inspected new development the floodplain area. Town has collected certificates of elevation. USACE	Use FP regulations and USACE flowage easements to ensure new development complies with regulations.
Circa 2014	**TA NH Department of Labor Inspection of Town Buildings**	All town buildings are subject to inspection by Dept of Labor. Recommendations will be provided for improvements.	Town Buildings	**Moderate**	Town Administration	NHDOL completed facilities inspection annually during the CIP process each year and programmed improvements inputted	Placed recommendations by the NHDOL into the annual CIP process for funding the improvements.
HENNIKER LAND USE ORDINANCES, REGULATIONS, and TOWN ORDINANCES							
Feb 2010	**PB Floodplain Development Ordinance in the Zoning Ordinance 2010**	Updated the Zoning Ordinance to Comply with NFIP Requirements in 2010, 2011. The new maps were adopted 2010.	Entire Town	**High**	Planning Board and Building Inspector	Used during PB review of development applications and by Building Inspector for compliance	Periodically revise and update the Floodplain Ordinance to maintain compliance with FEMA requirements. Coordinate with US Army Corps of Engineers about ordinance improvements or zone changes

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Mar 2019	**PB Zoning Ordinance 2019**	Ordinance has provisions that restrict hazardous and noxious activities in Town, junkyards, excavation, natural preserve areas, agritourism, lot size regs, and more.	Entire Town	High	Planning Board	Updated by the Planning Board in 2019 for frontage development and lot size. The subdivisions on a paved road must be continuous to the Center of town.	Update the Zoning Ordinance for items such as lot layout, large solar arrays.
Mar 2004	**PB Wetlands Conservation Zoning Ordinance 2004**	Wetlands Conservation District protects water quality, flood storage, potential water supplies, and aquifers. Originally developed in 1989, amended in 2004.	Wetlands	High	Planning Board	Used during PB and Cons Comm review of development applications	Review & update ordinance in response to legal and scientific changes and to fit Henniker's needs. Increase enforcement.
Mar 2016	**PB Lot Sizing and Frontage Zoning Ordinance 2016**	Ordinance for lot frontage -No buildings should be permitted on lots without the town road frontage enforced.	Entire Town	Moderate	Planning Board	Revised lot size and frontage requirements for single lots with and without town sewer and water and for multi-family dwelling lots	Educate the public and real estate community about the Town's frontage requirements.
Mar 2019	**PB Natural Preserve Areas Zoning Ordinance 2019**	Developed to encourage purchase of wild, natural preserve areas to maintain forest, recreation, wildlife lot characteristics	Identified Undeveloped Lots	Moderate	Board of Selectmen and Cons Comm	Used during PB review of development applications	Identify prime lots to purchase and obtain permanent easements. Locate grants and add to Cons Comm budget.
Mar 2009	**PB Manufactured Housing Park Zoning Ordinance 2009**	Ordinance last updated in 2009. Provides standards for the health and safety of manufactured housing occupants, including fire, waste, emergencies, etc/	Entire Town – New Developments	Moderate	Planning Board and Building Inspector	Used during PB review of development applications and by Building Inspector for compliance	Review the ordinance to ensure it meets Henniker's needs.

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Mar 2011	**PB Wireless Communication Towers Zoning Ordinance 2011**	Guidelines for the siting of personal wireless service facilities, considering adverse impacts on environment, vistas, conservation lands, wildlife, health.	Entire Town	**High**	Planning Board	Used during PB review of development applications	Periodically update ordinance in response to legal and scientific changes and to fit Henniker's needs.
Jan 2019	**PB Subdivision Regulations 2019**	Includes provisions such as new road standards, subdivisions not permitted on Class VI roads (eliminates problems with emergency personnel access to homes), drainage requirements, recognition of flood hazards, protection of natural and historic sites.	Entire Town – New Developments	**High**	Planning Board	Updated in 2019 to support the new frontage requirements, lot sizes & pavement continuity, Revised driveway standards frontage for keyhole lots.	Update further the lot layouts.
Jan 2019	**PB Site Plan Review Regulations 2019**	Includes standards for landscaping buffers, traffic, fire safety, access management, pedestrian and bicycle safety, noise, flood hazard compliance, erosion plan, etc.	Entire Town – New Developments	**High**	Planning Board	Updated in 2019 to support the new frontage requirements, lot sizes, & pavement continuity, Revised driveway standards frontage for keyhole lots.	Update further the lot layouts.
Sep 2012	**PB Earth Moving Ordinance 2012**	The Town has a materials excavation and reclamation ordinance which provides operational and reclamation standards.	Excavation Areas	**High**	Planning Board	Used during PB review of excavation applications. Used by Building Inspector when issuance permits and for compliance	Review the regulations and update as necessary to fit Henniker's changing needs.

Source: Henniker Hazard Mitigation Committee

ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The administrative and technical capabilities in **Table 43** 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 43

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 Low Moderate High	Responsibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
HENNIKER ADMINISTRATIVE PROGRAMS, POLICIES, ORDINANCES, MUTUAL AID AGREEMENTS, PARTNERSHIPS, OPERATIONS, PROCEDURES							
Mar 2019	**ACE Informal Agreement Restricting Access from Ramsdell Road During High Water**	ACE personnel has worked with Highway Department to access half of Ramsdell Road which the general public cannot cross. Residents must use alternative access to homes	Ramsdell Road, Hopkinton Lake inundation area	**Moderate**	US Army Corps of Engineers	Closed Ramsdell during high water conditions nearly every fall.	Write up a formal agreement with Highway Dept indicating the conditions and protocol for Ramsdell Rd closure. Add signage for public understanding of closures
Mar 2019	**ACE Hopkinton Lake Inundation Elevation 420' Policy**	The USACE has a description and policy for the closure of the various gates in Henniker dependent upon flood elevation. With a 416' spillway crest elevation reached, ACE staff will contact local officials if discharge will occur. The 420' inundation level is the limit of flowage easements in Henniker and problems may occur above this level.	Hopkinton Lake Reservoir 420' level inundation level, Floodplains, certain Town Roads	**High**	US Army Corps of Engineers	Provided the Town with a list of the elevations and closures of gates on Town roadways. Highway Dept has a key to the gates.	Work with the Town to develop signage for residents and visitors on the affected roads. Engage in public education efforts on when and why gates may be closed.
Jul 2009 (revisions)	**BOS Class VI Road Policy**	The Town of Henniker has adopted a Class VI Road Policy, contained within the overall Selectmen's Policies, Section I General Policies,	Class VI Roads	**High**	Board of Selectmen with Planning Board	No updates, but Planning Board and Board of Selectmen have accepted	Require review of maintenance agreements to Class VI Road Policy. Clarify

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		1.2 Building Permit Applications.				waivers (Locus Lane) from landowners	the waiver form for landowners to sign
May 1998	**BOS 911 Numbering of Buildings Ordinance, 1998**	Town ordinance for emergency services and also facilitates the building permit process. Information on number posting is submitted as part of Town Report. The Town of Henniker has completed 911 mapping in compliance and conjunction with Department of Safety.	Entire Town	**Moderate**	Board of Selectmen	No updates to ordinance, but numbering has been followed for new construction	Update for new construction. Enforce local ordinance for compliance
May 2018	**BOS Vehicles and Traffic Town Ordinance 2018**	Several ordinances protect vehicular, pedestrian, and bicyclist safety. One-way streets are identified, speed limits established, parking areas and restrictions, OHRV operation, etc.	Town Roads	**Moderate**	Board of Selectmen	TAP grant obtained to improve pedestrian infrastructure. Updated the ordinance, including reduced maximum speed limit to 35 on Town roads.	Submit application for vision session for Main Street re-design (EPA Recreational Economy Grant)
Dec 2010	**BOS Parks and Recreation Areas Town Ordinance 2010**	Provides framework for rules for the parking of vehicles in the Riverfront Parking Area and provides tools for enforcement, snow maintenance, prohibits smoking at the Ball Field, etc. First adopted 1993.	Contoocook Riverfront Parking Area, Ball Field	**Moderate**	Board of Selectmen, Police Dept	PD used the ordinance to ensure compliance	Review ordinance to ensure compatibility with the Town's current needs. Coordinate with USACE to receive a list of their easements to determine if any recreational changes or improvements could be made
Mar 2000	**BOS Driveway**	Contains standards for the plans and construction of private	Driveway – New	**Moderate**	Board of Selectmen with	Used ordinance for	Highway Department to present at

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	Ordinance 2000	driveways, wetland consideration	developments		Highway Dept	driveway applications	upcoming Planning Board meetings change to standards, apron, etc for potential ordinance change
Mar 1993	**BOS Noise Town Ordinance 1993**	Discourages unreasonably loud noises, with exceptions provided and enforcement ability provided. Enforcement is difficult, loud vehicles are the problem.	Entire Town	**Moderate**	Board of Selectmen, Police Dept	PD used the ordinance to ensure compliance	Encourage enforcement of the ordinance, then review ordinance to ensure compatibility with the Town's current needs.
Fall 2018	**BOS Joint Selectmen's Meetings with Surrounding Towns and to Discuss issues**	Periodic meetings held, including for regional issues. Shared ambulance with Bradford, annual discussion.	Entire Town	**Moderate**	Board of Selectmen	Last meeting was held with Hopkinton and NHDOT over Dunkin Donuts location.	Continue to meet with surrounding Town as issues develop.
Nov 2006	**CC Cons Commission Easement Program and Plan**	As of Oct 2002 Natural Resources Inventory, the Town had about 3,500 acres of conservation easements (more current data is not available). Commission monitors open space and conservation lands and has developed criteria for acquisition of new Conservation land. The Cons Comm receives 100% of the land use change tax.	Entire Town	**High**	Conservation Comm	Purchased or obtained donated conservation easements, worked with partners to construct trailheads & kiosks, and informed the public of conservation lands and trails	Identify future conservation lands to purchase or obtain easements, including Western Avenue flood storage capacity. Update the Conservation Plan.
April 2019	**CC Wetland Monitoring Program**	Conservation Commission monitors wetlands through data collection and the permitting process. Provides comments on	Entire Town	**High**	Conservation Comm	Reviews and comments on wetlands applications to ensure minimal	Enhance program to identify target areas to conserve in the future.

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		Wetlands permit applications. This program helps mitigate the effects of natural disaster events				impact and erosion and adequate drainage for projects	
April 2019	**EM Capital Area Public Health Network Point of Distribution Plan**	Capital Area Public Health POD Regional plan identifies five locations for points of dispensing. EMD will maintain plan and updates. Henniker is assigned to Hopkinton Middle School	Entire Town/ Capital Area	**Moderate**	Emergency Mgt	Participated in drills and CAPH activities	EMD will work with CAPHN to get approval from DHHS for a closed POD at New England College
April 2019	**FD Capital Area Hazardous Materials Team Mutual Aid**	Department has access to hazardous material support through the Capital Area Mutual Aid. The FD utilized this in April 2019 for a gas leak	Entire Town	**Moderate**	Fire & Rescue Dept	Was a recipient of mutual aid in April 2019 for a gas leak	Send at least 1 person in 2020 for training to obtain haz mat technician status.
Sep 2014	**FD Standard Operating Guidelines**	Updated guidelines include mass casualty, floodplain, emergency operations center, vehicle extraction, cold water rescue, elevator rescue. Guidelines are under revision.	Entire Town	**Moderate**	Fire & Rescue Dept	Drafted a new SOG document.	Complete revisions to the draft SOG document and acceptance by Fire Dept
Oct 2018	**FD Fire Prevention Program**	Activities include reviewing proposed development/ alterations for life safety, Elementary school outreach, NEC NIMS outreach, and having a juvenile fire safety specialist. As a result, Henniker Community School has posted evacuation routes and safe rooms.	Entire Town	**Moderate**	Fire & Rescue Dept	Developed a NECRA Fire Academy (teaching). Conducted yearly fire safety program with Rush Square.	Expand the NERA Academy so FD is hitting more of the NEC population. Form a Fire Prevention committee for community outreach.
Jan 2019	**FD Capital Area Mutual Aid Member**	Henniker has been a member since the 1970s. The area encompasses about 22+ towns. Rejoin annually in January	Entire Town	**High**	Fire & Rescue Dept	Fire & Rescue Dept is now on the Training Committee. Deputy Chief is on the SOG Committee.	Improve the radio/ data communication system.
April 2019	**FD School Reaction**	Fire Dept works with School staff. Have had	Henniker Communit	High	Fire Dept	Reviewed and conducted	Conduct drills, exercises, and

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	Procedures and Activities	meetings and discussions on how we would utilize each of our resources depending on various issues presented with various situations at School. We would always use a joint command structure when we have an incident at the power plant. School and Henniker Fire Dept need to work well together to alleviate any problem occurring at their plant.	y Elementary School			drills semi-annually.	site visits with the School
April 2019	**EM Capital Area Public Advisory Council Member**	As a member of the Capital Area Public Advisory Council, the EMD actively participates in RCC, CERTS, CAPHN and MRC activities as well as having a regional sheltering agreement with other participating towns in the CAPHN network.	Entire Town, Region	High	Emergency Management	Worked to develop a regional shelter agreement, Henniker now pursuing a MOU with the Henniker Community School	Obtain annual membership and undertake responsibility in activities to enable Henniker to be safer from disasters.
April 2019	**EM Capital Area Public Health Network Membership and Participation**	The network created a plan to address mass casualty, health epidemics, etc. The Town is a member of the network and has participated in the group to develop the plan. Drills and training have been conducted.	Entire Town	High	Emergency Mgt	Working to update regional shelter plan as suggested by the state	Hold a drill or training to test the plan
June 2018	**FD Call "Response Cards"**	Call "Response Cards" indicate who responds to which emergencies or disasters within the Mutual Aid Compact.	Entire Town	High	Fire Dept	Updated as needed.	Reevaluate the plan as needed as Henniker grows.
April 2019	**FD Mutual Aid Agreements (MAA)**	Henniker is a member of Capital Area Fire Mutual Aid Compact with 20 towns in the greater Concord area. All towns required to have MAA drills in each community at least every other year. Historic drills included	Capital Area, including Henniker	High	Fire Dept	Held Warm Zone drill in Dec 2018. Added Neighboring towns Hillsborough and Washington to	Expand MAAs to other communities, and provided response and communications capabilities

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		EMS Warm Zone drill in Dec 2018.				the compact agreement.	
2018	**FD Fire Department Standard Operating Guidelines (SOGs)**	Written guidelines include how to handle structure fires, chimney fires, hazardous materials, vehicle accidents. Guidelines are written by the Fire Officers.	Entire Town	High	Fire Dept	Many versions have been written, but not accepted by the Fire Department.	Write and accept SOG's to help the Fire Department operate consistently and safely
1999	**FD Rescue Department Standard Operating Guidelines (SOGs)**	Written guidelines include procedural/ personnel procedures including who should respond to which type of call and how the response should take place, how to safely dress per call, etc. Reviewed annually	Entire Town	Moderate	Rescue Dept	No updates since the last Plan. Rescue did follow existing SOGs during calls.	Review and update Rescue SOGs and add new SOGs when relevant.
Jan 2019	**HD NH Public Works Mutual Aid Member**	Henniker is a member of the New Hampshire Highway Mutual Aid. The Town was the second or third to join. The Department has been called on for equipment but has not yet used the service. The Department is constantly updating the equipment lists. The Town of Henniker still maintains its membership. Also have good, informal agreement with surrounding towns.	Roadways	High	Highway Dept	Received mutual aid after Highway Dept building burned, plowed town roads. NHDOT donated trucks. Assisted Hopkinton when their building built	The Henniker Highway Department plans to inventory its equipment to ensure the list available stays up to date.
Fall 2018	**HD Alternative Access from Army Corps Flooding of Roads**	Department provides an alternative road to access before roads closed by the Army Corps of Engineers: River Road (closed fall 2018, annual closure), Old Concord Road (closed in fall 2018, first time in 8 years), Ramsdell Road, Shaker Hill Road, Warner Road. USACE contacts HD when roads are being flooded	USACE Flooded Roadways	High	Highway Dept	Inspected road conditions to ensure safety of vehicle and consulted with USACE on closures.	Ensure alternative routes (NH114 and US 202) are maintained to ensure access around restricted areas.

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		and should be closed, HD has keys to open gates as they prefer. This flooding occurs at least annually. The Highway Department continues to maintain and monitor areas of concern.					
Mar 2019	**HD Standard Operating Procedure for Snowplowing**	Department has six full-time employees and two part-time in the winter. Each employee has his own plow route. Have standard operating snowplowing procedures which are posted on the website. Bus routes are usually plowed first if needed. SOPs are unwritten	Roadways	**Moderate**	Highway Dept	Used the SOPS successfully, every crew member knows their job.	Update the equipment to maintain routes.
2019	**HD Assists with State Road Maintenance**	Department maintains State roads with sand and salt if the State is busy. This has occurred a few times. The Town of Henniker continues to maintain a good working relationship. Town does winter maintenance of Rush Road, state does summer maintenance.	State Roads	**High**	Highway Dept	Rush Road has been plowed and sanded.	Work with the State to foster a positive working relationship.
2009	**HD Snow Removal Town Ordinance**	Covers depositing snow on roads and mailbox accidents	Town Roads	**High**	Highway Dept	HD followed ordinance during snowplowing	Consider moving mailboxes further back from the road in the ordinance.
2018	**HD Solid Waste Town Ordinance**	Refers to the Transfer Station and Recycling Center, identifies users, materials, hazardous waste, prohibited materials, and regulations for facility use	Transfer Station	**High**	Highway Dept	Residents followed ordinance for waste disposal services	Publicize recyclable items to residents and businesses. Hold an annual Household Hazardous Waste collection day.

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1989	**HD Streets and Sidewalks Ordinance 1989**	Regulations for construction standards, inspection, repair of defects, snow and ice removal procedures and priorities. Highway Department works on roads annually. 2019-2021 Transportation Alternative Program grant applied for and received sidewalk reconstruction.	Town Roads and Sidewalks	High	Highway Dept	Followed during maintenance, construction and plowing of streets and sidewalks. Received recent TAP grant through Safe Routes to School for roads and sidewalk reconstruction including Hall Ave & Prospect Street	Redo sidewalks on Rush Road, Western Avenue, Hall Age, Prospect Street. Routes to School /TAP grant received for Town Road – Hall Ave, Prospect (sidewalks TAP/road surface by Town, downtown area Rush Road sidewalks, drainage improvements town/state, plus an extension of Hall Ave (TAP sidewalks) Town during road surface. Projected timeline Western Ave 2019, Hall 2019, Prospect 2019, Rush 2019, end of Western Ave 2021.
Feb 2018	**HD Flood Monitoring and Diversion Program**	During the floods, the HD will set up patrols in teams of two and monitor different roads. The FD sends patrols with the HD to divert water and assist, including unplugging culverts.	Flooded Roadways	High	Highway Dept	Culverts in several problem areas have been replaced.	Identify and replace culverts to avoid potential road damage and conduct ditch maintenance.
2008	**HD Emergency Flood**	The Highway Department Superintendent, Fire & Rescue Dept, Police Dept,	Flooded Roadways	High	Highway Dept	HD staff was trained in WebEOC	Research and plan traffic control

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	Management System	and EM set up a command center at the Fire station during floods. Subcontractors are dispatched, and constant contact occurs. The Fire & Rescue Dept is the coordinator. This has occurred three times since 2006. USACE worked with the Town in 2006, but not the 2007-2008 floods.					systems with proper safety equipment (i.e. cones, barricades, etc) for the Emergency Flood Management System.
Spring 2019	**HD Procedures to Cutback Overgrown Limbs (Unwritten)**	Removing overhanging (hazardous) limbs near along Town roads will reduce that potential hazard. HD communicates with Eversource, who has a system to evaluate annually to make sure that branches are cut back from power lines to reduce the potential hazards from wind. HD follows RSAs for cutting trees along roadside.	Town Roadways	High	Highway Dept	Annually cut back hazardous trees identified and removed, after state permission. Butter Road will be the next location	Consider writing policy. Continue best management practices for roadside tree trimming. Cut trees back on Butter Road for safety.
Circa 2014	**NEC Agreement with Henniker Community School for Off Site Sheltering**	Children will evacuate into field house or cafetorium during an emergency. First place of evacuation.	New England College	High	School District with NE	Have drilled annually to ensure elementary students know where to go	Install a generator in the field house for the. Place communications such as base radio and phone. Install bathrooms inside fieldhouse.
2016	**NEC Building Coordinator Program**	One per building, as part of normal duties. Positions are keepers of the facility, administrative familiarity with staff and people in building, assist with evacuation, know where building systems, water and furnaces are located.	NEC Campus	High	NEC Campus Security	Program was reestablished to assist with campus security	Better organize a response when an incident occurs, work on quicker response in conjunction

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							with Incident Action Plan.
Jan 2019	**NEC Collaboration Meetings with Police Department**	Each semester NEC's Campus Safety, NEC Office of the President and the Henniker Police Department meet to share trends and information on how NEC and the Town of Henniker impact each other	New England College	High	NEC Campus Security	Met once every semester and shared beneficial information.	Meet with the Police Dept each semester and consider including USACE and other stakeholders on discussions
April 2019	**PD Police Department Mutual Aid**	The Department has a good working relationship with surrounding towns of Bradford, Warner, Hopkinton, Deering, Hillsboro, and Weare. Mutual aid is now covered by NH Statute 105:13	Entire Town	High	Police Dept	Held annual meetings with other Police Depts in the region	Hold more inter-Departmental trainings on active shooter and other topics as well as with surrounding towns.
May 2019	**PD Monthly Staff Meeting**	Discussion includes any issues from the prior month, plans for the future, Department issues, suggestions for improvements, available trainings etc.	Entire Town	High	Police Dept	Held monthly staff meetings.	Hold monthly staff meetings
January 2019	**PD Standard Operating Procedures**	The Department has Standard Operating Procedures which are under constant revision	Entire	High	Police Dept	Revised SOPs for call out, chain of command, officer responsibilities	Update SOPs for compliance with state and federal regulations and to uphold safety.
Fall 2018	**PD and School Security Collaboration**	Working with School to enhance security measures. Will include plans and training. Town Officers conduct trainings and site visitations to maintain familiarity with the site. Conducted tabletops with school.	Henniker Community School on Western Ave	High	Police Dept with School	HSEM conducted a safety assessment of the Henniker Community (Elementary) School in 2017	Recommend a more secure locking and containment capability. Continue to maintain the relationship with School and Town emergency services.

