

**Chapter 3
HAZARD IDENTIFICATION**

Winter Weather

Definition

Heavy Snow 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. **Ice Storms:** An ice storm involves rain that freezes upon impact. Ice coating at least one-fourth inch in thickness is heavy enough to damage trees, overhead wires and similar objects.

Blizzard: A blizzard is a violent snowstorm with winds blowing at a minimum speed of 35 miles (56 kilometers) per hour and visibility of less than one-quarter mile (400 meters) for three hours.

Nor'Easter: A Nor'easter is a large weather system traveling from south to north, passing along the coast. As the storm's intensity increases, the resulting counterclockwise winds that impact the coast and inland areas in a Northeasterly direction. Winds from a Nor'easter can meet or exceed hurricane force winds

Location

There is a town-wide vulnerability to severe winter weather. Nor'easters (wind), Ice Storms, Heavy Snow Accumulations and Severe Cold can occur at any place within the Town and generally affect the entire Town when it happens. The higher elevations are more likely to experience snow or ice before the lower terrain.

Impact

Heavy snow accumulations (generally considered one that deposits four or more inches of snow in a 12-hour period) especially those associated with nor'easters can have a significant affect on the Town, including extended power outages, road closures, collapsed roofs and increased snow removal costs. During ice storms, ice forms on cold surfaces, such as trees and power lines, and may continue to form until the ice is quite deep, as much as several inches thick. Ice damage results in power outages, road closures and forest damage. Ice on the roads can be the most difficult for a rapid emergency response. Private roads are difficult for emergency response vehicles due to the restricted access to roads during winter.

Extent

NOAA's National Climatic Data Center produced the Regional Snowfall Index (RSI) for significant snowstorms that impact the eastern two thirds of the U.S. The RSI ranks snowstorm impacts on a scale from 1 to 5, similar to the Fujita scale for tornadoes or the Saffir-Simpson scale for hurricanes.

CATEGORY	RSI VALUE	DESCRIPTION
1	1-3	Notable
2	3-6	Significant
3	6-10	Major
4	10-18	Crippling
5	18.0+	Extreme

In addition, the National Weather Service developed and utilizes the Sperry-Piltz Ice Accumulation Index (SPIA) to forecast the impact of an ice storm. The index ranges from an ice storm rated as "0" which has little impact, to a index rating of 5 that has catastrophic damage to exposed utility systems.

Previous Occurrence

January of 1923 4 storms within a week left over 30 inches of snow.

February 8-10, 1969 Event Accumulations up to 27" in southeastern New Hampshire and up to 42" in northeastern New Hampshire.

February 22-28, 1969 Events Accumulations to 98" in Western Central New Hampshire, 34" in coastal

areas and 2 to 3' across New Hampshire generally. The storm produced excessive amounts of snow across New England.

January 20, 1978 20 inch snowstorm leaving 20' high snowdrifts.

February 5-7, 1978 Region-wide Blizzard affecting southern New England. Events accumulations to 28" in northeast New Hampshire, 25" in west central New Hampshire and 33" along coastal New Hampshire. Hurricane-force winds and record-breaking snowfall made this storm one of the more intense to occur this century across parts of the northeastern United States.

January 7-9, 1998 A severe Ice Storm hit sections of New Hampshire from January 7 through January 9 1998. The hardest hit areas in northern and central New Hampshire were generally between about 1000 and 2000 ft above sea level.

March 2001 Snow Emergency: A presidential declaration covered 7 counties with record and near-record snowfall from the late winter storm that occurred March 5-7.

January 2004 Snow Emergency: A presidential declaration covered 8 counties with record and near-record snowfall from a December 2003 snow storm.

February 10-11, 2005 Snow Storm An intensifying area of low pressure slowed significantly as it moved into the Gulf of Maine on the 10th of February resulting in a widespread heavy snowfall across much of New Hampshire from the early morning hours of the 10th into the afternoon of the 11th. Accumulations of 2 to 33 inches were reported across the state with the highest totals occurring in central and northern portions of the state.

December 11, 2008 Ice Storm New England was blanketed with ice and snow during the December 11 - 12, 2008 winter storm. The weight of the ice caused branches to snap and brought down power lines and poles across the region. About 400 thousand utility customers lost power during the event. Property damage was estimated at over \$5 million. Jaffrey's shelter was opened for 9 days. Many roads were closed and areas of town were inaccessible due to debris. Route 137 large extent of damage and damage to Mountain Road. Property damage. Power was out for up to 2 weeks.