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April 2019	**SD School District Agreement, Safe School Act**	The agreement initially developed in 2009 covers what types of information needs to be shared with the Police Department, including family situations, weapons, disturbances. MOU is between the John Stark schools.	Elementary and Middle Schools	High	School District with Police Dept assistance	Updated Agreement in 2019, continuation re-signed by all parties. Have done lectures and tabletops.	Perform a scaled drill for active shooter at the Community School
Will Try in Winter 2019-2020	**SD Blizzard Bag Program**	The Learning online/ Blizzard Bag initiative allows students to complete up to five emergency days through Learning online/Blizzard Bag lesson plans. These KELN days will count as "traditional" school days. For this school year, three two Blizzard Bag days were used. All students have a backup of paperwork in the event there is a loss of power/interne. Annually, the district prepares for 5 blizzard bag days.	Henniker Community School	High	Henn Comm School, but John Stark SD is also working on it - more complex at SD level	Beginning to develop policies and procedures to support two days of no school.	Challenge is for children without computers, so they are able to manually perform work. School offers Chromebooks to all students (keeping them charged can be difficult during outages)
April 2019	**SD Water Testing At Each Source and at Public Water Supply**	Henniker has all wells tested per state requirements. Water samples are taken and sent to certified labs. The results are submitted to the state. New law just took effect. Every bubbler, every faucet, every water source to identify water contamination in pipes.	Henniker Community School	High	School District	New state law, had to approve funding to conduct this water source inspection.	As mandated, change out fixtures and pipes that are deficient. Continue with annual source water testing.
Fall 2020 TBD	**SD Standard Operating Procedure: Run Hide Fight**	Working on an SOP to ensure teachers have the option for the Run Hide Fight. A work in progress, planning the next	Henniker Community School	High	School District with Police Dept	Revising policy from Shelter in Place/Lock Down to Run, Hid and Fight	Once completed, SD will drill on the new Run Hide Fight protocol
June 2019	**TA Safety Committee**	The Town has a Safety Committee but has a history of not meeting regularly. Primex taxed	Town Facilities	High	Town Administration	Subcommittee met with a worker's compensation	Schedule and hold routine Safety

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		the Town $3,000 for missing two quarterly meetings, for non-compliance.				specialist, and the Town of Henniker Safety Committee now meets on a quarterly basis.	Committee meetings.
2008	**TA Emergency Communication Procedures**	Although the Board of Selectmen is in charge, the Town Administrator typically provides the support needed. Communication activities include serving as a conduit for activity and communicating among the departments. The Emergency Management Plan is followed.	Entire Town	**Low**	Town Administration	New EOP was adopted in September 2008. No activity since last Plan.	Simplify the EOP in all areas, including communication. Update 2002 Master Plan to reflect current EOP emergency communications procedures
Circa 2008	**TA Flooding Compensation Process**	The Town Administrator has a thorough process for recouping funds from FEMA for flooding disasters. Coordination occurs with the Emergency Management, Finance Director, and Highway Superintendent. Participation in Statewide conference calls is undertaken, as is meetings with State and FEMA officials.	Areas where flood damage has occurred	**High**	Town Administration	The reimbursement process has been reviewed.	Biannual reviews of the process will occur. The EMD should receive a full, complete detailed report of expenses to complete the After Action Reports.
Jul 2016	**WB Testing of Faucets and Water Sources**	About every 5 years, White Birch must test the interior water pipes and faucets. Building is on Town water system, and the Town tests annually.	White Birch Center	**High**	White Birch Center	Tested the sources, all were safe.	Must test again in two years and replace any non-compliant fixtures or pipes
Jan 1990, July 2016 amendment	**WD Cogswell Spring Rules and Regulations 1990**	Includes regulations for service pipes, liability, rents, use of water, applications for new connections as well as the history of the pipes.	Area of Water Lines (RV & CV Zoning Districts)	**High**	Cogswell Springs Water Works Dept	July 2016 issued an order for outside water restrictions because of drought conditions. Rules used by	Review the regulations to ensure they meet the present day need of Henniker

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						WD for new connections and maintenance.	
Jan 1990	**WD Cogswell Cross Connection Control Regulations 1990**	Purpose for the protection of the potable water supply of the Town. Includes reports, inspections, testing, etc. No recent water violations. One 2017 violation for submitting an incorrect form	Area of Water Lines (RV & CV Zoning Districts)	High	Cogswell Springs Water Works Dept	Used by WD for maintenance and record keeping. Produced Consumer Confidence Reports annually. Tested for low levels of copper, lead, chloride, iron, sodium, sulfate, zinc & small levels of uranium and alpha radiation	Test the two active wells in accordance with law, treat with sodium hydroxide to raise the pH. Well #3 is offline but available as a backup.
2009, Zoning Amendments Mar 2018	**WW Wastewater / Sewer Ordinance 2009**	Prevent the introduction of pollutants into the municipal wastewater system and regulate the construction, use, repair, alterations and discontinuance or abandonment of sewers, drains, emergency operation, etc	Area of Sewer Lines (RV & CV Zoning Districts)	High	Wastewater Dept / Sewer Commissioners	Used by WW for new permits and to maintain the lines. New Lot specifications- Zoning amendments related to senior housing in RV & CV	Update billing and administrative items, grease ordinance.
April 2019	**WW Wastewater System Asset Management Program Draft Apr 2019**	Prepared by Underwood Engineers, the document contains inventories and information on the level of service, malfunction impacts, critical projects, life cycle costs, funding, and communications. Identifies areas of criticality and overall performance scoring	Wastewater Treatment Facility, Ramsdell Rd Pump Station, West Henniker Pump Station	High	Wastewater Dept / Sewer Commissioners	Developed a new draft Asset Management Program for facilities and pipes	Replace and upgrade those assets of greatest need. Ensure appropriate funding is set aside annually to pay for repairs, upgrades, and emergencies.
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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 Low Moderate High	Responsibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
HENNIKER TECHNICAL SKILLS, TRAINING, AND DRILLS							
2017	**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	New EMD since last Plan. Took training courses	Expand trainings opportunities for emergency management
Oct 2017	**EM NIMS Compliance**	Originally issued on March 1, 2004, by the Department of Homeland Security (DHS), NIMS provides a consistent nationwide template to enable Federal, State, tribal, and local governments, nongovernmental organizations (NGOs), and the private sector to work together to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity. This consistency provides the foundation for utilization of NIMS for all incidents, ranging from daily occurrences to incidents requiring a coordinated Federal response.	Entire Town	**High**	Police, Fire, Rescue	Used NIMS and ICS during disaster events	The EMD will make a yearly schedule to collect data from Town Departments and will upload the information into the NIMS database to ensure compliance with the National Standard. Once uploaded the EMD will issue a report to the Chief's or Department Heads so a plan for improvement and training can be developed and implemented.
April 2019	**FD Monthly In-Service Training**	Training is not mandatory, but people are encouraged to attend. Recent training has included thermal imaging, vehicle extrication, SCBA exercises, and elevator rescue.	Entire Town	**Moderate**	Fire & Rescue Dept	Continue to improve probationary packet for new Fire Fighters.	Develop the Probationary Packet into a mentorship/training program.
2009	**FD Rescue Training**	All rescue squad members are Nationally Registered EMT's or higher.	Entire Town	**High**	Rescue Chief	Added more paramedics as well as 24-hour EMT	Provide paramedic level service 24/7

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						coverage to the town, added Trauma Case Reviews with Pats Peak Ski Area	
April 2019	**FD Monthly EMS Training**	Monthly EMS Training is held to meet the national recertification of 48 hours every other year.	Entire Town	**High**	Rescue Chief	Added additional personnel to the rescue roster	Use the QA/QI program to develop training programs.
April 2019	**FD NIMS Training**	All responders are required to have had NIMS training an incident command system and digital radio training.	Entire Town	**High**	Fire & Rescue Dept	Online training available for all members	Develop continuing education training for ICS.
May 2018	**FD Annual Mutual Aid Training**	A drill was held in May 2018 in Henniker. Department attends 10 per year in other towns. Drills have included structure fire, lost people, vehicle accidents, dormitory evacuation. All mutual aid towns are invited to attend.	Entire Town	**High**	Fire & Rescue Dept	Henniker hosts a mutual drill every other year. The drills have included Mayday, structure fire training, Air National Guard Helicopter and ski lift evacuation.	Increase our attendance at these drills.
April 2019	**FD Pre-Planning for Structural Hazards**	Pre-planning program is being developed to identify hazards in structures.	Entire Town	**High**	Fire & Rescue Dept	Started using I Am Responding software to allow all members access to preplanning data	Develop the preplan program to encompass all target hazards structures
May 2016	**FD Planned and Executed Tabletop and Field Drills**	Planned and Executed Tabletop and Field Drills with multiple Departments at NEC.	Entire Town	**High**	Police, Fire, Rescue & Emergency Depts	Held active shooter training at NEC in 2016	Hold tabletop drills with Departments and Schools.
2014	**FD Capital Area Public Health Network Training**	Point of Dispensing (POD) for Weare Middle School at Hopkinton Middle School for distribution of vaccines or pharmaceuticals for	Entire Town, Weare Middle School	**High**	Fire Dept	Plan now in place for Weare Middle School PDF	Conduct training with CAPHN

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		communicable disease, human, biological problems, exposure to chemicals, etc.					
April 2019	**FD Fire Fighter In-Service Training**	Hold monthly in-service training sessions. Members have to be recertified in certain areas annually and some are water rescue specialists. Training includes but is not limited to EMS-related activities, hazardous materials, rescue, etc and maintaining standard fire suppression skills per state and federal requirements	Entire Town	High	Fire Dept	All procedures have been reviewed and/or updated in addition to the mandatory recertification in all applicable areas and specialized training for technical rescues, water rescue, incident management, etc.	Hold weekly in-service training in addition to specialized training at the state fire academy and national academy.
November 2018	**FD EMS Mass Casualty Training**	Training occurs on a regular basis for continuing accreditation. FD must continue to keep its accreditation by training and volunteers take a 24-hour refresher course every 2 years.	Entire Town	High	Fire Dept	FD volunteers continued to keep the Dept's accreditation with appropriate training. Acquired safety gear and training for EMS in the warm zone operations	Certify members to state and national training requirements.
April 2019	**FD Fire Department Monthly Training**	Department trains once per month. Developed a schedule of training for Fire Department activities. The schedule will enable members to plan accordingly to attend training sessions.	Entire Town	High	Fire Dept	Four new members are now FF Level 1 certified.	Encourage more members to become NIMS compliant and certified Level 1. All members should be CPR and defibrillator trained.

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July 2017	**FD Explorer Post Program**	The Explorer Post gives experience of community and volunteering to 15-21-year-olds. The Fire Department gets assistance and the teens may one day join the Fire Department, or establish a career, as a result of their positive experience	Entire Town	Low	Fire Dept	Added explorer club and post	Expand membership and opportunities for the members. Secure grants for equipment for the members
Oct 2018	**FD Recruiting Program**	Encourage interested town members to join the Fire Department	Entire Town	High	Fire Dept	Held open house during Fire Prevention Week in October 2018	Conduct more community outreach to generate interest
June 2018	**FD Fire Academy Training**	Fire Department staff have undergone required training at the Fire Academy.	Entire Town	High	Fire Dept	Added additional trained members to FD	Send members to the academy for additional training
April 2019	**HD Department Training Program**	Recent training of employees has included drainage control, erosion control, chainsaw and forklift training, and vehicle maintenance, employees attend about five sessions per year. Primex holds safety training (Flagger, traffic control, culvert design), not reactive trailing on emergencies.	Roadways	High	Highway Superintendent	Emphasis from supervisor on training staff, encourages training, has a program in place. Highway personnel continue to attend classes relevant to the needs of the Dept	Add more practical training to the annual list of sessions, including ICS Training.
April 2019	**HD Training, Road Agent Certified as a DES Culvert Maintainer**	This is a consistent effort to improve service delivery through education acquired by participating in online training activities and program offered through the NHMA. DES offers Culvert Maintainer program to enable small upgrades of culverts without permits	Entire Town	High	Highway Dept	Highway Supervisor received Culvert Maintainer certification. Other recent, larger culvert upgrades were performed with DES permits as appropriate.	Send at least one more Highway Dept crew member for Culvert Maintainer certification.

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2019	**NEC Campus Training and Drills**	College supports the Run, Hide, Fight concept and has trained staff, faculty and students	NEC Campus	High	NEC Campus Security	Undertook training sessions and drills with Faculty, Staff, and Students in the Run, Hide, Fight concept	Publicize the concept of Run, Hide, Fight concept with the student body, talk to students in classrooms, . Invite Henniker emergency responders to participate
November 2018	**PD Annual Training**	The Dept qualifies two times per year (a day and night shoot) for firearms, completes continuing education for full-time and part-time officers. Full-time officers complete minimum of 8 hours training yearly. Continuing education occurs on different topics.	Entire Town	High	Police Dept	Held trainings for officers each year, received certifications.	Attend annual training for certifications.
August 2018	**PD CPR/ First Responder Recertification**	Rescue trained Police Department on using defibrillators, applying CPR and basic first aid,.	Entire Town	High	Police Dept	Received CPR, AED training in August 2018	Use NIMS command post structure during a critical incident.
November 2018	**PD Officer Training and Certification**	The Department's 9 full-time officers and 2 part-time officers are trained and certified.	Entire Town	High	Police Dept	Hired 1 additional full time position to enhance PDs effectiveness	Hire additional part time officers
Summer and all 2018	**PD Active Shooter Drills / Tabletop Exercises**	The Police Dept held tabletop (TTX) drills with NEC and the Henniker Community School. The PD also held a seminar with the SAU admin regarding Active shooter response	Entire Town, Community School, New England College, SAU Building	High	Police Dept	Held TTX drills with NEC, the Henniker Community School, and held a seminar with the SAU admin regarding Active shooter response	Hold a large scale drill with actors, involving the many school stakeholders

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Feb 2019	**SD Regular Drills with Students**	Each school is required to conduct 10 drills per year. Continues to add changes from the drill exercises to make it safer for students. Make improvements from what works from other schools.	Henniker Community School	High	School District	Had about fire drill, evacuation, to go field house, and more. About 10 drills a years.	Listen and watching to what other schools and towns are doing, constant learning process to determine what works the best.
April 2019	**WB Drills with Students and Seniors**	White Birch undertakes its emergency response plan with drills. Typically hold a minimum of 9 drills per year for both school age children and seniors.	White Birch Center	High	White Birch Center	Held drills such as Shelter in Place, Lock Down, Evacuation and Reunification	Identify a new evacuation location for WBC (now it's a playground), perhaps to a cordoned off section of parking lot
April 2019	**TA Attendance at Seminars by Town Officials**	Seminars by NH HSEM, NHMA, others attended by Selectmen, Town Admin, Finance, Assessing, Planning Board and more. Regularly attend as workshops are available.	Entire Town	High	Town Admin	Economic Development seminars, Town staff attend Planning & Land Use conference	Challenge is finding the affordable training. The in-kind time is fine to use, but trainings are expensive. Host trainings in Henniker to encourage fee waivers and involvement
2016	**NEC Tabletop Exercises**	Campus Security holds Incident Command over three different populations (students, faculty and staff). Exercises have been assisted by HSEM	NEC Campus	Moderate	Campus Security	Held tabletop exercises for students, faculty and staff.	Undertake ICS drill to ensure all understand their respective roles during emergencies
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HENNIKER ASSETS, SECURITY, AND RESOURCES (SPECIALIZED EQUIPMENT)							
April 2019	**EM Communications/ Radio Room in Emergency Operations Center**	Program the EMD radio for use in the EOC	EOC	**High**	Emergency Mgt	Portable radio given to EMD	Upgrade the EOC with new technology as budget and grants permit.
Circa 2008	**EM Emergency Operations Center**	Located at the Fire/Rescue Building (216 Maple Street).	Entire Town	**High**	Emergency Mgt	Identified new location, equipment, supplies and communications.	Hold meetings, drill scenarios, and trainings
May 2019	**EM Coordinate Using School Buses for Evacuation**	Coordinate with the School District to enable school buses need to be used for evacuating residents in the event of flooding, epidemics, fires, etc.	Entire Town	**Unknown** – not yet tested	Emergency Mgt	New activity to be undertaken in 2019	Reach out to the bus company to see if they would be willing to assist the town.
Jan 2019	**EM Emergency Shelters and Warming Centers**	Cooling/Warming centers designated at White Birch Center.	White Birch Center	**High**	Emergency Mgt	Prepared to open warming/ cooling shelter as needed when weather dictates	Update agreements, hold & attend training, and develop plans with appropriate ESFs and appropriate private and regional partners.
April 2019	**EM Barricades and Cones**	Plastic barricades, some have been vandalized, not enough. Town needs to purchase a complete collection	Roadways	**High**	Emergency Mgt	New activity to be undertaken 2019 - 2014	Secure supplies necessary to help HD, FD and PD close roads
2018	**FD Mass Casualty Trailer with Supplies and Equipment**	Obtained a Mass Casualty Trailer, Supplies and Equipment in 2005. Trailer is stored at the Fire Department	Fire Dept	**High**	Fire & Rescue Dept	Replaced or removed outdated supplies and equipment	Replace supplies as they expire. Look to update the contents of the trailer

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2014	**FD Water Rescue Capabilities**	The Town has a boat to use for water rescue in response to the extreme flooding Henniker experienced. More equipment was obtained to facilitate rescue during flooding conditions: trailer, ice rescue suits, ropes, personal flotation devices, and water rescue helmets	Contoocook River, other Water bodies	High	Fire Dept	Sent additional members to get swift water rescue training as well as swift water boat training	Secure funding to replace old and worn equipment and send additional members to training
2019	**FD 24/7/ 365 Coverage 2009**	Enhancement of the FD program occurred to provide 24/7/365 coverage for fire and EMS operations at a minimum of the intermediate level.	Entire Town	High	Fire Dept	24-hour coverage was obtained in 2009 and has continued to present	Hire more members to provide coverage to the town
2019 FD- 26 ports, 12 mobiles (many not programmable), 1 base. EM – 1 port (not programmed). HD- 2 ports, 10 mobiles, 1 base. PD- 12 ports (3 types), 5 mobiles, 1 base. SD - 1 portable.	**FD/ HD/ PD/ EM Depts Radios with Interoperability**	Current Radios allow for this for interoperability. Received grants, now digitally capable on same frequencies to communicate. Most Depts have at least one radio to be able to communicate. Cell phones are popular alternative methods. School District has a Police Dept portable.	Entire Town	High	Police Dept/ Fire Dept / Emergency Mgt / HD	Older radios are being phased out and replaced by newer equipment	Secure funding to assist in the continuation of equipment replacement. Need to obtain 1 portable for Town Office and 1 mobile & 1 portable for Transfer Station. Consider providing 1 portable to both NEC and White Birch Center.
2018 NEC – 10 portable radios	**NEC Radios for Campus Security Communication**	New technology portable radios are owned by Campus Security	NEC Campus	High	NEC Campus Security	Purchased 10 radios in 2018	Purchase additional radios to provide to 1 to the Town of Henniker and for campus buildings and staff

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Circa 2015 new HD generator	**PD/ FD/ HD/ WD/ WW Installed Permanent Generators**	Generators in these essential town facilities will keep emergency operations functioning during a disaster event. Primary Town Shelter is Henniker Community School which has a generator; Community Center is the Secondary Shelter but does not have a generator. White Birch Center can be used as a Warming/ Cooling Shelter has no generator, same as the Library.	Police Dept, Fire Dept, Highway Dept, Water Dept, Wastewater Dept	**Low**	Emergency Mgt	PD & FD run a test cycle on their generators every week and maintain them twice per year.	Fund the installation of permanent generators in the Town Hall, Transfer Station, Community Center (Secondary Town Shelter), Grange, Library, & the Craney Hill tower. Assist White Birch Center with obtaining a generator (For secondary shelters. Research the installation of a solar array microgrid for long term power generation.
Portable PD - 1 FD - 2	**FD/ PD Portable Generators**	All portable generators were all purchased around 2008. They have low wattage and limited use. The PD uses theirs for outdoor crime scene illumination	Kept at Police & Fire Dept	**Low**	Police Dept, Fire Dept	Portable generators are tested and gassed monthly basis	No changes are intended with the future option of a permanent generator or a potential microgrid solar array installation
Prior to 2006	**SD Community School Generator (Primary Town Shelter)**	Installed generator at the School may not have been used since 2008 when the shelter was opened during the ice storm.	Henniker Community School	**High**	School District	Installed generator tested and maintained quarterly	Ensure the generator is protected from the elements to keep it working

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Summer 2018 – Summer 2019	**SD Increase Security Measures at Elementary School**	Changes in the building layout with additional security are currently being discussed for placement of security appliances. All doors are locked from the inside. The School has an internal procedure to use multiple grants for whichever purpose is of a higher priority.	Henniker Community School	High	School District	Security glass to be placed on lower levels, cameras, infrastructure grant into a punch system. Windows will be placed in June 2019, 13 A/C units in the computer lab, key fob system for faculty and staff, completed the building restructuring.	Multiple grants are being applied for. Next round list of improvements includes additional security measures for anticipated increase in student and staff security.
2016 cameras and screen bank	**TA Town Hall Employee and Visitor Safety**	Employees have personal alarms, a video system watches the public counters, and clutter is reduced to eliminate tripping. All systems were inspected semi-annually.	Town Hall	High	Town Admin	Placed video system in the meeting room and throughout the Town Office, screens in Town	Ensure Town Clerk and Admin Asst have a bullet resistant glass. Walls, doors, passwords, panic button upgrades. All Town Office employees should attend a conflict resolution class and participate in a full-scale EOP drill such as active shooter.

Source: Henniker Hazard Mitigation Committee

FINANCIAL CAPABILITIES

The financial resources in Table 44 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) 2019 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 44

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 Effective-ness Low Moderate High	Respons-ibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
HENNIKER FINANCIAL PROGRAM OR FUNDING RESOURCE FOR HAZARD MITIGATION PROJECTS							
Oct 2017	**BOS FEMA Public Assistance Grants (Disaster Recovery Costs)**	Public Assistance Categories A-G may become available when disasters are declared if the community has an unexpired approved Haz Mit Plan. Continue to utilize the FEMA funding to help recover from declared disasters.	Entire Town	**High**	Town Admin with Emergenc y Mgt	Used for PA-B Protective Measures	Utilize the FEMA PA program to help with disaster costs
Western Avenue Bridge Rehab 2016-2019 July 2008 (Ramsdell Road Bridge)	**BOS NHDOTZ Bridge Aid for Rehabilitatio ns: Western Avenue Bridge Rehab**	The Ramsdell Road bridge (July 2008) was rehabilitated and the Western Avenue Bridge is currently being rehabilitated (NH# 15718). NHDOT does biannual inspections and provides the results to the Town. The bridge program is an 80/20 funding opportunity, with only 20% required by towns. 2017-2019- Western Ave Bridge - project includes a 330 foot long two-span two truss bridge and 750 feet of roadway improvements; a historic Pratt truss bridge built in Pembroke in 1915, then moved and reconstructed in Henniker in 1933. The	Contoocoo k River bridges, Western Avenue. Patterson Hill	**High**	Town Administr ation	Rehabilitating the Western Avenue bridge for $5.9m & 550k engineering in 2018-2019 with NHDOT 80/20 bridge funding. Rehabilitated the Ramsdell Road Bridge in 2008. Patterson Hill Bridge may be next	Set aside bridge repair funding into a capital reserve fund for the next bridge to rehabilitate. Identify the next Town bridges to apply for State aid.

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		structurally deficient bridge was closed to traffic in 2009. Jul 2008 Ramsdell Bridge - rehabilitated the existing bridge, constructed new bare concrete deck, replaced deteriorated members and increased carrying capacity of the structure, including the floor system. The project increased the live load capacity of the structure to HS25. Cleaned and repainted the entire structure as well as reconstructed the outboard sidewalk and repaired he abutments.					
Dec 2018	**CC Conservation Easement Fund**	The Conservation Easement Fund protects water supplies through purchase of conservation easements. Land Use Change Tax Fund sets aside funding for conservation easements. As of Dec 2018, the Land Use Change Tax fund had about $26,000.	Priority locations, including Western Avenue	High	Conservation Comm	Obtained Eisner Natural Area conservation easement land, 11 acres on Western Avenue, created river access. Small deposits to the Land Use Change Fund continued when current use land was converted to developable land.	Consider using fund to purchase property for flood storage capacity, water quality preservation, and flood protection along Western Avenue.
April 2018	**EM Grant Funding for Emergency Equipment**	Emergency Management has purchased computers, overhead projectors, tables, communications, office equipment, through EMPG grants.	Entire Town	High	Emergency Mgt	Hosted WebEOC training for towns departments	Train more Town staff and volunteers on WebEOC. Seek grants for communications equipment and new safety complex

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 Effective-ness Low Moderate High	Respons-ibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
							equipment-generators, communicatio ns, and weather stations.
HENNIKER FUNDING PROGRAMS WHICH COULD BE USED FOR FUTURE HAZ MIT PROJECTS							
Not yet used	**EM Emergency Managemen t Annual Operating Budget**	Emergency Mgt Budget can contain funding for outreach programs, mitigation projects.	Entire Town	**Unknown**	Emergenc y Mgt	Not yet used for haz mit projects	Use the annual Emergency Management Operating Budget to finance future hazard mitigation improvements
Not used yet	**PB Town Capital Improvemen ts Program (CIP) Project Funding**	The CIP sets aside funds for large equipment/ projects and should be used for hazard mitigation projects.	Entire Town	**Unknown**	Planning Board	Not yet used for haz mit projects	Updated CIP could include expensive or long-term hazard mitigation projects, such as a microgrid solar array.

Source: Henniker Hazard Mitigation Committee

EDUCATION AND OUTREACH CAPABILITIES

In Table 45, 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 45

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 Effective-ness Low Moderate High	Respons-ibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
HENNIKER PUBLIC OUTREACH PROGRAM, EDUCATIONAL ACTIVITY, NOTIFICATIONS							
Jan 2019	**EM/TA Town of Henniker Website**	The website is actively used to convey critical information to residents. Information has been disseminated using the website for previous flooding events. Currently the EMD uses social media to alert residence of ongoing real time situations.	Entire Town	Moderate	Town Admin w/ Emergency Mgt	Collaborated with town hall employees on Town of Henniker Facebook Page, started new social media page.	Find other social media means to reach town residents. Send staff to training to learn how to use social media more effectively.
Not yet used	**EM Functional/ Medical Needs Survey Form for Residents and Caregivers**	Develop a voluntary Functional/Medical Needs Survey to be posted on the Town website and made available to Town residents at Town Office. Purpose is to enable welfare checks of residents in need of special services during power outages, winter storms, floods, or other hazard events. Place information into a confidential computer database. Create a Functional/ Medical Needs Excel file based on responses from residents to be used by EMS, PD and FD.	Entire Town	High	Emergency Mgt	No activity to date	Develop the functional needs voluntary welfare che3ck form, place on the website, make copies for Town Office and publicize. Use to guide EMS and welfare checks during storms and outages. Place into Excel format and update annually. Expand as needed. See Warner's example online.

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 Effective-ness Low Moderate High	Respons-ibility	Changes Since Last Haz Mit Plan (2014)	Future Improvements to Capability
Oct 2018	**FD Public Education Program**	Held informal programs for seniors on emergency preparedness, and maintain daily call lists	Entire Town,	**High**	Fire Dept	Held Open House in Oct 2018	Establish Fire Prevention committee for public education on fire prevention
Oct 2018	**FD Annual Open House and Fire Prevention Week**	Open House each fall, introduce fire safety to the community and Fire Prevention Week in School.	Entire Town, General Public	**Low**	Fire Dept	Held open house in Oct 2017	Better advertisement to hold a successful Open House
Summer 2015	**PD Drug Take Back Box & Semiannual Drug Take Back Day**	People can drop off unused prescription medication. Getting people to turn in their unused medicine and prescription drugs in difficult.	Police Station	**High**	Police Dept	Managed the PD's Drug Take Back Box & advertised and held "Drug Take Back Day" events twice a year	Organize and participate in the semiannual drug take back days. Dispose of medication in accordance with state law.
Dec 2017	**SD School District Automated Calling System - SwiftK12**	Used for emergencies and notifications. Automated phone, text, email service to parents for alert. Used for snow delays and snow days. A new version is being tested - text, then audio from Department. Through SwiftK12 (formerly called AlertNow/Connect 5). Local radio stations (WZID, WKNE, WKXL, etc) are also used as well as WMUR tv.	Entire Town	**High**	Henniker School District	Enhanced notification system used regularly. Parents/ guardians must contact the school to sign up	Update the system with new notices when parents require notification. Reevaluate the effectiveness of the system as needed.
May 2019	**WB Automated Calling System - One Call Now**	One Call Now system enables text, email or call notification to parents and caregivers of delays, closing, emergencies, and other notifications.	White Birch Center	**High**	White Birch Center	New system since 2014. Also use WMUR for general closing announcements	Try tapping into the school system of automated calling because of the overlap of students attending both facilities and receiving dual notifications.

Source: Henniker Hazard Mitigation Committee

Review of Existing Plans

As described above, during the Hazard Mitigation process and the identification of existing mitigation **Capabilities**, the Hazard Mitigation Committee used their knowledge of the existing plans, policies, procedures and other documents utilized for their Department duties to develop Capability ***Future Improvements***. However, several additional documents not listed in the **Capability Assessment** are also utilized by the community and have a positive relationship to the **Hazard Mitigation Plan 2019**. Most of the documents below are not the Town's documents, but the hazard mitigation goals, objectives, and/or Actions in this Plan are supported by the **Mitigation Support and Resource Documents** listed below in **Table 46**.

Table 46

Mitigation Support and Resource Documents

Latest Adoption or Version Date	Mitigation Support and Resource Documents Not Listed within Capability Assessment Tables
Feb 2007	NH DHHS NH Influenza Pandemic Public Health Preparedness & Response Plan 2007
2008	USGS Flood of April 2007 in NH
2007	USGS Flood of May 2006 in NH
2009	NFPA 1 Fire Code 2009
2010	NWS Thunderstorms, Tornadoes, Lightning. Preparedness Guide
Apr 2010	FEMA Flood Insurance Study for Merrimack County 2010
Apr 2010	NH Hospital Mutual Aid Network MOU
2011	NH DES Management of Collected Debris Following Severe Storm Events Fact Sheet
Dec 2011	NH DHHS Disaster Behavioral Health Response Plan
Feb 2012	NH DHHS Child Care Center Emergency Preparedness Guide
Jul 2014	NH DOS Statewide Fire Mobilization Implementation Master Plan 2014
Jul 2014	American Red Cross of NH Strategic Plan – Humanitarian Services FY 2014-2019
Jul 2014	NH DHHS NH Excessive Heat Emergency Response Plan 2014
2015	NFPA 101 Life Safety Code 2015
Feb 2015	Central NH Regional Plan 2015
Mar 2015	NH State of NH Tickborne Disease Plan 2015
Sep 2015	NH DOS Bureau of Emergency Management Services EMS Provider Manual 2015
Jul 2015	NHHSEM NH Recovery Plan with RSFs 2015
Jan 2016	Eversource Energy Electric Operations Response Plan
Oct 2016	CNHREPC Central New Hampshire Regional Emergency Planning Committee Regional Hazardous Materials Emergency Plan 2016
2016	Capital Area Public Health Network Public Health Emergency Preparedness and Response Annex
As provided	NHDES Dam Emergency Action Plans for High, Significant & Low Hazard Dams
Mar 2018	NH DOT Recommendations for the Ten-Year Transportation Improvement Plan (Projects) 2019-2028
2018	USGS Preliminary Stage and Streamflow Data at Selected Stream Gages for Flood of Oct 2017

Latest Adoption or Version Date	Mitigation Support and Resource Documents Not Listed within Capability Assessment Tables
2018	CAPHN Regional Shelter Annex
Jul 2018	NH DHHS NH Arboviral Illness Surveillance, Prevention and Response Plan & Map 2018
Oct 2018	State of NH Multi-Hazard Mitigation Plan Update 2018

Source: Henniker Hazard Mitigation Committee, CNHRPC

Pat's Peak Resort, Ski Area and First Aid Stations

Image accessed via [www.patspeak.com,](http://www.patspeak.com) 09-19

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7 PRIOR ACTION STATUS

The **Hazard Mitigation Plan Update 2014** provided a basis to begin Action development, many of which originated from the original **2008 Plan**. A review of the **2014** Actions is provided by the Hazard Mitigation Committee, determining which Actions have been **Completed**, **Deleted**, or **Deferred** to the **2019 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 **2014 Plan's 50 total** Actions in addition to the **New** Actions from the **2019 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 **2014 Plan** are listed in **Table 44** along with completion dates.

Actions which were **Deleted** from the **2014 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 Henniker's activities. Deleted Actions are listed in **Table 45.**

Actions which were **Deferred** from the **2014 Plan** are still important to the Town but were not completed because they did not have the staff capability or the funding to undertake them, other Actions took higher priority, more time was required for completion, or they may need to be repeated to be effective. These **Deferred** Actions are in **Table 46** and have been re-prioritized with the **New** Actions in the **Mitigation Action Plan.**

Changes in priority of the **Deferred 2014** Actions occurred over the last five years. The **2014 Plan** used the **12-36 Priority Score enhanced STAPLEE** system while the **2019 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 **2019 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 *Town Hazard Mitigation Plan*.
Preparedness	**Short Term**	Action assists or supports planning, protective activities, public education, training and exercise. ↪ Best suited for ***Town Emergency Operations Plan***.
Response, Recovery, Other Related	**Short Term**	Action supports preventative, response, recovery-related, repeated or deferred maintenance activities. ↪ Best suited for ***Town Emergency Operations Plan***.

HAZARDS CONSIDERED

With **22** individual hazards evaluated in this Plan, it is not always practical to list each one when describing location vulnerabilities or solutions. In many cases, listing the more encompassing main hazard categories from chapters **3 GOALS AND OBJECTIVES** and **4 HAZARD RISK ASSESSMENT,** which are **Flood**, **Wind**, **Fire**, **Extreme Temperature**, **Earth**, **Technological** and **Human**, should accurately define the issues of most of the identified Actions or locations. Using these hazard categories would often better accommodate the situation in their broadness. The categorized hazards have also been used in the **APPENDIX A Critical and Community Facilities Vulnerability Assessment**, but tailored when necessary.

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

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

Review of 2014 Actions

The **2014 Hazard Mitigation Plan** was written in a different format and its content had to comply with less specific review guidelines before the ***Local Hazard Mitigation Review Guidebook (FEMA), 2011*** became standardized and tailored by each FEMA Region over the years.

Henniker's mitigation Actions from the **2014 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:

#1- 2008 to	**#34- 2008**
#35- 2014 to	**#73-2014**

A total of **27** mitigation Actions have been **Completed** from the **Hazard Mitigation Plans** as shown in **Table 47**. This includes **17** Actions completed since the **2014 Plan**, **8** of which are still being worked on and will remain as an active Action within the **2019 Plan**'s **Mitigation Action Plan**. These infrastructure Actions were partially completed (**P**) and also appear on the **Deferred** list for project completion.

Table 47
Completed Mitigation Actions

Priority Score (2014)	Action Number	Action	Completed By Date	Who is Responsible	Approx $ Cost	Natural Hazards Addressed
36	**#01-2008**	**Held Active Shooter Drill in Henniker with Police Department, Fire & Rescue, and NEC Security**	**Apr 2008, Dec 2011, Nov 2012, Apr 2013**	Police Department and Fire Department	$0	Human, Cyber
34	**#02-2008**	**Completed the Mass Casualty Trailer's Supplies and Equipment**	**Aug 2008**	Fire Department	$10,000	Human, Mass Casualty, Earthquake, Landslide, Extreme Temps, Wildfire, Inland Flooding, River Haz, Wind/ Tropical, Winter, Public Health, Aging Infrastructure, Crash, Haz Mat, Avalanche
28	**#03-2008**	**Redesigned the Emergency Operations Center to Accommodate a Communications/Radio Room**	**Aug 2008**	Emergency Management Director	$6,600	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/ Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat, Mass Casualty, Avalanche

Priority Score (2014)	Action Number	Action	Completed By Date	Who is Responsible	Approx $ Cost	Natural Hazards Addressed
34	#04-2008	**Updated the Emergency Management Plan**	Jun 2009	Emergency Management Director	$6,000	All – See #3-2008
31	#05-2008	**Obtained Interoperability Radios for Key Responders**	Jun 2011	Highway Dept	Unknown	All – See #3-2008
34	#06-2008	**Planned and Executed Tabletop and Field Drills**	Dec 2011	Police Department and Fire Department	$0	Human
35	#07-2008	**Revised the Subdivision Regulations to Address Specific Drainage Requirements**	Jan 2013	Planning Board	$300	Drought, Earthquake, Landslide, Lightning, Wildfire, Inland Flooding, River Haz, Wind/ Tropical, Winter, Aging Infrastructure, Utility, Crash, Haz Mat
---	#08-2008	**Refurbished Police Station**	Dec 2007	Police Department	Unknown	All – See #3-2008
---	#09-2008	**Signed MOU between Henniker School District (all schools) and Police Department for Shared Personal Information**	May 2009	Police Department and Henniker School District	$0	All – See #3-2008
---	#10-2008	**Updated the Zoning Ordinance to Comply with NFIP Requirements**	2010	Town Planner and Code Enforcement Officer	$0	Inland Flooding, River
COMPLETED FROM 2014 PLAN						
36	#29-2008	**Continue to Update the Emergency Operations Plan**	2017	Emergency Management	$6,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/ Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat, Cyber, Mass Casualty, Avalanche
33	#34-2008	**Update the 2002 Master Plan**	Fall 2016	Planning Board	$10,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/Tropical, Winter, Public Health, Aging Infrastructure, Utility, Crash, Haz Mat
36	#35-2014	**Trim Dangerous Tree Limbs from Right of Way (PWD)**	Jun 2019	Highway Dept	$0	Wind, Winter, Utility, Debris
35	#37-2014	**Replace Culvert and Repair Roadway Across the Sluiceway on Western Avenue's Red Listed Bridge**	Fall 2017	Highway Dept	$250,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion

Priority Score (2014)	Action Number	Action	Completed By Date	Who is Responsible	Approx $ Cost	Natural Hazards Addressed
34	#40-2014	Install a Dry Hydrant at Dodge Hill in the Area of Bound Tree Road	2016	Fire Department	$25,000	Lightning, Wildfire, Drought, Hazardous Materials, Fire
33 P	#41-2014	Replace Six Butter Road Culverts	Spring 2017 (3 done)	Highway Dept	$15,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33 P	#42-2014	Replace Eight Mt. Hunger Road Culverts	Spring 2018 (6 done)	Highway Dept	$18,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33	#43-2014	Replace Twelve Quaker Street Culverts	Fall 2015	Highway Dept	$18,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33 P	#47-2014	Replace [6] Culverts on Ray Road	Fall 2018 (3 done)	Highway Dept	$3,500	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33 P	#49-2014	Replace [7] Culverts on Rush Road	Mar 2019 (2 done)	Highway Dept	$15,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33 P	#51-2019	Replace Culverts on Craney Hill Road	2012 (large culverts)	Highway Dept	$15,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33 P	#53-2014	Replace [5] Culverts on Hemlock Corner Loop	Fall 2017 (2 done)	Highway Dept	$15,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33 P	#54-2014	Replace [32] Culverts on Western Avenue	Spring 2016 (21 done)	Highway Dept	$90,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33	#57-2014	Replace [5] Culverts on Ramsdell Road	Fall 2018	Highway Dept	$15,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
33	#59-2014	Replace [3] Culverts on Liberty Hill Road	Summer 2018 & 2019	Highway Dept	$15,000	Wind/Tropical, Inland Flooding, Aging Infrastructure, Winter, River, Landslide, Scouring & Erosion
32	#60-2014	Replace Two-Lane Bridge on Western Avenue	Summer 2017	Highway Dept	$1.2m (20% of $6m)	Wind/Tropical, Ice Jams, Inland Flooding, Aging Infrastructure, Winter, River, Scouring & Erosion
32	#67-2014	Overhaul Town Website	2017	Town Administration	$5,000	Drought, Earthquake, Landslide, Extreme Temps, Lightning, Wildfire, Inland Flooding, River Haz, Wind/ Tropical, Winter, Public Health, Aging Infrastructure,

Priority Score (2014)	Action Number	Action	Completed By Date	Who is Responsible	Approx $ Cost	Natural Hazards Addressed
						Utility, Crash, Haz Mat, Cyber, Mass Casualty, Avalanche
24 P	#73-2019	**Develop Plan for Stabilizing the River Bank Erosion in Azalea Park**	2015	Azalea Park Committee	$0	Wind/Tropical, Inland Flooding, Winter, Ice Jams, River, Landslide, Scouring & Erosion

Source: Henniker Hazard Mitigation Committee

P = *Project Partially Completed – Appears in 2019 Mitigation Action Plan*

The pink highlighted rows indicate the **31** total **Deleted** Actions in Table 48 from previous **Hazard Mitigation Plans** which will not be incorporated into the **2019 Plan** as **Deferred** Actions. Many of the recent Actions were **Deleted** because they were preparedness, response or recovery items and more appropriately belonged in the Town's *Emergency Operations Plan*.