October 30, 2011 The storm brought a heavy, wet snow to southern and central New Hampshire. Snow began to fall across southern New Hampshire late Saturday afternoon, became heavy during the night, and ended before 7 am Sunday morning. The combination of the heavy wet snow and leaves still on the trees caused numerous trees and branches to snap and fall, causing widespread power outages. About 315,000 customers lost power during the storm, mostly across the southeastern part of the state. Some customers were without electrical service for almost a week. The Silver Ranch Airport in Jaffrey reported 31 inches. This was an unusual event for Jaffrey, being so early in the season, but it was handled easily and without significant impact.

February 2013 Snow Storm An historic winter storm deposited tremendous amounts of snow over all of southern New England, mainly from the mid-afternoon on Friday, February 8 and lasting into the daylight hours of Saturday, February 9. What made this an amazing storm was the widespread coverage of heavy snowfall. Most locations received 2 to 2.5 feet of snow. Cheshire County received 14 to 24 inches of snow. Snowfall gained intensity during the afternoon, but during the night, 2 to 3 inch per hour amounts were common throughout the region. The band of heaviest snowfall, with 3 to 5 inches per hour for several hours, extended from southwest NH to central and western CT.

Probability
<i>Remote/Occasional/Probable/Frequent (in 25 years)</i>
Frequent

Severe Wind

Definition													
<p>A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. These events are spawned by thunderstorms and occasionally by hurricanes. They may also occur singularly or in multiples. 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 fall into two categories: Microburst which covers an area less than 2.5 miles in diameter; and Macroburst which covers an area at least 2.5 miles in diameter</p>													
Location													
<p>Severe wind events (downburst, tornadoes or high winds associated with thunderstorms) can occur anywhere in Jaffrey. Generally the higher elevations are more susceptible as well as more vulnerable due to the fact that they are home to many communication towers, including emergency response/mutual aid towers. Due to the sporadic nature of Tornadoes, they could occur anywhere in the Town of Jaffrey.</p>													
Impact													
<p>Depending on the size and location of these events, the destruction to property may be devastating. Several of the more significant and recent events within southern New Hampshire have caused several millions of dollars in damage and at least 5 fatalities. The strongest tornado to hit anywhere in NH is an F-2 Tornado.</p>													
Extent													
<p>According to the Fujita scale, which rates tornado intensity, an F-2 tornado maintains wind speeds from 113-157 mph. and can cause considerable damage. Roofs could be torn off frame houses; mobile homes demolished; large trees snapped or uprooted; and light object missiles would be generated as a result of an F-2 Tornado.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td style="background-color: #e0e0e0;">EF 0</td><td>65-85 mph</td></tr> <tr><td style="background-color: #e0e0e0;">EF 1</td><td>86-110 mph</td></tr> <tr><td style="background-color: #ffff00;">EF 2</td><td>111-135 mph</td></tr> <tr><td style="background-color: #ffa500;">EF 3</td><td>136-165 mph</td></tr> <tr><td style="background-color: #ff4500;">EF 4</td><td>166-200 mph</td></tr> <tr><td style="background-color: #ff0000;">EF 5</td><td>Over 200 mph</td></tr> </tbody> </table>	EF 0	65-85 mph	EF 1	86-110 mph	EF 2	111-135 mph	EF 3	136-165 mph	EF 4	166-200 mph	EF 5	Over 200 mph
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Previous Occurrence													
<p>May 18, 2000 A severe thunderstorm downed trees and wires in Hinsdale and Winchester. The storm also downed trees in Rindge and along Route 124 in Jaffrey.</p> <p>July 23, 2002 A line of severe thunderstorms moved across southern New Hampshire. Trees and wires were downed in Keene and Harrisville, in Cheshire County. The same storms downed large branches as they reached Peterborough, in Hillsborough County, but the damage was more significant as the storms moved farther east. In all, about 7,500 customers were left without power because of the storms.</p> <p>June 29, 2005 Strong to severe thunderstorms affected portions of southern New Hampshire during the afternoon of 29 June 2005. These storms produced damaging winds, and lightning as they moved across the region.</p> <p>July 15, 2007 Trees down on Route 124. A strong cold front was accompanied by strong winds aloft on the afternoon of the 15th. Thunderstorms developed along and ahead of this front and quickly became severe across portions of Southern New England. The main culprit was wind damage, aided by the strong mid-level winds that were transported to the surface.</p> <p>November 28, 2009 A coastal storm brought high winds and rain to much of Southern New England. These winds resulted in tree damage across much of southern New Hampshire. The Automated Surface Observing System at Jaffrey Municipal-Silver Ranch Airport (KAFN) recorded wind gusts of 51 mph. In addition, trees and wires were downed on several roads throughout Cheshire County, including the communities of Richmond, Chesterfield, and Jaffrey.</p>													
Probability													
<p><i>Remote/Occasional/Probable/Frequent (in 25 years)</i></p>													
Frequent													