Table 48

Deleted Mitigation Actions

Priority Score (2014)	Action Number	Action	Deleted Date	Who is Responsible	Approx $ Cost	Why Deleted? The Action…
34	#11-2008	**Enable the Code Enforcement Officer to Enforce the Zoning Ordinance**	Mar 2013	Town Administrator	$0	Was no longer necessary or a priority to the Town
33	#12-2008	**Adopt Current NFPA Provisions at Town Meeting**	Mar 2013	Fire Department	$0	Was no longer relevant to the Town's situation or objectives
26	#13-2008	**Establish the Citizens Corps**	Mar 2013	Emergency Management Director	$0	Duplicates existing efforts
33	#14-2008	**Update the Structural and Hazardous Materials Existing Pre-Plans**	Mar 2013	Fire Department	$0	Was incorporated into another activity (Action)
33	#15-2008	**Revise the Subdivision Regulations with Fire Department Standards**	Mar 2013	Planning Board	$0	Was an unrealistic activity to undertake
32	#16-2008	**Enact a Steep Slope Ordinance Incorporating Drainage and Safety Requirements**	Mar 2013	Planning Board	$1,000	Was incorporated into another activity (Action)
25	#17-2008	**Educate Businesses on the Necessity for Emergency Contingency Plans**	Mar 2013	Emergency Management Director	$0	Was incorporated into another activity (Action)
31	#18-2008	**Establish and Equip a Water Rescue Team**	Mar 2013	Fire and Rescue Departments	$10,000	Was financially infeasible

Priority Score (2014)	Action Number	Action	Deleted Date	Who is Responsible	Approx $ Cost	Why Deleted? The Action…
34	#19-2008	Modify the Building Permit Application	Jun 2008	Board of Selectmen	$500	Was no longer necessary or a priority to the Town
---	#20-2008	Plowing Agreement with Hillsborough	Jan 2013	Highway Department	$0	Was no longer relevant to the Town's situation or objectives
33	#21-2008	Publicize the Web Page as a Source of Emergency Information for Disasters	Mar 2013	Town Administrator	$0	Was incorporated into another activity (Action)
35	#22-2008	Develop a Drainage Improvement Plan for Regularly Flooded Roads	Mar 2013	Highway Department	$50,000	Was incorporated into another activity (Action)
31	#23-2008	Educate the Public of Radon Potential	Mar 2013	Health Officer	$0	Duplicates existing efforts
DELETED FROM 2019 PLAN						
36	#36-2014	Trim Dangerous Tree Limbs on Utility Wires (PSNH)	Jun 2019	Highway Dept	$0	Was a preparedness, response or recovery activity
33	#44-2014	Replace Culverts at Gulf Road and Depot Road	Jun 2019	Highway Dept	$15,000	Was no longer relevant to the Town's situation
33	#48-2014	Replace Culverts on Colleague Pond Road	Jun 2019	Highway Dept	$15,000	Was no longer necessary or a priority to the Town
33	#56-2014	Replace Culverts on Old Concord Road	Jun 2019	Highway Dept	$15,000	Was no longer necessary or a priority to the Town
33	#58-2014	Replace Culverts on Whitney Road	Jun 2019	Highway Dept	$15,000	Was no longer relevant to the Town's situation (Class VI road)
36	#62-2014	Identify At-Risk Populations	Jun 2019	Emergency Management, Fire & Rescue	$5,000	Was a preparedness, response or recovery activity
36	#63-2014	Undertake Community Outreach During an Emergency	Jun 2019	Emergency Management, Police Department, Fire & Rescue	$20,000	Was a preparedness, response or recovery activity
35	#64-2014	Obtain Approval for a Closed POD at New England College	Jun 2019	Emergency Management	$10,000	Was a preparedness, response or recovery activity
35	#65-2014	Research and Plan Traffic Control Systems for Emergency Flood Management System	Jun 2019	Highway Department	$50,000	Was an unrealistic activity to undertake
32	#25-2008	Obtain Interoperability Radios for Key Responders	Jun 2019	Emergency Management	$20,000	Was a preparedness, response or recovery activity

Priority Score (2014)	Action Number	Action	Deleted Date	Who is Responsible	Approx $ Cost	Why Deleted? The Action…
36	#66-2014	Educate and Assist in Development of Business, Non-Profit, Etc Continuity of Operations Plans (COOP)	Jun 2019	Emergency Management and Town Administration	$10,000	Was a preparedness, response or recovery activity
35	#27-2008	Hold Active Shooter Drill in Henniker with Police Department, Fire & Rescue, and NEC Security	Jun 2019	Police Department and Fire Department	$0	Was a preparedness, response or recovery activity
34	#68-2014	Participate in National Flood Insurance Program (NFIP) Training	Jun 2019	Building Inspector	$100	Was a preparedness, response or recovery activity
31	#28-2008	Enable All Town Office Employees to Attend a Conflict Resolution Class and Participate in EOP Drill	Jun 2019	Town Administration	$0	Was a preparedness, response or recovery activity
36	#30-2008	Develop a Schedule of When and How the Town Equipment on Cell and Radio Towers are Checked and Maintained	Jun 2019	Town Administration	$0	Was a preparedness, response or recovery activity
36	#31-2008	Continue Maintaining the FD Equipment and Apparatus Purchase Plan	Jun 2019	Fire and Rescue Dept	$0	Was a preparedness, response or recovery activity
36	#32-2008	Develop a Plan for Contacting Isolated Residents in Severe Weather	Jun 2019	Emergency Management	$0	Was a preparedness, response or recovery activity
36	#33-2008	Update the Emergency/ Evacuation Plans for Concentrated and At-Risk Populations	Jun 2019	Emergency Management	$0	Was a preparedness, response or recovery activity
29	#72-2014	Develop Plan for Stabilizing Old Paper Mill Sluice Way Canal on Western Avenue	Jun 2019	Town Administration and Highway Department	$300,000	Was no longer relevant to the Town's situation

Source: Henniker Hazard Mitigation Committee

The tan highlighted rows in Table 49 indicate the 22 **Deferred** mitigation Actions from the **2014 Plan** which also appear in the forthcoming **2019 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 **2019** needs in later sections. Several **Deferred** Actions were partially completed (**P**) and will be finished within the **5**-year timeframe of the **2019 Plan**.

Table 49

Deferred Mitigation Actions

Priority Score (2014)	Action Number	Action	Deferred Date	Who is Responsible	Approx $ Cost	Why Deferred? Because…	Hazards Addressed
34	#24-2008	**Utilize Land Development Regulations Continue Program to Install Dry Hydrants & Cisterns at Rural Locations (FD NFPA recommendations)**	Jun 2019	Fire & Rescue Department	$0	Action needs to be repeated for effectiveness	Lightning, Wildfire, Drought, Hazardous Materials, Fire
34	#38-2014	**Install a Dry Hydrant on Plummer Hill Road at the Pond**	Jun 2019	Fire & Rescue Department	$0	Action was a lower priority than other Town activities	Lightning, Wildfire, Drought, Hazardous Materials, Fire
34	#39-2014	**Install a Dry Hydrant on Old Hillsboro Road at the Brook and Pond**	Jun 2019	Fire & Rescue Department	$0	Town lacked staff or volunteer capability and funding capability	Lightning, Wildfire, Drought, Hazardous Materials, Fire
33 P	#41-2014	**Replace Six Butter Road Culverts**	Jun 2019	Highway Department	$15,000	More time was required for completion (last 3 are operational)	Flood, Scouring & Erosion, Wind, Debris, Tropical
33 P	#42-2014	**Replace Eight Mt. Hunger Road Culverts**	Jun 2019	Highway Department	$18,000	More time was required for completion & Action was a lower priority (last 2 are not a priority)	Flood, Scouring & Erosion, Wind, Debris, Tropical
33	#45-2014	**Replace Culvert at Flanders Road and Gulf Road**	Jun 2019	Highway Department	$15,000	Action was a lower priority than other Town activities	Flood, Scouring & Erosion, Wind, Debris, Tropical
33	#46-2014	**Develop a Culvert [Identification and Replacement] Plan [to Reduce the Risk of Road Washouts,**	Jun 2019	Highway Department and Emergency Management	$15,000	Action was a lower priority than other Town activities (HD clears/ upgrades 2-3 culverts per	Flood, Scouring & Erosion, Debris, Tropical

Priority Score (2014)	Action Number	Action	Deferred Date	Who is Responsible	Approx $ Cost	Why Deferred? Because…	Hazards Addressed
		Erosion, and Culvert Debris]				day). The idea evolved to GPSing the culverts and using the data to develop a culvert replacement plan for Town asset management.	
33	**#47-2014**	**Replace Culverts on Ray Road**	**Jun 2019**	Highway Department	$3,500	More time was required for completion (3 more)	Flood, Scouring & Erosion, Debris, Tropical
33 P	**#49-2014**	**Replace Culverts on Rush Road**	**Jun 2019**	Highway Department	$15,000	Action was a lower priority than other Town activities (5 more)	Flood, Scouring & Erosion, Debris, Tropical
33	**#50-2014**	**Replace Culvert on Colby Hill Road**	**Jun 2019**	Highway Department	$15,000	Action was a lower priority than other Town activities	Flood, Scouring & Erosion, Debris, Tropical
33 P	**#51-2014**	**Replace Culverts on Craney Hill Road**	**Jun 2019**	Highway Department	$15,000	Action was a lower priority than other Town activities (remaining are functional)	Flood, Scouring & Erosion, Debris, Tropical
33	**#52-2014**	**Replace Culverts on River Road**	**Jun 2019**	Highway Department	$15,000	Action was a lower priority than other Town activities (remaining 8 are functional)	Flood, Scouring & Erosion, Debris, Tropical
33 P	**#53-2014**	**Replace Culverts on Hemlock Corner Loop**	**Jun 2019**	Highway Department	$15,000	Action was a lower priority than other Town activities (remaining 3 are functional)	Flood, Scouring & Erosion, Debris, Tropical
33 P	**#54-2014**	**Replace Culverts on Western Avenue**	**Jun 2019**	Highway Department	$15,000	Action was a lower priority than other Town activities (11 are functional)	Flood, Scouring & Erosion, Debris, Tropical
33	**#55-2014**	**Replace Culverts on Dodge Hill Road**	**Jun 2019**	Highway Department	$15,000	Action was a lower priority than other Town activities (10 are functional)	Flood, Scouring & Erosion, Debris, Tropical

Priority Score (2014)	Action Number	Action	Deferred Date	Who is Responsible	Approx $ Cost	Why Deferred? Because…	Hazards Addressed
32	#61-2014	**Repair One-Lane Bridge Connecting Western Avenue and Patterson Hill Road**	Jun 2019	Highway Department	$150,000	More time was required for completion	Flood, River, Lightning, Fire, Crash, Erosion & Scouring
29	#26-2008	**Finalize Brochures for Citizens on What to Do During a Disaster**	Jun 2019	Emergency Management	$300	Town lacked staff or volunteer capability and funding capability	Drought, Earthquake, Temperature, Wind, Flood, Landslide, Lightning, Health, River, Winter, Solar, Tropical, Wildfire
36	#69-2014	**Update the Zoning Ordinance to Comply with NFIP Requirements**	Jun 2019	Planning Board	$0	Action needs to be repeated for effectiveness	Flood, River Ice Jam, Scouring & Erosion, Tropical
34	#70-2014	**Develop Plan for the Stabilization of the Contoocook River Bank on Western Avenue to Reduce the Risk of Erosion**	Jun 2019	Town Administration and Highway Department	$500,000	More time was required for completion & Town lacked funding capability	Flood, River, Scouring & Erosion, Tropical, Debris
34	#71-2014	**Develop Pre-Plan Response SOG to Handle Structural Hazards**	Jun 2019	Fire and Rescue Dept	$0	More time was required for completion	Fire, Hazardous Materials, Health (Safety)
34	#73-2014	**Stabilize the River Bank Erosion in Azalea Park to Reduce the Risk of Erosion and Bank Failure**	Jun 2019	Town Administration and Highway Department	$500,000	More time was required for completion & Town lacked funding capability	Flood, River, Scouring & Erosion, Tropical, Debris

Source: Henniker Hazard Mitigation Committee

P = *Project Partially Completed – Appears in **2019 Mitigation Action Plan***

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8 MITIGATION ACTION PLAN

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

The **Mitigation Action Plan** is the culmination of the work of the previous Assessments, inventories, and evaluations from the previous Chapters. Actions to help Henniker 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 **2019 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 Henniker.

Several uncompleted **Deferred** (2014) Henniker mitigation Actions have been carried forward into the **2019 Plan** with the updates to the evaluation, cost, prioritization, etc.

ACTION MATRIX

A listing of **22 Deferred** mitigation Actions from **2014** and **41 New** mitigation Actions from **2019,** important to the Town of Henniker, 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 **2019 Plan**. The **2019** Actions begin where the prior Actions left off, **#74- 2019** through **#115- 2019**. Over time, the Actions can be tracked to see which have been **Deferred** and to organize the **Completed** or **Deleted** Actions. For those with funding needs, the ability to reference an Action within the Capital Improvements Program or in a Warrant Article can alleviate confusion and further support the mitigation Actions.

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

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

Within the **Mitigation Action Plan**, the **Deferred 2014** Actions and the **New 2019** 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.

Henniker's Mitigation Action Plan 2019

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 2019**, the **Mitigation Action Plan** shown in **Table 50** ***Planning and Regulatory***; **Table 51** ***Structure and Infrastructure***; **Table 52** ***Natural Systems Protection;*** and **Table 53** ***Education and Outreach*** should be able to guide future hazard mitigation efforts in the Town through an annual implementation process.

Twenty-two (**22**) **Deferred** Actions from **2014** and **41** **New** Actions from **2019** combine to develop the **63** Actions of the **2019** **Mitigation Action Plan**. The **Deferred** Actions' cells are highlighted in tan.

Table 50

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
#46-2014	**Develop a Culvert Identification and Replacement Plan to Reduce the Risk of Road Washouts, Erosion, and Culvert Debris**	**Medium Term 3-4 Years**	**61**	Road Management Committee	$10,000	Flooding of the rivers and streams can occur from heavy rains which have the potential for undermining structures. Amey Brook over Old Concord Road Bridge and Ramsdell Road over the Contoocook River are two examples. The Highway Dept is currently upgrading and clearing culverts at a rate of 2-3 per day during spring-fall. The opportunity to GPS the drainage structures at this time is important to the Town's overall asset management approach. The idea is for High School student interns to assist with GPSing and to have NEC student interns help develop a culvert identification and replacement plan with the data.	Flood, Scouring & Erosion, Debris, Tropical	Town Roadway Culverts	Cost is for a surveyor-grade, accurate GPS unit for culverts (to inches), used Trimble ($5,000- 16,000 used) in-kind staff and volunteer labor	Highway Department Equipment Line Item
#69-2014	**Update the Zoning Ordinance to Comply with NFIP Requirements to Reduce the Impact of Flooding**	**Short Term 1-2 Years Then Ongoing**	**73**	Board of Selectmen, with Planning Board	$0	For towns enrolled in the National Flood Insurance Program (NFIP), RSA 674:57 Flood Hazards enables Boards of Selectmen to adopt amendments to flood insurance rate maps, which are automatically included in the Floodplain Ordinance. Required revisions could be provided at any time from the federal government to the NH Office of Strategic Initiative, who	Flood, River Ice Jam, Scouring & Erosion, Tropical	Floodplains	Cost is for in-kind staff and volunteer labor.	N/A

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
						notifies the Town of what changes need to be made.				
#70-2014	**Develop Plan for the Stabilization of the Contoocook River Bank on Western Avenue to Reduce the Risk of Erosion**	**Long Term 4-5 Years**	**56**	Board of Selectmen, with Highway Department	$25,000	Town owned parcel at 1011 Western Avenue, above the dam. Concept plan for riverfront park, not appropriate for economic development. Now being used heavily as a white water put-in, take out at Azalea Park.	Flood, River, Scouring & Erosion, Tropical	Contoocook River at Western Avenue	Cost is for engineering study of options of the bank.	HMGP
#71-2014	**Develop Pre-Plan Response SOG to Handle Structural Hazards and Reduce the Risk of Evacuee Injury, Conflagration and Hazardous Materials Spills**	**Medium Term 3-4 Years**	**75**	Fire Department	$0	Fire & Rescue Dept will have a plan for different emergency situations. Their focus is on Downtown and Main Street, how to handle from each side of the building depending on the type of emergency, apparatus, number of responders, number of people inside. The FD has Pre-Plans for many of the Henniker buildings, but current changes are occurring to what's going on with the buildings inside, so the plans are changing. The FD is stipulating rules as the revisions are made. They have a collection of written documents, have shared them with Capital Area Mutual Aid, and have pre-planned scenarios. FD also has concerns with HHP, but most facilities were built under appropriate regulations at the time.	Fire, Hazardous Materials, Health (Safety)	Many Buildings, Businesses or Blocks in Town	Cost is for in-kind staff and volunteer labor.	N/A
#74-2019	**Develop a Wastewater Asset Management Municipal Database**	**Long Term 4-5 Years**	**75**	Wastewater Department, with Town	$5,000	In June 2019, all infrastructure will be available online in the Town's AxisGIS with property parcel maps. Underwood	Drought, Earthquake, Temperature, Flood,	Wastewater Lines	Cost is a component of the overall AMPS project	NHDES Aquatic Resource Mitigatio

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
	to Reduce the Risk of Pipe Breakage			Administration		Engineers has the digital layer right now. A severe earthquake could damage or break the underground pipes of Cogswell Springs and Wastewater Treatment Plant. Such an event could be a public health issue and fire hydrants would be without water for fires. If Town water is not available, then sewer would not run. Wastewater Dept is completing an inventory, now in draft form, of the wastewater infrastructure. Inventory and plan contains maps, the identified issues to resolve, finances needed to fix these issues, ways to track and maintain new and future improvements. Projected completion in June 2019. The document and data are in paper format only, not digital on a computer. Placing this data into a municipal database will ensure the ability to update the information and rapidly access the information when emergencies occur.	Tropical, Fire, Public Health (Water Quality/ Disease)		to receive data in digital format.	n (ARM) Revolving Loan
#75-2019	**Consider Secondary Egress for Larger Subdivisions to Increase Evacuation Levels During Hazard Events Such as Wildfire, Flooding,**	**Short Term 1-2 Years**	**65**	Planning Board	$0	When certain one-egress roads experience washouts, wires down, wildfires, or have downed trees, residents often cannot evacuate from home or access their homes if they were away during the event. Many must wait for emergency services to	Lightning, Wildfire, Flood, Wind, Winter, Tree Debris, Utility	New Developments	Cost is for in-kind staff and volunteer labor.	N/A

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Winter, and Wind Events (Tree Debris)					clear roads. To increase evacuation levels during hazard events, consider adding regulations to the site plan review and subdivision regulations to ensure a secondary egress is constructed for major subdivisions.				
#76-2019	**Develop a Drainage Maintenance Plan to Keep the Ditch and Catch Basin Facilities Clear, Reducing the Risk of Road Washouts and Culvert Debris during Heavy Rain and Snow Melt Events**	**Medium Term 3-4 Years**	**73**	Road Committee with Highway Department	$0	Hall Avenue has catch basins but they are not functional and are being replaced/cleaned. A similar situation is occurring at the end of Rush Road. Until the catch basins are taken care of, flooding can occur during heavy rain or melt events. Hall Ave drainage facilities will be upgraded by summer 2019. Catch basins and storm drains are cleaned with Vactor (vacuum truck).	Flood, Scouring & Erosion, Debris, Tropical	Town Drainage Systems	Cost is for in-kind staff and volunteer labor.	N/A
#77-2019	**Develop a Pedestrian Infrastructure Study of the NH 114 (Main Street) to Ramsdell Road to Reduce the Risk of Pedestrian and Vehicle Crashes**	**Short Term 1-2 Years**	**69**	Board of Selectmen, coordination with Planning Board	$0	The intersection of Downtown is confusing for drivers, intersection of NH 114 and Main Street. Although there are crosswalks, there is a blind sight danger to pedestrians. Signage may be needed. Students do not often stay in crosswalks or look both ways. Police often meet with college freshmen to talk about dangers. Pharmacy parking causes visibility issues to ped crossing. Three crosswalks, high buildings. End product by 2020. Implementation of Study is long term.	Transportation (Crash)	NH 114 and Main Street	Cost is for analysis and visioning of a redesign of Main Street with a 0% contribution by the Town.	US EPA (100%) Recreational Economy Grant

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
#78-2019	**Develop an Evacuation Plan for Western Avenue Residents in the Contoocook River Floodplain to Reduce the Risk of Personal Injury**	**Short Term 1-2 Years**	**62**	Emergency Management	$0	Western Avenue (vulnerable culvert) with about 100 residents could be flooded or experience ice jams from the Contoocook River. Road gets washed out by the Police Station. These washouts would impact the Police Department, Wastewater pumping station, manufactured homes and River Condos on Western Avenue. The corner of Western Avenue had been reinforced with large boulders to give it more stability. The large Western Avenue culvert has a screen to collect debris so it does not build up inside, plastic pipes help better than the steel. Replaced dozens last summer. When that culvert floods, the road goes underwater, nothing that can be done. Have an evacuation plan for River Condos.	Flood, Winter, Wind, Tropical, Debris, Evacuation	Western Avenue	Cost is for in-kind staff and volunteer labor.	N/A
#79-2019	**Develop a Formalized Plan or MOU with Pats Peak and Michie Corp for Monitoring Their Respective Chase Brook Dams During High Water Events to Reduce the Risk of Dam Breach**	**Short Term 1-2 Years**	**71**	Emergency Management	$0	Temple Road at Chase brook has been repaired years ago and hasn't had any flooding problems since. River Road is on the edge of the Contoocook River and the Army Corps closes the road when releasing the reservoir water. Problems with siltation of Chase Brook when Michie's dam breached, washed out Flanders Road. Several beaver dams on Chase Brook.	Flood, Dam, Erosion/ Siltation	Dams - Pat's Peak and Michie Corp	Cost is for in-kind staff and volunteer labor.	N/A

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
#80-2019	**Review Solid Waste Ordinances and State Junkyard Regulations and Identify Properties Which are Unlicensed Junkyards to Ensure Regulations are Followed to Protect Drinking Water and Soil from Contamination**	Medium Term 3-4 Years	61	Town Administration	$10,000	Heavy rainfall on junkyards could leach unknown materials into the groundwater or run off into nearby streams. Will visit each property and talk with property owners first. Then will send a Board of Selectmen letter about violation. Issue that there is no enforcement to make sure these properties are in compliance and stay in compliance. Would need a Code Enforcement Officer full time to apply the regulations town-wide instead of choosing some junkyards. Once cleaned, the history has been these properties have been re-junkyard even more than the first time. The Planning Board has considered this as well -be fair and town-wide and someone's full time job. Need a list first to work on the worst offenders.	Public Health (Water and Soil Quality/ Disease), Hazardous Waste, Human	Unlicensed Junkyards	Cost is for legal costs for guidance for about 33 hours.	General Operating Legal Budget
#81-2019	**Investigate Developing Regulatory Requirements for Underground Propane Tanks to Reduce the Risk of Explosion**	Medium Term 3-4 Years	70	Fire Department	$0	Ensure barricades are in place. Fuel oil tanks are regulated by state and federal laws. Information may reside in the Public Utilities Commission (PUC). The Town prefers to follow the state guidelines.	Fire, Hazardous Materials, Health (Safety)	Entire Town	Cost is for in-kind staff and volunteer labor.	N/A
#82-2019	**Develop a Policy for Regulation of Drones in Certain Areas of Town to Reduce the Risk of Crash, Fire, and Privacy Concerns**	Short Term 1-2 Years	70	Board of Selectmen	$500	Collaborate with USACE who intends to pursue the regulation for flight over the dams and reservoir areas. With the growing popularity of drones used for business (real estate, etc) and for	Transportation (Crash), Fire, Hazardous Materials, Health	Sensitive Areas, such as Hopkinton Everett Lake Dam	Cost is for legal review and public noticing.	General Operating Legal Budget & Public

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
						personal interest, accidents with the 30-40 lb flying machines could be deadly if falling in populated areas, on cars or people, or on infrastructure. Another concern is the potential for intelligence gathering and terrorism usage. USACE in MA is working with FAA to identify regulations and they will share information with the Town when available. Some businesses, such as Pat's Peak, have such policies.	(Safety), Human	and Main Street Downtown Block		Notificati on Budget

Source: Henniker Hazard Mitigation Committee

Table 51

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
#24-2008	**Utilize Land Development Regulations to Continue the Program to Install Dry Hydrants & Cisterns at Rural Locations**	**Medium Term 3-4 Years**	**75**	Fire Department with Planning Board assistance	$0	The Fire Department is enabled to require dry hydrants or cisterns in new developments per NFPA 1142 regulation. By placing the language in the site plan review and subdivision regulations, a consistent nearby water source would be established in new neighborhoods. Someone from the FD would provide the necessary language to PB for adoption into regulations.	Lightning, Wildfire, Drought, Hazardous Materials, Fire	New Developments	Cost is for in-kind staff and volunteer labor.	N/A
#38-2014	**Install a Dry Hydrant on Plummer Hill Road at the Pond to Reduce the Impact of Fire, Wildfire and Lightning**	**Medium Term 3-4 Years**	**70**	Fire Department	$7,500	On Plummer Hill Road Pond, the Fire Dept has to cut a hole in the ice to access water for fire suppression. Install a dry hydrant with a strainer and a few pipe lines. It would be easier for several Capital Area Mutual Aid trucks to access when fighting Henniker's fires instead of having only 1 truck able use a hole in the ice to draw water at one time.	Lightning, Wildfire, Drought, Hazardous Materials, Fire	Plummer Hill Road	Cost is for excavation, piping, fittings, fill material, strainer, and installation.	USDA Rural Fire Protection Grant
#39-2014	**Install a Dry Hydrant on Old Hillsboro Road at the Brook and Swamp to Reduce the Impact of Fire, Wildfire and Lightning**	**Long Term 4-5 Years**	**68**	Fire Department	$7,500	No water source is available in the area, so the Fire Dept must haul water to the 30-home neighborhood to suppress fires.	Lightning, Wildfire, Drought, Hazardous Materials, Fire	Old Hillsborough Road, Michie Swamp	Cost is for excavation, piping, fittings, fill material, strainer, and installation.	USDA Rural Fire Protection Grant

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
#41-2014	**Upgrade Three Butter Road Culverts to Reduce the Impact of Floods and Erosion**	Short Term 1-2 Years	75	Highway Department	$2,500	Three have been upgraded since 2014, and three more remain to be upgraded. Existing pipe is about 12" and will be upgraded to twice the size (about 24"). Also changing from cement and steel pipes to pvc pipes.	Flood, Scouring & Erosion, Wind, Debris, Tropical	Butter Road	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#42-2014	**Upgrade Two Mount Hunger Road Culverts to Reduce the Impact of Floods and Erosion**	Short Term 1-2 Years	75	Highway Department	$1,500	Six culverts on Mount Hunger Road have already been upgraded on a priority basis. Two are remaining. Existing pipe is about 12" and will be upgraded to twice the size (about 24"). Also changing from cement and steel pipes to pvc pipes.	Flood, Scouring & Erosion, Wind, Debris, Tropical	Mount Hunger Road	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#45-2014	**Upgrade Three Culverts at Flanders Road and Gulf Road**	Short Term 1-2 Years	75	Highway Department	$3,000	Upgrade the culverts at the intersection of Flanders and Gulf Road over an unnamed brook with a larger size pvc. Currently the culverts are unable to handle heavy runoff and rain leading to road damage and in severe storms road closures. Upgrading the culverts with a larger size will reduce the reoccurring repair costs.	Flood, Scouring & Erosion, Wind, Debris, Tropical	Flanders Road and Gulf Road	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#47-2014	**Upgrade Three Culverts on Ray Road to Reduce the Impact of Floods and Erosion**	Short Term 1-2 Years	73	Highway Department	$2,000	Three have been upgraded since 2014, and three more Ray Road culverts are remaining to be upgraded. Existing pipe is about 12" and will be upgraded to twice the size (about 24"). Also changing from cement and steel pipes to pvc pipes.	Flood, Scouring & Erosion, Wind, Debris, Tropical	Ray Road	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance

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
#49-2014	Upgrade Five Culverts on Rush Road to Reduce the Impact of Floods and Erosion	Short Term 1-2 Years	73	Highway Department	$3,000	Several Rush Road culverts have been upgraded, with 5 more to go. Existing pipe is about 12" and will be upgraded to twice the size (about 24"). Also changing from cement and steel pipes to pvc pipes.	Flood, Scouring & Erosion, Wind, Debris, Tropical	Rush Road	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#50-2014	Upgrade Culvert on Colby Hill Road to Reduce the Impact of Floods and Erosion	Medium Term 3-4 Years	70	Highway Department	$15,000	The existing Colby Hill Road culvert may be a 5' metal culvert, with the bottom likely rusted out. The Dept could look at sleeving as an option, or a pre-fab concrete box culvert might be a better choice.	Flood, Scouring & Erosion, Wind, Debris, Tropical	Colby Hill Road	Cost is for an upgraded culvert, either sleeve the existing or a new box culvert. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#51-2014	Upgrade 5 Culverts on Craney Hill Road to Reduce the Impact of Floods and Erosion	Short Term 1-2 Years	75	Highway Department	$4,000	A lot of work is necessary on Craney Hill Road due in part to a large washout out in 2012 for which federal funding was received to help with improvements. Everything is currently functional, but an upgrade could reduce the risk of future problems. The existing culverts to upgrade may be between 24" to 36".	Flood, Scouring & Erosion, Wind, Debris, Tropical	Craney Hill Road	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#52-2014	Upgrade Eight Culverts on River Road to Reduce the Impact of Floods and Erosion	Medium Term 3-4 Years	70	Highway Department	$4,000	The existing River Road pipe is about 12" and will be upgraded to twice the size (about 24"). Also changing from cement and steel pipes to pvc pipes.	Flood, Scouring & Erosion, Wind, Debris, Tropical	River Road	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#53-2014	Upgrade Three Culverts on Hemlock Corner Loop to Reduce the Impact of Floods and Erosion	Medium Term 3-4 Years	70	Highway Department	$2,000	Two Hemlock Corner culverts have been upgraded since 2014, and three more remain to be upgraded. Existing pipe is about 12" and will be upgraded to	Flood, Scouring & Erosion, Wind, Debris, Tropical	Hemlock Corner Loop	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance

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
						twice the size (about 24"). Also changing from cement and steel pipes to pvc pipes.				
#54-2014	**Upgrade Eleven Culverts on Western Avenue to Reduce the Impact of Floods and Erosion**	**Short Term 1-2 Years**	**73**	Highway Department	$20,000	On Western Avenue, the Dept upgraded 21 culverts from the Bridge to Cote Hill Road in Spring 2016. Eleven more remain to be upgraded. Existing pipe is about 24" metal, to be upgraded to about 30" pvc pipe.	Flood, Scouring & Erosion, Wind, Debris, Tropical	Western Avenue	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#55-2014	**Upgrade Ten Culverts on Dodge Hill Road to Reduce the Impact of Floods and Erosion**	**Medium Term 3-4 Years**	**70**	Highway Department	$15,000	Several Dodge Hill Road culverts have been upgraded, with 10 more to go. Existing pipe is about 12" and will be upgraded to twice the size (about 24"). Also changing from cement and steel pipes to pvc pipes.	Flood, Scouring & Erosion, Wind, Debris, Tropical	Dodge Hill Road	Cost is for the plastic culvert pipes. Labor is in-kind by the Highway Dept.	Highway Department Road Maintenance
#61-2014	**Rehabilitate the One-Lane Wooden Deck Bridge Connecting Western Avenue and Patterson Hill Road to Ensure Adequate Drainage and Safe Passage and Reduce Damage from Lightning, Flooding and Scouring**	**Medium Term 3-4 Years**	**61**	Town Admin with Highway assistance	$150,000	The Western Avenue's other bridge is closed, and this one-lane is getting heavy use which degrades the surface. It is still necessary for safety of traffic coming off of Patterson Hill Road. At a minimum, the deck needs to be repaved. Until the additional traffic from Western Avenue diversion stops, it is difficult to know the amount of damage to this small bridge.	Flood, River, Lightning, Fire, Crash, Erosion & Scouring	Bridge Connecting Western Avenue and Patterson Hill Road	Cost is for contractor to remove wooden planks, & add new planks & repave and materials.	NHDOT Bridge Fund 20/80
#83-2019	**Determine Floodproofing Options for West Henniker and Ramsdell Road Wastewater Pumping Stations**	**Long Term 4-5 Years**	**61**	Wastewater	$30,000	If the West Henniker Wastewater pumping station on Western Ave is flooded or earthquake, the entire west side town could lose sewer. Boundary: 99 Old Hillsborough Road (Bull Run), from the Community School west. Built 30' underground,	Flood, Tropical	West Henniker and Ramsdell Road Wastewater Pumping Stations	Cost is for an engineering analysis	WW CRF and/or User Fees

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
						built to earthquake standards. Electrical controls are aboveground, ladder down to pump. Has never flooded but was close during the 2006 flood. Options could include construct a 10'-20' wall and flood door around the pump station; raising the electrical panels, etc.				
#84-2019	**Upgrade Sidewalks on Rush Road, Western Avenue, Hall Avenue and Prospect Street to Improve Drainage and Reduce the Risk of Pedestrian and Vehicle Crashes**	**Short Term 1-2 Years**	**75**	Highway Department	$750,000	Upgrade sidewalks on Rush Road (State), Western Avenue (all Town $750k sidewalk & roads), Hall Ave & Prospect Street (100%). Routes to School /TAP grant received for Town Road – Hall Ave, Prospect (sidewalks TAP/road surface by Town, downtown area Rush Road sidewalks, drainage improvements town/state, plus an extension of Hall Ave (TAP sidewalks) Town during road surface. Projected timeline Western Ave 2019, Hall 2019, Prospect 2019, Rush 2019, end of Western Ave 2021.	Flood, Erosion, Tropical, Debris, Crash, Health (Safety)	Rush Road, Western Avenue, Hall Avenue and Prospect Street	Cost is for contractors on the Western Avenue side and drainage upgrades, water & sewer line upgrades, and repaving the road. The other projects are paid for by other sources.	TAP Grant 100%. Western Avenue $750k Expendable Trust Fund
#85-2019	**Install a Stand-Alone Propane Generator at the Grange to Ensure Continued Municipal Operations During Power Outages and Reduce the Risk of Damage to Food Supplies to Underserved Residents**	**Long Term 4-5 Years**	**66**	Town Admin with all Depts	$15,000	The Grange contains the welfare office and food pantry which requires refrigeration. For the three Town facilities requiring emergency generators, the highest priority is Craney Hill Road, then the Town Hall, and lastly the Grange. (School is primary Shelter and has one a generator).	Wind, Winter, Lightning, Solar Storms, Power Outage	Grange, Town Hall and Craney Hill Tower	Cost is for $15,000 for each with propane, concrete pad, wiring, panel, tank, and labor.	FEMA Emergency Management Performance Grant (EMPG) 50/50

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
#86-2019	**Finance the Installation of Stand-Alone Generator and Showering Facility at White Birch Center to Enable its Use as a Secondary Town Shelter**	**Medium Term 3-4 Years**	**65**	White Birch Center with assistance of Town to seek grants	$55,000	White Birch Center is a designated warming and cooling shelter. However, damage from fire, high winds, or earthquake could inhibit its usage as a cooling or warming shelter. State required an EOP for child care for White Birch Center. Generator for all of White Birch as not only are warming and cooling necessary but so is child care for emergency workers. EMPG is best, then HMPG is next best funding. Including the consolidation of the 3 electrical meters and services, original building, new addition and barn. The White Birch Board is ready to proceed. but the building is leased by White Birch Center, have to ensure owner is in agreement.	Wind, Winter, Lightning, Solar Storms, Power Outage	White Birch Center	Cost is for electrical metering, two generators, concrete pads, panels, following child care licensing standards: $40,000 for both estimated. Cost for showers is remodel of bathroom is $10,000-15,000.	FEMA Emergency Management Performance Grant (EMPG) 50/50, CDFA, Community Loan Fund, Rural Development Council, Technology grants, Capital campaign, NH Charitable Foundation, United Way
#87-2019	**Encourage New England College to Install Generators for the Three Critical Infrastructure Buildings without Them, Including Simons Student Center (a Temporary NEC Shelter), Gilmore Dining Hall, and the**	**Short Term 1-2 Years**	**67**	Emergency Management and Board of Selectmen to New England College	$0	The large student population needs more than one evacuation location, and these locations require a source of power. Continuity of Operations Plan for NEC>	Wind, Winter, Lightning, Solar Storms, Power Outage	New England College	Cost is $0 for the Town for in-kind staff and volunteer labor because any equipment and labor would be paid for by NEC.	N/a

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Lee Clement Field House									
#88-2019	**Encourage the Installation of a Lightning Rod and Surge Panels at White Birch Center to Support Its Use as a Secondary Shelter and Reduce the Risk Fires in the Downtown Block**	**Short Term 1-2 Years**	**73**	White Birch Center	$0	Any lightning strike, accidents, terrorism incident impacting Ayer and Goss fuel depot on Hall Ave could also place the child care and senior programming at risk at White Birch Center across the street and impede its use as a cooling/warming shelter. Evacuation may be necessary. White Birch has an evacuation plan. IF WBC applies for a generator grant, the lightning rod panel would get tied into the generator project.	Lightning, Wildfire, Drought, Hazardous Materials, Fire, Human	White Birch Center	Cost is $0 for the Town for in-kind staff and volunteer labor because any equipment and labor would be paid for by White Birch Center.	N/A
#89-2019	**Develop a Study to Consider Locations for a Solar Array Microgrid Installation to Reduce Impacts of Solar Storms and Power Outage**	**Medium Term 3-4 Years**	**63**	Town Administration	$10,000	Study the installation a microgrid of solar panels and batteries to ensure a supply of electricity for the Town when power outages occur due to wind, winter or other hazards. Where the best location would be of the town parcels.	Wind, Winter, Lightning, Tropical, Solar Storms, Power Outage	Town Property TBD	Cost is for a consultant to develop the study.	Public Utility Commission, US Dept of Energy grant, Better Buildings Nonprofit, (not taxes)
#90-2019	**Repair and Upgrade Broken 10" Waterline Under US 202 and Reroute the Pipe Location to Reduce the Risk of Water Quality Contamination or**	**Short Term 1-2 Years**	**70**	Water Commission	$100,000	Water line under US 202/9, 30 feet down, is broken and shut down. Users can still access water since the water is on a loop system so they can obtain water from other direction, but the pressure is lower. This section is not as old as other pipe sections. Fixing this problem is	Earthquake, Public Health (Water Quality/ Disease)	Opposite side of US 202	Cost is for a contractor to perform and replace or sleeve the pipe.	Water User Fees

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
	Cessation of Water Service to This Area					complicated and expensive. The problem may have been caused by an earthquake, but even if not, an earthquake could cause this situation in other locations. (obtaining state approvals and permitting will be necessary) . Should do a direct bore of the pipe.				
#91-2019	**Retrofit a Town Hall Heating System and Install a Stand-Alone Propane Generator to Ensure Continued Municipal Operations during Outages Caused by Winter, Wind, Lightning, Tropical or Solar Storms Events**	**Medium Term 3-4 Years**	**64**	Board of Selectmen	$50,000	The wooden, historic Henniker Town Hall is subject to aging infrastructure and is more sensitive to natural hazard events. Power is often lost. In the basement, an old boiler is situated in a small, padlocked room. Access is difficult and the boiler itself might become problematic in the future. The Town should work with the NH Division of Historical Resources office to ensure upgrades comply with historic regulations. For the three Town facilities requiring emergency generators, the highest priority is Craney Hill Road, then the Town Hall, and lastly the Grange. (School is primary Shelter and has one a generator).	Wind, Winter, Lightning, Tropical, Solar Storms, Power Outage	Town Hall	Cost is for $20,000 generator and wiring plus $30,000 for boiler and pipes, remodeling of room. Includes $5,000 extra for wiring at the Town Hall because of the size and age of the building.	FEMA HMPG, use new Town Owned Expendable Trust Fund (historic buildings)
#92-2019	**Install Two Sets of Buzz-in Doors to Improve Security in the Town Hall and Reduce the Risk of Human Hazard Events**	**Short Term 1-2 Years**	**65**	Board of Selectmen	$20,000	The Town Hall does not have physical barriers for protection of staff and visitors should a human hazard occur (active shooter, hostage, civil disturbance). Badges for staff to get into facilities. Panic buttons only.	Human (Safety)	Town Hall	Cost is for the electrical work, doors, framing, etc and labor.	FEMA HMPG, use new Town Owned Expendable Trust

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
						Henniker Loss Prevention Committee Looked into placing a bullet proof window (Town Clerk), not voted upon. Project would create a safer municipal office for staff and visitors.				Fund (historic buildings)
#93-2019	**Install Three Bullet-Resistant Glass Barriers and Harden the Walls with Kevlar in the Town Hall at Town Clerk's Office, Administrative Secretary's Office, and Assessing Office to Reduce the Risk of Human Hazard Events**	**Medium Term 3-4 Years**	**65**	Board of Selectmen	$30,000	The Town Hall does not have physical barriers for protection of staff and visitors should a human hazard occur (active shooter, hostage, civil disturbance). Panic buttons only. Henniker Loss Prevention Committee Looked into placing a bullet proof window (Town Clerk), not voted upon.	Human (Safety)	Town Hall	Cost is for labor and materials, including 3 glass barriers, & 3 hardened walls.	FEMA HMPG, use new Town Owned Expendable Trust Fund (historic buildings)
#94-2019	**Install Audio/Video Surveillance of Craney Hill Tower to Increase Response Time to Vandalism or Other Human Activity and to Wind, Winter, Tropical or Other Hazard Events**	**Medium Term 3-4 Years**	**70**	Fire Department	$5,000	The Craney Hill Towers experience human activity. The Fire Department is evaluating the use of video and audio surveillance to increase response time. Surveillance does not work when power and internet outages occur. With a stand-alone generator, this project can be successful. If wireless is available, project should not cost too much.	Vandalism, Human, Wind, Winter, Lightning, Tropical, Solar Storms, Power Outage	Craney Hill Tower	Cost is for the purchase and installation of cameras, wiring, and monitors.	Capital Area Mutual Aid Compact, FEMA Security Grant
#95-2019	**Install Appropriate Signage and/or Fencing at Craney Hill Tower to Dissuade Visitors from Investigation of the Tower to Reduce the Risk of Injury,**	**Medium Term 3-4 Years**	**67**	Fire Department	$5,500	The Craney Hill Towers experience human activity. The Fire Department is evaluating the use of video and audio surveillance to increase response time. Surveillance does not work when power and internet outages occur.	Vandalism, Human, Wind, Winter, Lightning, Tropical, Solar Storms, Power Outage	Craney Hill Tower	Cost is for the purchase and installation of 8' fencing for the tower and little communications building	Capital Area Mutual Aid Compact

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
	Vandalism or Communications Disruption								($5,000) and $500 signage.	
#96-2019	**Install Propane Generator at Craney Hill Communications Tower to Ensure Normal Communications Operations During Power Outages Caused by Winter, Wind, Lightning, Tropical or Solar Events**	**Medium Term 3-4 Years**	**71**	Fire Department	$20,000	The Craney Hill Communications Tower often experiences utility outages from snow, ice, high winds, and debris. The Fire Dept must first shovel a path to the Tower, then bring a portable generator onsite and maintain gasoline for operations to continue. The Tower hosts important local Town Highway, Fire and Rescue, and Police dispatch communications; Capital Area Mutual Aid dispatch for the region, which also carries the redundant backup for Lakes Region Mutual Aid; hosts Merrimack County communications; and the tower is a repeater tower. Access to the site is difficult during winter and is often granted by a property owner on private Corbin Road. People often try to vandalize the Tower, which stores the expensive radio and communications equipment. The icy steps during winter are hazardous for staff accessing the facilities but also are dangerous for trespassers.	Wind, Winter, Lightning, Tropical, Solar Storms, Power Outage	Craney Hill Tower	Cost is $20,000 generator and wiring. Generator should be elevated on the tower platforms so people would not vandalize it.	Capital Area Mutual Aid Compact, EMPG 50/50

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
#97-2019	**Develop a Culvert Location Map by GPSing Locations and Recording Data Set of Overall conditions to Reduce the Risk of Washout and Erosion by Flood, Dam Breach, Winter, and Debris**	**Medium Term 3-4 Years**	**72**	Road Management Committee	$5,000	When spring melts the snow and the temps change or during heavy rains, washouts occur at: Liberty Hill Road, Craney Hill Road (paved), Patterson Hill Road (half paved), Quaker Hill Road (half paved), Butter Road, Mount Hunger Road, Dodge Hill Road (half paved), Cote Hill Road (paved), Hemlock Corner Loop. Seek a geolocator app for an intern to use, use CNHRPC to convert to usable data files. Place into Access database at Town Hall.	Flood, Erosion, Dam Breach, Winter, Wind, Tropical, Debris	Town Roads	Cost is for intern labor and a GPS geolocator app or alternative data collector.	Highway Department Operating Budget
#98-2019	**Install Climate Control at Academy Hall and Digitize Records and Photographs Before Damage Accumulates to Improve Historic Preservation of Henniker's Cultural Identity**	**Long Term 4-5 Years**	**69**	Henniker Historical Society	$15,000	Academy Hall has a formal filing system and a computer, with one room for humidity controls. The museum-like facility holds back room artifacts of all types. Academy Hall has no heat but contains important Henniker cultural artifacts and records are subject to cold, heat, and humidity. The Historical Society occupies the Town-owned building, paid for 50% for cupola repair (50% from Town).	Extreme Temperatures (Hot & Cold), Humidity, Winter, Storms, Tropical	Historical Society	Cost is for the purchase and installation of a climate control system for at least one room. In-kind volunteer labor can digitize the records, but for faster completion may need to pay for labor.	LCHIP Moose Plate Grant, Historic Commission & Heritage Grants
#99-2019	**Construct a Highway Dept Outdoor Storage Building to Protect Vehicles to Ensure Continued Operations During Winter, Wind,**	**Short Term 1-2 Years**	**67**	Highway Department	$60,000	The Highway Dept has to store some of its vehicles outside because there is not enough room in the new Highway Garage. The Dept needs overhead cover to store equipment. A prefabricated metal building would be effective	Flood, Winter, Wind, Tropical	Town Roadways	Cost is for the prefabricated building. In-kind labor will construct the building.	Warrant Article

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, or Flood Events					for this purpose. Having vehicles outside exposes them to the elements and reduces their ability to respond to elemental hazard events, as well as reducing their lifespan.				
#115-2019	**Install a Dry Hydrant at Quaker Street at Pleasant Pond to Reduce the Impact of Fire, Wildfire and Lightning**	**Long Term 4-5 Years**	**68**	Fire Department	$30,000	The Pleasant Pond location is shallow where the pipe would be installed. There is no other water source in the vicinity and there is a lot of elevation change (hills) for trucks to haul water. A large number (about 50) of big houses are located up there, and the hydrant could serve all of the area residents.	Lightning, Wildfire, Drought, Hazardous Materials, Fire	Quaker Street at Pleasant Pond	Cost is for excavation, piping, fittings, fill material, strainer, and installation.	USDA Rural Fire Protection Grant

Source: Henniker Hazard Mitigation Committee

Table 52

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
#73-2014	**Stabilize the River Bank Erosion in Azalea Park to Reduce the Risk of Erosion and Bank Failure**	**Medium Term 3-4 Years**	**67**	Azalea Park Committee	$0	Plan for stabilization was conducted in 2015 by the US ACE. Becoming a safety hazard, the safety railing parallel with the ground, graffiti. The next stage is for stabilization could include bank stabilization and/or a rock jetty.	Flood, River, Erosion, Debris	Contoocook River (Azalea Park)	Cost is for in-kind volunteer labor and the collection of donations to fund the project.	Donations
#100-2019	**Develop an Engineering Study for Identification of Potential Open Lands for Town Purchase between Western Avenue and the Contoocook River**	**Long Term 4-5 Years**	**62**	Board of Selectmen	$75,000	Two sites may be available for additional flood storage capacity. 1) A potential brownsfield (may have lead from old skeet firing range and trapping) property on Western Avenue for flood storage capacity has been for sale for years (Lot #380-A). New owners have not wanted the burden of cleaning the land. Hiking trails highly used, for fishing. 2) Another location for potential flood storage capacity is the old west paper mill site by the steel bridges, which may also be for sale. HMGP funding could be used for acquisition of the firing range because it has a building (the Town should submit a Letter of Intent). Study should include their environmental clean-up costs of contaminants. Whenever the river floods, lead can flow off into the river.	Flood, River, Health (Water Quality/ Disease & Safety)	Western Avenue by Contoocook River	Cost is for engineering study, test pits, study by consultant.	HMGP funding for acquisition of firing range land/building (in summer 2019, new HMPG funds became available
#101-2019	**Purchase Open Lands between Western Avenue and the**	**Long Term 4-5 Years**	**59**	Conservation Commission	$400,000	If the Jackman Dam (aka Pierce Lake Dam) fails, heavy water will flow up the Contoocook through	Flood, Tropical	Western Avenue by	Cost is for the purchase of land, legal	Conservation Fund, possibly

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
	Contoocook River to Increase Henniker's Flood Storage Capacity and Increase Safety of Town Residents During Flood Events					Hillsborough Village and into Henniker. Western Avenue is the first populated area the floodwaters would reach.		Contoocook River	documentation, title fees.	FEMA acquisition grants
#102-2019	**Train Pat's Peak Ski Area Personnel to Identify Avalanche Conditions and Close Trails to Reduce the Risk of Personal Injury and Building Damage**	**Short Term 1-2 Years**	**75**	Emergency Management	$0	An avalanche at Pat's Peak could impact the 6 black diamond trails, including the rare possibility of catching people on the trails. Buildings- Pat's Peak Lodges may be caught in such an event.	Avalanche, Winter, Earthquake, Extreme Temperatures	Pat's Peak Ski Area	Cost is $0 for the Town for in-kind staff and volunteer labor because any equipment and labor would be paid for by Pat's Peak.	N/A
#103-2019	**Document and Prioritize Drainage Ditches and Culverts for Debris for Clearing During Storm Events**	**Medium Term 3-4 Years**	**75**	Highway Department with Fire Department, and Roads Management Committee	$0	When spring melts the snow and the temps change or during heavy rains, washouts occur at: Liberty Hill Road, Craney Hill Road (paved), Patterson Hill Road (half paved), Quaker Hill Road (half paved), Butter Road, Mount Hunger Road, Dodge Hill Road (half paved), Cote Hill Road (paved), Hemlock Corner Loop. However, all need to be looked at. Landowners need to be educated about why trees are removed and ensure they maintain their own ditches. They have grown too large and taken over ditches and need to be cut. Conduct an inventory to document and prioritize the drainage ditches in Town, using	Flood, River, Erosion, Wind, Winter, Tropical, Debris	Town Roadways	Cost is for in-kind staff and volunteer labor.	N/A

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
						documentation photos taken several years ago for comparison. Tie into Road Mgt Comm's Phase 2 Road Management Plan Report. Highway Dept could use a FD tanker truck to clear a large pipe easily. Train additional resources such as Fire Dept personnel to assist with this task during emergencies.				
#104-2019	**Develop an Ice Jam Response Plan Annex in the Emergency Operations Plan to Reduce the Impact to People and Infrastructure During Ice Events**	**Short Term 1-2 Years**	**75**	Emergency Management	$0	Ice jams are regularly occurring on the Contoocook River on the Western Avenue Bridge and Patterson Hill Road Bridge. No damage, watched and waited for its approach and melt. Have had more ice jams recently than in previous years, and a plan for evacuation needs to be developed and breaking up the ice.	Ice, Winter, Extreme Temperatures	Contoocook River, Western Avenue	Cost is for in-kind staff and volunteer labor.	N/A

Source: Henniker Hazard Mitigation Committee

Table 53
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
#26-2008	**Provide Available Disaster Pamphlets and Information Regarding Emergency Supplies and Sheltering and Engage in Public Education for Developing a Personal 72-Hour Emergency Preparedness Kit to Minimize the Impact of Wind, Winter, Flood, Tropical and Other Hazards**	Short Term 1-2 Years	75	Emergency Management	$0	Informational materials will increase public awareness and help prevent damage to life as well as improve public relations. Information will be disseminated through reproduction of the pamphlets posted on the Town of Henniker website and in the Annual Town Report; brochures will be made available at the Town Hall, Transfer Station, churches, and Downtown stores. This in-depth community awareness activity encourages long-term, personal mitigation techniques to ensure people are safer when natural hazard events occur.	Drought, Earthquake, Temperature, Wind, Flood, Landslide, Lightning, Health (all), River, Winter, Solar, Tropical, Wildfire	Entire Town	Cost is for in-kind staff and volunteer labor.	N/A
#105-2019	**Establish a Citizens Emergency Response Team (CERT) to Enable Quick Response to Disasters in Henniker**	Short Term 1-2 Years	73	Emergency Management with Town Administrator	$2,000	Access to the private doctors is not always possible if the office is closed or they are out of Town. The Town has many of its emergency personnel working out of town and emergency response could take time. If the Town had a large-scale disaster or other emergency where Departments would benefit from assistance in maintaining the safety of townspeople, more trained people should be on hand to respond. The development of a local CERT is an appropriate activity to help gather medical resources when	Drought, Earthquake, Temperature, Wind, Flood, Landslide, Lightning, Health & Safety, River, Winter, Solar, Tropical, Wildfire	Entire Town	Cost is for $2,000 volunteer supplies.	Emergency Management Budget

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
						needed and to work at making other medical facilities available during events. Send a roster to PRIMEX to ensure volunteers are covered by liability insurance.				
#106-2019	**Educate NEC Students of All Classes and Train Resident Assistants to Ensure Town Pedestrian Rules Are Followed to Reduce the Risk of Vehicle-Pedestrian Crashes**	**Short Term 1-2 Years then Ongoing**	**71**	Police Department, partner with Campus Safety	$0	Barrels or signalized pedestrian intersection could be used. This intersection of downtown was just re-done in 2017. Find ways to make pedestrians safer and intersections easier for drivers and pedestrians/bicyclists to understand. PD talks to incoming freshmen, then officers spend at least 40 hours per year on this effort. Multiple partners are involved for Highway Department, Police Dept, Town Administration and Planning should work together on Depot Hill and NH DOT (NH 114) - Town maintains the sidewalk.	Crash, Health (Safety), Human	NH 114, Main Street, Entire Town	Cost is for in-kind staff and volunteer labor.	Could approach NEC to assist with in-kind cost to the Town.
#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**	**Short Term 1-2 Years then Ongoing**	**75**	Emergency Management with Fire Department	$0	(Haz Materials) Flooding along the Contoocook River can result in flooding to small aboveground tanks on the bank. Several fuel companies are located in Henniker. Information can be placed in the Town report and Town website. May work with fuel companies to have them hand out flyers. Talk to Ayer and Goss as well.	Flood, Hazardous Materials, Fire / Explosion	Contoocook River properties	Cost is for free FEMA materials.	N/A
#108-2019	**Encourage the Installation of Lightning Rods and Grounding/ Surge**	**Short Term 1-2 Years**	**75**	Fire Department	$0	Damage from wind, fire, lightning, or earthquake to the Congregational Church Parish Hall and/or St. Theresa's Parish,	Lightning, Wildfire, Fire (Conflagration), Human	Congregational Church Parish Hall,	Cost is for in-kind staff and volunteer labor.	N/A

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Panels at the Churches to Support Their Use as Secondary Shelters and Reduce the Impact of Lightning					which are the evacuation locations for White Birch Center, would require tertiary off-site evacuation plans for the White Birch patrons.		St. Theresa's Parish		
#109-2019	**Encourage the Installation of Lightning Rods and Grounding/ Surge Panels in Downtown Block Buildings to Reduce the Impact of Lightning and Conflagration**	**Short Term 1-2 Years**	**75**	Fire Department	$0	The historic, wooden downtown Cogswell Water, White Birch, and other Main Street buildings be a catalyst for a conflagration should a lightning strike occur (no lightning rod) or if a fire is started in one of these downtown buildings. Downtown Block has the greatest potential for conflagration. When FD does inspections, this would be a good time to talk to building owners.	Lightning, Wildfire, Fire (Conflagration), Human	Downtown Block Buildings	Cost is for in-kind staff and volunteer labor.	N/A
#110-2019	**Educate the Owners of the Downtown Block about Vehicle and Pedestrian Safety, Parking, and Fire Suppression**	**Short Term 1-2 Years**	**72**	Fire Department with Police Department	$0	Downtown Henniker has a large potential for pedestrian-vehicle crashes, vehicle crashes, and parking accidents. The potential for fire conflagration with the historic wooden buildings situated against and adjacent to one another is substantial; many buildings do not have fire suppression systems. Education of building owners and lessees needs to be undertaken to reduce the risk of each of these potentially fatal hazards.	Lightning, Wildfire, Fire (Conflagration), Human, Crash	Downtown Block Buildings	Cost is for in-kind staff and volunteer labor.	N/A
#111-2019	**Educate the Western Avenue Residents and Property Owners about Flood Safety and Evacuation to**	**Medium Term 3-4 Years**	**70**	Emergency Management with USACE	$100	Flooding for all riverside Western Avenue facilities and Old Concord Road facilities beside the Contoocook River can occur during heavy rainfall or snow	Flood, River, Evacuation, Health (Safety)	Western Avenue	Cost is for reproduction of 300 maps and evacuation brochures.	Town Administration Operations Budget

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
	Reduce the Risk of Injury and Isolation			(maps and planning)		melt. Apartment owners need to keep their tenants up to date. Government owns flowage easements to where old Mill Dam, to elevation 420 (2 feet above spillway crest at Hopkinton Dam).				
#112-2019	**Conduct a Drill with NEC on an Active Shooter Simulation to Reduce the Impact of an Active Shooter or Similar Event**	**Medium Term 3-4 Years**	**71**	Police Department with NEC, Fire Dept, HSEM	$35,000	New England College has a large ice arena that hosts events, political candidates, sports, and more. Heavy rains or wind, active shooter possibility could close down the arena and require an evacuation. The college has an international student population and is known for its liberal arts and political science curriculum. Engage actors for a more realistic drill (use NEC Theatre for makeup). Last completed at Center for Educational Innovation in 2012 for the full exercise. Hold TTXs regularly.	Human (Active Shooter)	New England College	Cost is for overtime. Must train people, have TTXs, have done second level TTX with college, supplies, food and refreshments.	FEMA Training grants
#113-2019	**Educate the Public on the Appropriate Use of Drones in Town and on the New Drone Policy to be Developed to Reduce the Risk of Crashes onto Vehicles, Buildings, and People**	**Medium Term 3-4 Years**	**72**	Board of Selectmen, with Emergency Management and Fire Department	$0	Drones are being used by many businesses (such as real estate) and people for personal use. Drone piloting is not regulated and accidents could occur at any time, with large drones crashing into people, vehicles, or buildings. The potential for explosion exists. One recent 2019 example is when Fire Department responded to a propane gas leak and a drone helicopter was hovering nearby filming the incident; a crash	Crash, Fire, Hazardous Materials, Health (Safety), Human	Sensitive Areas, such as Hopkinton Everett Lake Dam and Main Street Downtown Block	Cost is for in-kind staff and volunteer labor.	N/A

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	Description and Evaluation of Action	Hazards Mitigated?	Affected Location in Town	What Cost Will Pay For	How Funded
						would have caused an explosion that could have injured responders. Personal privacy concerns are also valid. The Town will seek to view the regulation the Army Corps uses to develop its own safety regulations for the use of drones. Once the policy is developed, the Town must educate residents about appropriate use according to the policy. Town website and Facebook will be one of the main ways of getting the ways.				
#114-2019	**Provide a List of Responsible and Sustainable Nuisance Animals Trappers to the Public when Complaints are Issued to the Town about the Beavers to Reduce the Risk of Wildlife Injury or Beaver Dam Breach**	**Short Term 1-2 Years then Ongoing**	**73**	Highway Department, uses NH F&G list	$0	The Town has a large beaver problem, and their population is swelling. They are now moving their lodges and dams Downtown. Residents often call the Town to complain, sometimes it is appropriate to defer to Army Corps or refer to the State. For more immediate assistance, provide the list of responsible trappers that humanely trap beaver to residents that the Town and State use instead of referral. Information will be on the website as well.	Public Health (Disease), Beaver Dam Breach, Wildlife Sustainability	Entire Town, Brooks	Cost is for in-kind staff and volunteer labor.	N/A

Source: Henniker Hazard Mitigation Committee

Great Projects… And the Realities of Project Implementation in New Hampshire

These important but costly and/or time-consuming mitigation projects identified in the **Mitigation Action Plan** represent the best case scenarios (or to some, "wish-list" items) for completion. There are many barriers to successful implementation of any project which is outside the typical duties of a Town staff member or volunteer. The annual struggle to obtain municipal funding at Town Meetings and the uncertainty of political & local support needed for hazard mitigation projects, the limited staff time available to administer and complete the projects, and dwindling volunteer support to help locate grants and work on the Action Plan items all reduce the Town's ability to complete successful hazard mitigation projects within the Plan's **5**-year lifespan. Town staff and volunteers are usually required to be reactive to their numerous daily duties or annual processes and have little availability to be proactive. This is especially true for the Central NH region's smaller communities that rely on voter support for staff hiring and/or hazard mitigation project budget funding, which is **19** out of **20** municipalities (excludes the City of Concord).

Therefore, mitigation and other projects are generally completed on an "as-needed basis" or on an "as-available basis" despite the different ways of evaluation and prioritization shown within the **Hazard Mitigation Plan 2019**. Small New Hampshire communities do the best they can with the resources available to them to make ends meet, particularly in times of economic duress or hardship and our State's aging population. Town Meeting voters decide whether to approve new zoning ordinances which can help mitigate hazards, vote to approve Department Budgets which usually are sustainable and do not allow enough flexibility to plan ahead, and vote to approve Warrant Articles for a hazard mitigation project. Town volunteers are relied upon to do much of the hazard mitigation work as Town staff are already engaged in real-time, constant public engagement issues and have little additional time available for planning. Few younger people are stepping up to the plate of community volunteering when our existing volunteers are retiring. Indeed, many staff or volunteers have dual or triple roles in the community to fill vacancies, such as a Town Administrator serving as Health Officer and Human Services Officer and a volunteer Fire Chief serving as volunteer Emergency Management Director. Town staff try to accomplish their priority hazard mitigation projects in between their normal duties, but the reactive nature of New Hampshire municipal operations does not provide the necessary support unless there is an urgent need.

Our State's communities, including Henniker, are used to "toughing it out" and will try to accomplish all they can with the time, funding, and resources available to them. However, many of these **2019** Actions may end up **Deferred** to **2024** simply because of the unique nature of our independent State and community cultures.

Action Evaluation and Prioritization Methods

A variety of methods were utilized to evaluate and prioritize the Actions. These methods include the enhanced STAPLEE (Social Technical Administrative Political Legal Environmental and Economics) criteria, designating the Action to be completed within a certain timeframe, and completing a basic **Cost to Benefits Analysis**, a later section. These prioritization methods are meant to enable the community to better identify which Actions are more important and are more feasible than others.

ENHANCED STAPLEE METHOD

An enhanced provided a better methodology for prioritization the Actions against one another. The Hazard Mitigation Committee ranked each of the mitigation Actions derived from the evaluation process. The total ***Ranking Score*** serves as a guide to the **relative** ease of Action completion by scoring numerous **societal and ethical impact questions** and does not represent the Town's Action *importance* priority. Instead, the STAPLEE process evaluates each Action and attempts to identify some potential barriers to its success. As revised in **2019**, a score of **75** would indicate that the mitigation strategy, or Action, would be relatively among the easiest Actions to achieve from a social and ethical standpoint.

The previous Plans including the **2014 Plan** had answered the same questions, except the three new questions regarding funding, staffing, and historic preservation, on a scale of **1-3**, with "**1**" indicating a **NO** response, "**2**" indicating a **MAYBE** response, and "**3**" indicating a **YES** response, for a possible highest ranking total score of **36**.

There is more latitude in the **2019 Plan**'s enhanced STAPLEE scores to more easily identify the relatively easiest Action projects for completion. All enhanced STAPLEE answers are subjective and depend on the opinions of the Committee members discussing them. The Committee answered these **15** questions with a numeric score of "**1**" indicating a **NO** response, "**2**" indicating an **UNCERTAIN** response, "**3**" indicating a **MAYBE** response, "**4**" indicating a **LIKELY** response or "**5**" indicating a **YES** response, about whether the Action can fulfill the criteria:

- Does the action reduce damage and human losses?
- Does the action contribute to community objectives?
- Does the action meet existing regulations?
- Does the action protect historic structures?
- Can the action be implemented quickly?
- Is the action socially acceptable?
- Is the action technically feasible?
- Is the action administratively possible?
- Is the action politically acceptable?

Action Completion	
RANKING	SCORE
Excellent	75 - 60
Good	45 - 59
Fair	44 - 30
Poor	29 - 15

- Does the action offer reasonable benefits compared to its cost in implementing?
- Is the action legal?
- Is the action support or protect the environment?
- Does the action have the funding necessary for completion?
- Does the action have the necessary staff or volunteers to undertake?
- Does the action support historic preservation?

The enhanced STAPLEE scores can range from a low of **15** to a high **75**, the highest possible ranking. Henniker's **Mitigation Action Plan** STAPLEE rating is shown in **Figure 28** and includes a basic benefit-cost ranking as shown in yellow.

Figure 28
Enhanced STAPLEE Ranking of Mitigation Actions

Action Number	Does the Action..... or Is the Action..... ACTION	Reduce Damage? (or Injury)	Contribute to Town Objectives? (Supported by Master Plan or	Meet Regulations? (If there are any)	Protect Sensitive Structures? (Buildings, roads, culverts, human-made	Implemented Quickly? (See also Action Plan for Timeframe)	Socially Acceptable? (People like it)	Politically Acceptable? (Public Officials like it)	Administratively Realistic? (Have admin skills or time for paperwor	Technically Feasible? (Have tech skills or special equipment)	Have a Reasonable Cost to Benefits Gained?	Legal? (Or will be legal upon completion)	Support or Protect the Environment?	Have the Funding?	Have Necessary Staff or Volunteers?	Support Historic Preservation?	Ranking Score 15-75
#46-2014	Develop a Culvert Identification and Replacement Plan to Reduce the Risk of Road Washouts, Erosion, and Culvert Debris	5	5	5	5	3	4	5	3	4	5	5	5	1	5	1	61
#69-2014	Update the Zoning Ordinance to Comply with NFIP Requirements to Reduce the Impact of Flooding	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	73
#70-2014	Develop Plan for the Stabilization of the Contoocook River Bank on Western Avenue to Reduce the Risk of Erosion	5	5	5	5	1	3	3	5	5	2	5	5	1	1	5	56
#71-2014	Develop Pre-Plan Response SOG to Handle Structural Hazards and Reduce the Risk of Evacuee Injury, Conflagration and Hazardous Materials Spills	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#74-2019	Develop a Waste Water Asset Management Municipal Database to Reduce the Risk of Pipe Breakage	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#75-2019	Consider Secondary Egress for Larger Subdivisions to Increase Evacuation Levels During Hazard Events Such as Wildfire, Flooding, Winter, and Wind Events (Tree	5	5	5	3	5	3	3	5	5	5	5	5	5	5	1	65
#76-2019	Develop a Drainage Maintenance Plan to Keep the Ditch and Catch Basin Facilities Clear, Reducing the Risk of Road Washouts and Culvert Debris during Heavy Rain and Snow Melt Events	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	73
#77-2019	Develop a Pedestrian Infrastructure Study of the NH 114 (Main Street) to Ramsdell Road Area to Reduce the Risk of Pedestrian and Vehicle Crashes	5	5	5	4	5	5	5	5	5	5	5	3	2	5	5	69
#78-2019	Develop an Evacuation Plan for Western Avenue Residents in the Contoocook River Floodplain to	5	5	5	1	4	5	5	5	5	5	5	1	5	5	1	62
#79-2019	Develop a Formalized Plan or MOU with Pats Peak and Michie Corp for Monitoring Their Respective Chase Brook Dams During High Water Events to Reduce the Risk of Dam Breach	5	5	5	5	5	3	5	5	5	5	5	5	5	5	3	71
#80-2019	Review Solid Waste Ordinances and State Junkyard Regulations and Identify Properties Which are Unlicensed Junkyards to Ensure Regulations are Followed to Protect Drinking Water and Soil from Contamination	5	5	5	5	1	3	4	5	5	5	4	5	1	3	5	61
#81-2019	Investigate Developing Regulatory Requirements for Underground Propane Tanks to Reduce the Risk of Explosion	5	5	3	5	5	5	5	5	5	5	5	5	5	3	4	70
#82-2019	Develop a Policy for Regulation of Drones in Certain Areas of Town to Reduce the Risk of Crash, Fire, and Privacy Concerns	5	5	5	5	4	4	4	5	5	5	5	5	5	5	3	70

Action Number	Does the Action..... or Is the Action..... ACTION	Reduce Damage? (or Injury)	Contribute to Town Objectives? (Supported by Master Plan or current thinking?)	Meet Regulations? (If there are any)	Protect Sensitive Structures? (Buildings, roads, culverts, human-made things?)	Implemented Quickly? (See also Action Plan for Timeframe)	Socially Acceptable? (People like it)	Politically Acceptable? (Public Officials like it)	Administratively Realistic? (Have admin skills or time for paperwork)	Technically Feasible? (Have tech skills or special equipment)	Have a Reasonable Cost to Benefits Gained?	Legal? (Or will be legal upon completion)	Support or Protect the Environment?	Have the Funding?	Have Necessary Staff or Volunteers?	Support Historic Preservation?	Ranking Score 15-75
#24-2008	Utilize Land Development Regulations to Continue the Program to Install Dry Hydrants & Cisterns at Rural Locations	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#38-2014	Install a Dry Hydrant on Plummer Hill Road at the Pond to Reduce the Impact of Fire, Wildfire and Lightning	5	5	5	5	3	5	5	5	5	5	5	5	2	5	5	70
#39-2014	Install a Dry Hydrant on Old Hillsboro Road at the Brook and Swamp to Reduce the Impact of Fire, Wildfire and Lightning	5	5	5	5	1	5	5	5	5	5	5	5	2	5	5	68
#41-2014	Upgrade Three Butter Road Culverts to Reduce the Impact of Floods and Erosion	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#42-2014	Upgrade Two Mount Hunger Road Culverts to Reduce the Impact of Floods and Erosion	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#45-2014	Upgrade Three Culverts at Flanders Road and Gulf Road	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#47-2014	Upgrade Three Culverts on Ray Road to Reduce the Impact of Floods and Erosion	5	5	5	5	4	5	5	5	5	5	5	5	4	5	5	73
#49-2014	Upgrade Five Culverts on Rush Road to Reduce the Impact of Floods and Erosion	5	5	5	5	4	5	5	5	5	5	5	5	4	5	5	73
#50-2014	Upgrade Culvert on Colby Hill Road to Reduce the Impact of Floods and Erosion	5	5	5	5	3	5	5	5	5	5	5	5	2	5	5	70
#51-2014	Upgrade 5 Culverts on Craney Hill Road to Reduce the Impact of Floods and Erosion	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#52-2014	Upgrade Eight Culverts on River Road to Reduce the Impact of Floods and Erosion	5	5	5	5	3	5	5	5	5	5	5	5	2	5	5	70
#53-2014	Upgrade Three Culverts on Hemlock Corner Loop to Reduce the Impact of Floods and Erosion	5	5	5	5	3	5	5	5	5	5	5	5	2	5	5	70
#54-2014	Upgrade Eleven Culverts on Western Avenue to Reduce the Impact of Floods and Erosion	5	5	5	5	4	5	5	5	5	5	5	5	4	5	5	73
#55-2014	Upgrade Ten Culverts on Dodge Hill Road to Reduce the Impact of Floods and Erosion	5	5	5	5	3	5	5	5	5	5	5	5	2	5	5	70
#61-2014	Rehabilitate the One-Lane Wooden Deck Bridge Connecting Western Avenue and Patterson Hill Road to Ensure Adequate Drainage and Safe Passage and Reduce Damage from Lightning, Flooding and Scouring	5	5	5	5	1	3	5	5	5	5	5	5	1	1	5	61
#83-2019	Determine Floodproofing Options for West Henniker and Ramsdell Road Waste Water Pumping Stations	5	5	5	5	3	5	5	5	5	5	5	5	1	1	1	61
#84-2019	Upgrade Sidewalks on Rush Road, Western Avenue, Hall Avenue and Prospect Street to Improve Drainage and Reduce the Risk of Pedestrian and Vehicle Crashes	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#85-2019	Install a Stand-Alone Propane Generator at the Grange to Ensure Continued Municipal Operations During Power Outages and Reduce the Risk of Damage to Food Supplies to Underserved Residents	5	5	5	5	3	5	5	5	5	5	5	2	1	5	5	66
#86-2019	Finance the Installation of Stand-Alone Generator and Showering Facility at White Birch Center to Enable its Use as a Secondary Town Shelter	5	5	5	5	3	5	5	5	5	5	5	1	3	5	3	65
#87-2019	Encourage New England College to Install Generators for the Three Critical Infrastructure Buildings without Them, Including Simons Student Center (a Temporary NEC Shelter), Gilmore Dining Hall, and the Lee Clement Field House	5	5	5	5	5	5	5	5	5	5	5	1	5	5	1	67
#88-2019	Encourage the Installation of a Lightning Rod and Surge Panels at White Birch Center to Support Its Use as a Secondary Shelter and Reduce the Risk Fires in the Downtown Block	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	73
#89-2019	Develop a Study to Consider Locations for a Solar Array Microgrid Installation	5	5	5	5	2	3	4	5	5	5	5	5	3	5	1	63
#90-2019	Repair and Upgrade Broken 10" Waterline Under US 202 and Reroute the Pipe Location to Reduce the Risk of Water Quality Contamination or Cessation of Water Service to This Area	5	5	5	5	5	5	5	5	5	5	5	5	1	5	4	70

Action Number	Does the Action..... or Is the Action..... ACTION	Reduce Damage? (or Injury)	Contribute to Town Objectives? (Supported by Master Plan or current thinking?)	Meet Regulations ? (If there are any)	Protect Sensitive Structures? (Buildings, roads, culverts, human-made things?)	Implemented Quickly? (See also Action Plan for Timeframe)	Socially Acceptable ? (People like it)	Politically Acceptable ? (Public Officials like it)	Administratively Realistic? (Have admin skills or time for paperwork)	Technically Feasible? (Have tech skills or special equipment)	Have a Reasonable Cost to Benefits Gained?	Legal? (Or will be legal upon completion)	Support or Protect the Environment ?	Have the Funding?	Have Necessary Staff or Volunteers ?	Support Historic Preservation?	Ranking Score 15-75
#91-2019	Retrofit a Town Hall Heating System and Install a Stand-Alone Propane Generator to Ensure Continued Municipal Operations during Outages Caused by Winter, Wind, Lightning, Tropical or Solar Storms Events	5	5	5	5	2	5	5	5	5	5	5	1	1	5	5	64
#92-2019	Install Two Sets of Buzz-in Doors to Improve Security in the Town Hall and Reduce the Risk of Human Hazard Events	5	5	5	5	5	3	5	5	5	5	5	1	1	5	5	65
#93-2019	Install Three Bullet-Resistant Glass Barriers and Harden the Walls with Kevlar in the Town Hall at Town Clerk's Office, Administrative Secretary's Office, and Assessing Office to Reduce the Risk of Human Hazard Events	5	5	5	5	5	3	5	5	5	5	5	1	1	5	5	65
#94-2019	Install Audio/Video Surveillance of Craney Hill Tower to Increase Response Time to Vandalism or Other Human Activity and to Wind, Winter, Tropical or Other Hazard Events	5	5	5	5	3	5	5	5	5	5	5	5	2	5	5	70
#95-2019	Install Appropriate Signage and/or Fencing at Craney Hill Tower to Dissuade Visitors from Investigation of the Tower to Reduce the Risk of Injury, Vandalism or Communications Disruption	5	5	5	5	3	3	5	5	5	5	5	5	1	5	5	67
#96-2019	Install Propane Generator at Craney Hill Communications Tower to Ensure Normal Communications Operations During Power Outages Caused by Winter, Wind, Lightning, Tropical or Solar Events	5	5	5	5	3	5	5	5	5	5	5	5	3	5	5	71
#97-2019	Develop a Culvert Location Map by GPSing Locations and Recording Data Set of Overall conditions to Reduce the Risk of Washout and Erosion by Flood, Dam Breach, Winter, and Debris	5	5	5	5	3	5	5	5	5	5	5	5	4	5	5	72
#98-2019	Install Climate Control at Academy Hall and Digitize Records and Photographs Before Damage Accumulates to Improve Historic Preservation of Henniker's Cultural Identity	5	5	5	5	1	5	5	5	5	5	5	5	3	5	5	69
#99-2019	Construct a Highway Dept Outdoor Storage Building to Protect Vehicles to Ensure Continued Operations During Winter, Wind, Tropical, or Flood Events	5	5	5	5	5	5	5	5	5	5	5	5	1	5	1	67
#73-2014	Stabilize the River Bank Erosion in Azalea Park to Reduce the Risk of Erosion and Bank Failure	5	5	5	5	1	5	5	5	5	5	5	5	1	5	5	67
#100-2019	Develop an Engineering Study for Identification of Potential Open Lands for Town Purchase between Western Avenue and the Contoocook River	1	5	5	5	1	4	5	5	5	5	5	5	1	5	5	62
#101-2019	Purchase Open Lands between Western Avenue and the Contoocook River to Increase Henniker's Flood Storage Capacity and Increase Safety of Town Residents During Flood Events	5	5	5	5	1	1	3	5	5	3	5	5	1	5	5	59
#102-2019	Train Pat's Peak Ski Area Personnel to Identify Avalanche Conditions and Close Trails to Reduce the Risk of Personal Injury and Building Damage	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#103-2019	Document and Prioritize Drainage Ditches and Culverts for Debris for Clearing During Storm Events	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#104-2019	Develop an Ice Jam Response Plan Annex in the Emergency Operations Plan to Reduce the Impact to People and Infrastructure During Ice Events	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#26-2008	Provide Available Disaster Pamphlets and Information Regarding Emergency Supplies and Sheltering and Engage in Public Education for Developing a Personal 72-Hour Emergency Preparedness Kit to Minimize the Impact of Wind, Winter, Flood, Tropical and Other Hazards	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#105-2019	Establish a Citizens Emergency Response Team (CERT) to Enable Quick Response to Disasters in Henniker	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	73

Action Number	Does the Action..... or Is the Action..... ACTION	Reduce Damage? (or Injury)	Contribute to Town Objectives? (Supported by Master Plan or current thinking?)	Meet Regulations? (If there are any)	Protect Sensitive Structures? (Buildings, roads, culverts, human-made things?)	Implemented Quickly? (See also Action Plan for Timeframe)	Socially Acceptable? (People like it)	Politically Acceptable? (Public Officials like it)	Admini-stratively Realistic? (Have admin skills or time for paperwork)	Technically Feasible? (Have tech skills or special equipment)	Have a Reasonable Cost to Benefits Gained?	Legal? (Or will be legal upon completion)	Support or Protect the Environment?	Have the Funding?	Have Necessary Staff or Volunteers?	Support Historic Preservation?	Ranking Score 15-75
#106-2019	Educate NEC Students of All Classes and Train Resident Assistants to Ensure Town Pedestrian Rules Are Followed to Reduce the Risk of Vehicle-Pedestrian Crashes	5	5	5	5	5	5	5	5	5	5	5	5	5	5	1	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	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#108-2019	Encourage the Installation of Lightning Rods and Grounding/Surge Panels at the Churches to Support Their Use as Secondary Shelters and Reduce the Impact of Lightning	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#109-2019	Encourage the Installation of Lightning Rods and Grounding/Surge Panels in Downtown Block Buildings to Reduce the Impact of Lightning and Conflagration	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	75
#110-2019	Educate the Owners of the Downtown Block about Vehicle and Pedestrian Safety, Parking, and Fire Suppression	5	5	5	5	5	2	5	5	5	5	5	5	5	5	5	72
#111-2019	Educate the Western Avenue Residents and Property Owners about Flood Safety and Evacuation to Reduce the Risk of Injury and Isolation	5	5	5	5	3	2	5	5	5	5	5	5	5	5	5	70
#112-2019	Conduct a Drill with NEC on an Active Shooter Simulation to Reduce the Impact of an Active Shooter or Similar Event	5	5	5	5	3	5	5	5	5	5	5	5	3	5	5	71
#113-2019	Educate the Public on the Appropriate Use of Drones in Town and on the New Drone Policy to be Developed to Reduce the Risk of Crashes onto Vehicles, Buildings, and People	5	5	5	5	3	5	4	5	5	5	5	5	5	5	5	72
#114-2019	Provide a List of Responsible and Sustainable Beaver Trappers to the Public when Complaints are Issued to the Town about the Beavers to Reduce the Risk of Wildlife Injury or Beaver Dam Breach	5	5	5	5	5	5	5	5	5	5	5	3	5	5	5	73
#115-2019	Install a Dry Hydrant at Quaker Street at Pleasant Pond to Reduce the Impact of Fire, Wildfire and Lightning	5	5	5	5	1	5	5	5	5	5	5	5	2	5	5	68

Source: Henniker Hazard Mitigation Committee

ACTION TIMEFRAMES

The Actions are also prioritized by an estimated ***Action Timeframe*** for completion based upon the other Town activities (hazard mitigation-related or not), funding potential for the Action, the need for the Action project, and possible staff time and volunteers available to complete the Action. This **relative** Action importance priority is measured by the **time indicated for project completion**. All Action projects within the **Mitigation Action Plan** have been assigned an ***Action Timeframe***.

Those projects which are designated as **Ongoing** mean the Action should be undertaken on a regular basis throughout the five-year lifespan of the Plan. Actions that could qualify as **Ongoing** include public education, zoning ordinance or regulation revisions, essential mitigation maintenance and more. However, even **Ongoing** Actions are completed once before repetition. As a result, those Actions with an **Ongoing** ***Action Timeframe*** also include a duration (**Short**, **Medium** or **Long Term**) included.

Action Timeframe	Description of Timeframe
Ongoing	Action undertaken throughout the life of the 5-year Plan
Short Term	Action should be undertaken during Years 1-2 of the Plan
Medium Term	Action should be undertaken during Years 3-4 of the Plan
Long Term	Action should be undertaken during Years 4-5 of the Plan

Short Term projects are those which are the more important Actions and should be undertaken during **Years 1-2** of the Plan's lifespan if possible. **Medium Term** Actions are recommended by the Hazard Mitigation Committee to be undertaken during **Years 3-4** of the Plan's lifespan, while **Long Term** Actions are those which should wait until last, with suggested implementation undertaken during Plan **Years 4-5**. It is important to remember the ***Action Timeframes*** are relative to each other and are another an indication of Action importance. If an Action cannot be completed within the ***Action Timeframe***, it may still be a higher priority than other Actions but was unable to be implemented for some reason.

Both the ***Action Timeframe*** and the ***Ranking Score*** are incorporated into the **Mitigation Action Plan** to assist the Town with implementing the hazard mitigation Actions. The Actions can be sorted within their Action Category by either priority for easy display of the desired characteristic; Actions can also be sorted by **Responsible Department** to keep them all together for ease of completion.

COST TO BENEFIT ANALYSIS

A simple **Cost to Benefit Analysis** ranking is contained within the enhanced STAPLEE criteria as displayed in the previous **Figure**.

Natural Hazards Evaluated for Which Specific Actions Were Not Identified

The Hazard Mitigation Committee assessed each of hazards and made determinations whether to specifically develop mitigation Actions for all **14** natural hazards and the **1** technological hazard. Nearly all the potential Actions can be applied to multiple natural or other hazards based upon the generality of the Action's effect. Still, there could be no solutions or mitigation Actions developed for some of the more difficult to mitigate natural hazards. Many possible reasons are considered such as feasibility, prohibitive cost, jurisdiction, staff availability to develop and administer the project, lack of local support, unrealistic favorable outcome for the effort and more, all resulting in the point that for some natural hazards, potential Actions would not have worked for the Town.

Many Actions are general in nature and have the capacity to mitigate multiple types of natural hazards. From **4 HAZARD RISK ASSESSMENT**, those natural hazards rated a **LOW *Concern*** may not have been considered for an Action because their priority was not as important as other hazards. The **MEDIUM** and **HIGH *Concern*** hazards either have generalized or targeted Actions associated with them in the **Mitigation Action Plan** or the reason why no specific or feasible Action was developed for the highest ***Concerns*** is described in **Table 54**.

Table 54

Committee Assessment of Priority Natural Hazards with No Mitigation Actions

CONCERN	Natural Hazard	Committee Assessment
MEDIUM	Drought	See Actions.
LOW	Earthquake	Not a priority but see Actions.
HIGH	Extreme Temperatures	See Actions.
HIGH	High Wind Events	See Actions.
HIGH	Inland Flooding	See Actions.
LOW	Landslide	Not a priority.
HIGH	Lightning	See Actions.
HIGH	Public Health	See Actions.
HIGH	River Hazards	See Actions.
HIGH	Severe Winter Weather	See Actions.
LOW	Solar Storms and Space Weather	Not a priority but see Actions.
HIGH	Tropical and Post-Tropical Storms	See Actions.
HIGH	Wildfire	See Actions.
LOW	Avalanche	Not a priority but see Actions.
HIGH	Dam Breach, Release or Failure	See Actions.

Source: Henniker Hazard Mitigation Committee

9 ANNUAL IMPLEMENTATION AND EVALUATION

The Town received FEMA approval for the prior **Hazard Mitigation Plan** in **September 2014.** The completion of a planning document is merely the first step in its life as an evolving tool. The **Hazard Mitigation Plan Update** is a dynamic document that should be considered by all Town Departments, Boards, and Committees within their normal working environments. While evaluating the effectiveness of Actions in its everyday implementation, everyone should be able to contribute to the relevancy and usefulness of the Plan and to communicate with the Hazard Mitigation Committee where changes should be made. An annual effort will be undertaken to complete Actions and add new Actions as old tasks are completed and new situations arise. This Chapter will discuss the methods by which the Town of Henniker will review, monitor, and update its new **Henniker Hazard Mitigation Plan Update 2019**.

Annual Monitoring and Update of the Mitigation Action Plan

The Board of Selectmen should vote to establish a permanent Hazard Mitigation Committee within **3 months** of receiving the FEMA **Letter of Formal Approval** as indicated in **1 PLANNING PROCESS**. The purpose is to meet on a regular basis to ensure the **Hazard Mitigation Plan's** Actions are being actively worked on and the Plan is evaluated and revised to fit the changing priorities of the Town.

The Emergency Management Director or other Board of Selectmen designee should continue to serve as Chair of the Committee for Hazard Mitigation meetings, and should be officially appointed to such a capacity by the Board. Current Hazard Mitigation Committee members can be appointed to continue to participate as members of the permanent Committee. More information is provided in **APPENDIX B**.

Committee membership should include:

- ✓ Emergency Management Director
- ✓ Deputy Emergency Management Director
- ✓ Town Administration
- ✓ Fire Chief
- ✓ Rescue Chief
- ✓ Police Chief
- ✓ Road Agent
- ✓ Building Inspector/ Zoning Compl. Off.
- ✓ Welfare Officer/Health Officer
- ✓ Transfer Station/Recycling Ctr. Supvr.
- ✓ Town Planner
- ✓ Wastewater Treatment Supt.
- ✓ Cogswell Springs Water Works Supt. or Comm.
- ✓ 1 Azalea Park Committee member
- ✓ 1 Board of Selectmen member
- ✓ 1 Planning Board member
- ✓ 1 Conservation Commission member
- ✓ 1 Budget Advisory Committee member
- ✓ 1 Henniker Community School or School District Representative
- ✓ 1 Tucker Free Library member
- ✓ 1 Historical Society member
- ✓ Community Members at Large (Stakeholders)

Stakeholders who should be solicited to attend meetings and to participate equitably in the Plan development process include representatives from New England College, US Army Corps of Engineers, Pat's Peak, White Birch Center, Henniker Community School, the business community, Churches, neighborhoods, local State Representatives, Chamber of Commerce, agricultural/farming operations, trails groups, local non-profits including the Capital Area Public Health Network, area emergency management directors, local, State or Federal agency representatives (such as NH HSEM), and members of the public. This composition provides a wide spectrum of potential interests and opportunities for partnership to develop and accomplish Actions.

This Committee will **aim to meet up to 2-4 times per year** to follow these potential future meeting activities to update the **Mitigation Action Plan** and complete the Plan's annual evaluation as displayed in **Table 55**.

Table 55

Hazard Mitigation Committee Preliminary Annual Future Meeting Activities

Meeting or Activity Month	Preliminary HMC Interim Meeting Agenda Items and Activities
JANUARY **HMC Meeting** *Budget determined*	**Town operating budgets are determined for the next year.** HMC assists Board of Selectmen and Budget HMC with getting their mitigation projects funded and written into budgets. Action implementation continues. HMC provides a **Progress Report #2** for all Actions to responsible parties for response by beginning of February along with the **Action Status Tracking Sheet** to display Action progress and request updates. HMC continues update to the **Action Status Tracking Sheet** using the **Department Mitigation Action Progress Reports.**
February	HMC staff continues update to the **Mitigation Action Plan** using **Department Mitigation Action Progress Reports** and an updated **Action Status Tracking sheet.** HMC staff provides revised copies to Department Heads, keeps original Word and Excel files accessible on Town computer system.
APRIL **HMC Meeting** *$ available*	**Annual funding is received from Town Meeting.** HMC completes annual update of the **Mitigation Action Plan and the associated Plan Chapter and sections (CHAPTER 8)** with **Progress Reports #3**. HMC determines Action Plan items to pursue for this year, including $0 cost items.
April – June	**HMC staff & members present a plan for mitigation actions for the next year to the Board of Selectmen for their support to proceed. HMC members ensure Department Heads are provided with information to work on their Actions.** HMC members meets with Department Heads to inform about the Action priorities and requests attention to **Short Term (1-2 Years)** Actions. Departments begin working on Actions.
JUNE **HMC Meeting** *Infrastructure projects underway*	**Infrastructure projects will be underway.** HMC provides a **Progress Report #1** for all Actions to responsible Depts/Boards for response by beginning of July. HMC reviews **Annual Evaluation of the Plan (CHAPTER 9)**. HMC works with the CIP Committee to get certain projects placed into CIP. Depts to begin placement of next year's high-cost Action Plan items into the CIP.
August - December	HMC assists Department Heads with their budget requests to include **Action Plan** items, and to determine which Actions should have warrant articles. HMC staff continues assistance to Departments for **Action Plan** items. HMC staff begins to update the **Action Status Tracking Sheet.** HMC staff & members ensure Haz Mit Actions are added into the CIP.

Meeting or Activity Month	Preliminary HMC Interim Meeting Agenda Items and Activities
SEPTEMBER HMC Meeting	HMC will identify projects to accomplish (including $0) for the upcoming year. HMC attends Board of Selectmen budget meetings and suggests warrant articles for Action Plan items. HMC attends Budget Committee meetings scheduled through January to champion Action item funding.

Sources: Henniker Hazard Mitigation Committee

Annually and independent of the Town's budget cycle, a simpler listing of the Hazard Mitigation Committee's tasks should include:

- **Document New Hazard Events that Occurred in Town**
  - Hazard Identification and Risk Assessment (**CHAPTER 4** table)
  - Local and Area History of Disaster and Hazard Events (**CHAPTER 4** table)
- **Coordinate Completion of Annual Mitigation Actions by Assigning to Departments**
  - Appendix B Mitigation Action **Progress Report**
- **Seek and Help Departments Acquire Funding for Actions & Fill in Tracking File**
  - Appendix B Mitigation **Action/Project Status Tracking**
- **Evaluate Effectiveness of the Plan and Its Actions Yearly**
  - Appendix B Plan **Evaluation Worksheet**
- **Obtain Semi-Annual Progress Reports from Departments & Update Tracking File**
  - Appendix B Mitigation **Action/Project Status Tracking**
- **Update & Reprioritize Mitigation Action Plan and Update Supporting Plan Document Sections**
  - Mitigation Action Plan (**CHAPTER 8** table)
  - Enhanced STAPLEE Prioritization (**CHAPTER 8** table)
  - **Hazard Mitigation Plan Update 2019** sections as needed
  - Make note of the new information added/changed for the **2024 Plan** update!
  - Remember to invite the Stakeholders and public to all meetings and take minutes
- **Repeat**

For each of the Hazard Mitigation Committee meetings, the Emergency Management Director (or Staff Coordinator) will invite other Department members, Board and Committee members, Town Staff, Henniker School District representatives, stakeholders and other participants of the **2019 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 Henniker, and will be posted on the Town of Henniker website at www.henniker.org.

The **Hazard Mitigation Plan's Mitigation Action Plan** will be updated and evaluated annually generally following the suggestions outlined within the Chapter. All publicity information, Agendas, and Attendance Sheets, should be retained and compiled for inclusion into **APPENDIX C**.

The Emergency Management Director and Department heads will work with the Board of Selectmen to discuss the funding of Action projects as part of the budget process cycle in the fall of each year. The projects identified will be placed into the following fiscal year's budget request if needed, including the Capital Improvements Program (CIP), Town Operating Budgets, and other funding methods.

The Federal Emergency Management Agency (FEMA) encourages communities to upload their Hazard Mitigation Plan Actions into an online database. The **Mitigation Action Tracker** follows municipal Actions through their completion. This added attention to the Town's Actions could enable additional support for grant opportunities when it is shown the Town can complete its mitigation projects. The Town would need to set up an account to enter their Actions into the **FEMA Mitigation Action Tracker** at https://mat.msc.fema.gov.

Implementing the Plan through Existing Programs

In addition to work by the Hazard Mitigation Committee and Town Departments, several other mechanisms exist which will ensure that the **Henniker Hazard Mitigation Plan Update 2019** 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 2014 PLAN

As a successful, growing community, the Town of Henniker has a comprehensive network of plans, processes, champions, regulations, and budgets to ensure its local objectives, projects and budgets are fulfilled. The **Henniker Hazard Mitigation Plan 2014** is a tool for community betterment which works most effectively when partnering with existing planning mechanisms. Since the original **2008 Plan**, the overall integration and importance of the **Henniker Hazard Mitigation Plan** into existing Town planning mechanisms continues to grow.

Although the **2014 Plan** was not adopted as part of the Planning Board's **2015 Master Plan** update, the opportunity exists now for incorporation of the **2019 Plan**. The **Capital Improvements Program 2015** has not been recently updated, but its projects influence new funding for Departments, including the Highway Department funding that upgraded culverts in the **Mitigation Action Plan**. The **Zoning Ordinance** was revised annually since **2014,** included natural preserve areas in **2019** which encouraged natural systems protection. The **Subdivision and Site Plan Review Regulations** were updated in **2019**, which indirectly support hazard mitigation planning principles (such as fire and emergency access, driveway standards, drainage, landscaping, erosion, etc.) instead of having voted in specific changes as a result of the **2014 Plan**. Annual budgets for Emergency Management have been very small (**$1,200**) and were not able to consider the **2014 Hazard Mitigation Plan** findings. Yet the overall Town operating budget included limited funding for selected hazard mitigation projects, culvert upgrades, and public outreach within Department budgets. The Town budgets supported hazard mitigation planning where feasible or supported by voters, such as Capital Reserve Funds for Azalea Park mitigation, Bridge Repair, Highway, and infrastructure improvements. Drainage upgrades and Western Avenue reconstruction are a priority of the Highway Department and are important mitigation projects in Henniker.

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 **2019 Plan** to be utilized.

MASTER PLAN

The latest **Henniker Master Plan** was adopted in **2001**, developed by the Planning Board with assistance from the CNHRPC. The Master Plan is intended to being a new update in **2020**, with the goal of rotating Chapter review and revision annually. Chapters from the ***2015 Master Plan*** to update include Vision for Henniker, Community Survey, Population and Economics, Housing, Historic and Cultural Resources, Transportation, Community Facilities, Conservation, Preservation and Open Space, and Existing and Future Land Use. New future chapters to consider, in addition to the updated chapters, could include Implementation, Economic Development, Energy, and Regional Concerns.

To support mitigation efforts, the Planning Board should consider adopting the **Hazard Mitigation Plan 2019** as a separate Chapter to its Master Plan in accordance with **RSA 674:2.II(e)**. The **Hazard Mitigation Plan** should be presented to the Planning Board after FEMA's **Formal Approval**. The Plan can be considered for adoption after a duly noticed public hearing, just as any typical Chapter of a Master Plan. In addition, Actions and concerns from the Plan can be integrated into the new Master Plan.

Process to Incorporate Actions

The Hazard Mitigation Committee will present the approved **Hazard Mitigation Plan** to the Planning Board within **6** months after FEMA's **Letter of Formal Approval** is received for consideration and adoption into the Master Plan after a duly noticed public hearing. This is the same process used to adopt other components of the Master Plan. The NH State law supporting the development of a natural hazard mitigation plan as a component of a community Master Plan is **RSA 674:2-III(e).** The Hazard Mitigation Committee will oversee the process to begin working with the Planning Board to ensure that the relevant **Hazard Mitigation Plan** Actions are incorporated into the Master Plan.

CAPITAL IMPROVEMENTS PROGRAM

Henniker's last adopted **Capital Improvements Program (CIP)** is an outdated **2015** plan. The goal is to ensure the CIP is reviewed and updated each year by the CIP Committee. The HMC would like to ensure Actions requiring capital improvements funding from the **Hazard Mitigation Plan Update** will be inserted into the Capital Improvements Program for funding during the CIP's next update with specific projects and equipment replacement identified as addressing needs cited in the Update. Depending on the Town's funding needs, Capital Reserve Funds for such items as road & bridge improvements should be identified where appropriate as addressing projects in the **Hazard Mitigation Plan Update**.

Process to Incorporate Actions

The Hazard Mitigation Committee (HMC) will oversee the process to begin working with the Planning Board's CIP Committee to incorporate the various Hazard Mitigation Plan projects into the updated CIP. As the CIP is amended, a representative from the Hazard Mitigation Committee should be appointed to

sit on the CIP Committee or the HMC should submit a CIP Project Application to ensure the mitigation projects are addressed as part of the CIP update process.

TOWN MEETING

In Henniker, 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 **2019 Plan Update** **and how the funding of specific capital projects simultaneously responds to these mitigation projects.**

Process to Incorporate Actions

The Hazard Mitigation Committee (HMC) members will work with the Town Administrator, Budget Advisory Committee and Board of Selectmen to develop a capital budget and warrant article language for appropriate Actions for **Town Meeting vote**. The HMC members may also request deposits to appropriate Capital Reserve Funds for some of the larger projects. A representative from the Hazard Mitigation Committee will provide a copy of the current **Mitigation Action Plan** to both the Budget Advisory Committee and Board of Selectmen annually and validate the need for funding at the annual Town Meeting to accomplish the projects. The representative will work with Town Administration to write warrant article language for approval Action items if needed or to get the items placed into Department Operating Budgets.

OPERATING AND CAPITAL BUDGETS

Many of the Actions will not require specific funding but are identified as requiring in-kind Staff labor to perform the work required to undertake the Actions. Town Departments and Staff have rigorous job functions that demand their undivided attention to the tasks required to run their respective Departments. Additions to the work load to accommodate the Actions can put a strain on their ability to serve the public during performance of their normal job duties. When possible, Henniker Departments and Staff will be able to prioritize their tasks to work on **Hazard Mitigation Plan Update 2019** Actions. The in-kind work performed comes out of the Operating Budget for that particular Department.

Process to Incorporate Actions

With obtaining assistance from the HMC, the Department or Board is given the responsibility to ensure their Actions are completed, either by working on the Actions allocated to him/her when their normal job duties permit or by delegating the Action to another person. The funding for the Actions comes out of the Department's operating budget as work is undertaken by the Staff person on an as-time-permits basis unless the Action is a component of the Town staff members' normal work duties. Staff or volunteers will attempt to follow the **Action Time frame** as a guideline for completion. A yearly review of the **Mitigation Action Plan** by the Hazard Mitigation Committee will re-prioritize the Actions, and the members can report on their progress, asking for assistance or more time as needed. **By connecting planned Town of Henniker improvement projects to specific projects and objectives of the Hazard Mitigation Plan Update 2019, the Departments can utilize their resources more effectively.**

Continued Public Involvement

On behalf of the Hazard Mitigation Committee, the Emergency Management Director and the Staff Coordinator, under direction of the Town Administration, will be responsible for ensuring that Town Departments and the public have adequate opportunity to participate in the planning process. Administrative staff may be utilized to assist with the public involvement process.

For each interim meeting in the annual update process, and for the **5**-year update process procedures that will be utilized for public involvement include:

- Provide personal invitations to Town volunteer Board and Committee Chairs, Budget Advisory Committee members, and Town Department heads;
- Provide personal invitations to abutting community emergency management directors of Bradford, Warner, Hopkinton, Weare, Deering, and Hillsborough;
- Provide personal invitations to the businesses, agencies, neighborhoods, non-profits, and other entities listed previously in **9 ANNUAL IMPLEMENTATION AND EVALUATION**;
- Post public meeting notice flyers and press releases on the Town's website at www.henniker.org, on the Town's online calendar on the same site, and place agendas and meeting materials on the new Hazard Mitigation Committee webpage at https://www.henniker.org/general/page/hazard-mitigation-committee-2019-update.
- Post meeting notices in the Henniker Town Hall, outside on the Town Bulletin Board, at the Post Office, and at local business(es);
- Submit media releases to the Concord Monitor (a paid, regional daily newspaper serving over **40** communities around the Concord area) and The Messenger (a paid, subscription regional weekly newspaper serving about **40** Central NH region and western NH communities) or the Villager (a free regional weekly paper serving around **12** Contoocook Valley communities).

In addition to previous suggestions for invitations to Hazard Mitigation Committee update meetings, review **APPENDIX A Critical and Community Facilities Vulnerability Assessment** Tables: Vulnerable Populations, Economic Assets and Recreational and Gathering Sites) for further stakeholder opportunities. The NH Homeland Security and Emergency Management Field Representative for Henniker 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 Henniker should be considered for direct invitation for MITIGATION, which is a transparent process. EMERGENCY OPERATIONS planning should have a more selective working group.

The new section of the Town website dedicated to Hazard Mitigation Committee activities and the **2019 Plan** should be kept updated with meeting notices and materials used by the Hazard Mitigation

Committee. This online location would be an optimal place to post the final **2019 Plan** and its ***Maps*** and ***Appendices*** and to continue adding materials for annual Plan updates. Additional pages should be added for resources, information, and links to other websites for the public. A number of Action Plan items which will be undertaken relate to public education and involvement and the Town website would be an exemplary method of getting the word out.

Implementation and Evaluation of the Plan

During the Committee's annual review of the **Mitigation Action Plan,** the Actions are evaluated as to whether they have been **Completed, Deleted**, or **Deferred.** Those Action types are placed into their respective Tables. Any **New** Actions will be added as necessary. Each of the Actions within the updated **Mitigation Action Plan** will undergo the enhanced STAPLEE ranking as discussed in **8 MITIGATION ACTION PLAN.**

A set of comprehensive **Annual Interim Plan Evaluation and Implementation Worksheets** is available to assist the community with Plan implementation in **APPENDIX B**. These worksheets are to be used during the Hazard Mitigation Committee basic meeting schedule outlined previously in **Table 55**.

The worksheets include administrative and organizational documents, those that are used with the Appendices spreadsheets developed, and two Agendas to get started with HMC Interim Update meetings:

COMMITTEE ORGANIZATION AND PUBLICITY DOCUMENTS

- Board of Selectmen's Organization of Permanent Hazard Mitigation Committee
- Appointed Committee Information and Stakeholder Invitation Contact Information
- Meeting Publicity (Press Releases and Public Notice Meeting Posters) and Tracking Sheet

MEETINGS & WORKING WITH THE ACTIONS

- Example Agenda for Interim Meeting 1 (for minimal Plan update)
- Example Agenda for Interim Meeting 2 (for minimal Plan update)
- Interim Meeting Attendance Sheet
- Mitigation Action Status Tracking Sheet
- Mitigation Action Progress Report for Departments
- Annual Hazard Mitigation Plan Evaluation Worksheet

The **5-year** full Plan update will evaluate the Actions in the same manner in addition to fulfilling a complete update of the **Hazard Mitigation Plan** to then-current guidelines and standards.

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10 APPENDICES

The following **APPENDICES A-F** are included under a separate electronic or paper document to maintain the relative brevity of this **Hazard Mitigation Plan Update**.

Listing of Henniker Hazard Mitigation Plan Update 2019 Appendices

Some of these documents should be updated annually as part of the interim Action implementation and Plan evaluation process*. The remaining **APPENDICES** could be amended as a result of the new or revised annual information, but they are optional. It is necessary to establish a Town digital storage location for placing any new or updated hazard, Action, meeting or Plan data over the **5-year** interim until the Plan is ready to be fully updated again. Systematic organization will facilitate annual updates and prepare for next **5-year** Plan development in **2024**.

- **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 with Historic Fire Data ***
- **F Henniker Roads Data**

Documents should be updated annually *. It is also highly recommended to update **4 HAZARD RISK ASSESSMENT Table 12 Local and Area Hazard Event and Disaster History** to maintain a record of the disasters, hazards, and impacts to Henniker.

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11 MAPS

Four (**4**) detailed Maps were created during the development of the **Henniker Hazard Mitigation Plan 2019**. 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 2019 Maps

Map 1 Potential Hazards illustrates potential hazard event locations in Henniker that have the possibility of damaging the community in the future. The ***Map 1*** legend includes (technology) infrastructure hazards such as dams, bridges, electric transmission lines and evacuation routes. Natural hazards are displayed such as Special Flood Hazard Areas (SFHAs), locations of potential flooding/ washout, fire/wildfire, bridge washout, ice and snow, steep slopes (**>20%**) and more.

Map 2 Past Hazards illustrates the locations of where hazard events have occurred in Henniker in the past, including areas of SFHA, flooding/washout, snowmelt, dam breach, fire/wildfire, wind damage, ice damage, vehicle crash locations, and more.

Map 3 Critical and Community Facilities includes the infrastructure included in ***Map 1 Potential Hazards*** on a background of aerial photography and the SFHAs to give viewers a better, real world perspective. The locations of all critical facilities and community facilities as recorded in the **APPENDIX A Critical and Community Facilities Vulnerability Assessment** are displayed on the Map. Each of these sites is numbered on a key listing the names of each facility.

Map 4 Potential Hazards and Losses utilizes all the features of ***Map 3*** on an aerial photography background and includes the ***Map 1 Potential Hazards*** and any realistic ***Map 2 Past Hazards*** locations where hazard events can occur again in Henniker.

- **Map 1 - Potential Hazards**
- **Map 2 - Past Hazards**
- **Map 3 - Critical and Community Facilities**
- **Map 4 - Potential Hazards and Losses**