Lightning

Definition

By definition, all thunderstorms contain lightning. Lightning is a giant spark of electricity that occurs within the atmosphere, or between the atmosphere and the ground. As lightning passes through the air, it heats the air to a temperature of 50,000 F, considerably hotter than the surface of the Sun.

Location

The entire Town is at moderate risk to lightning hazard. The higher elevation areas have an increased probability, such as the areas with cell towers, however lightning strikes can occur anywhere in the Town.

Impact

Residents and visitors to the NH area are more vulnerable to being struck by lightning because of the activities with which they are involved, particularly on those warm summer days when lightning is most likely to occur. Often, many people are outside enjoying the variety of recreational activities that attract people to New England during the summer when the vulnerability to lightning strike is highest. More likely to be affected are structures and utilities, often resulting in structure fires and power outages.

Extent

The National Oceanographic Atmospheric Administration (NOAA) defines the extent of lightning activity with a LAL scale as shown in the table below.

LAL 1	No Thunderstorms
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent. 1 to 5 cloud ground strikes in a 5 minute period.
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.
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud to ground strikes in a 5 minute period.
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.
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.

Previous Occurrence

August 16, 2003 Twelve people were injured when lightning struck Jaffrey's annual Festival of Fireworks at Silver Ranch Airport. Lightning also set off some of the fireworks, but the fireworks did not cause any of the injuries.

September 12, 2013 Lightning struck the town office/police building causing \$20,000 in damage. This same storm produced a lightning strike at Conant High School damaging the fire alarm causing \$4,000 in damage.

Probability

Remote/Occasional/Probable/Frequent (in 25 years)

Frequent

Wildfire

Definition																											
Any free burning uncontrollable wild land fire not prescribed for the area which consumes the natural fuels and spreads in response to its environment.																											
Location																											
Most of the Town and the surrounding communities of Jaffrey are heavily forested and are therefore vulnerable to this hazard, particularly during periods of drought. The town has a hydrant system for the downtown and surrounding area. A majority of town relies on dry hydrants, cisterns or tankers for fire suppression.																											
Impact																											
Fires in New Hampshire are predominantly human-caused, and roughly half of the total fire activity is in the most populous three southern counties. The proximity of many populated areas to the forested lands exposes these areas and their populations to the potential impact of wildfire. In addition, the potential for wildfires increases during a prolonged drought.																											
Extent																											
The National Wildfire Coordinating Group (NWCG) classifies a wildfire into one of several ranges of fire, based upon the number of acres burned. The following list provides NWCG's scale for wildfire values:																											
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Previous Occurrence																											
1952 Wildfire - widespread fire on Mount Monadnock concentrated along the White Dot trail.																											
Probability																											
<i>Remote/Occasional/Probable/Frequent (in 25 years)</i>																											
Occasional																											

Flooding

Definition
<p>Flooding is the temporary overflow of water onto land that is not normally covered by water. Flooding results from the overflow of major rivers and tributaries, storm surges, and/or inadequate local drainage. Flooding events considered in this Plan include 100-year and 500-year floodplain events, rapid snow pack melt and ice jams.</p>
Location
<p>Flooding in Jaffrey will occur in the 100 year floodplain as designated on the FEMA Flood Insurance Rate Map. These areas primarily include the Contoocook River.</p>
Impact
<p>The damage caused by any flood depends on the depth and duration of flooding, the topography of the area flooded, velocity of flow, rate of rise, and the amount and form of development in the floodplain. Primarily flooding impacts the roads and culvert infrastructure more than residential and non-residential buildings in Jaffrey. The risk and impact due to flooding is moderate. Culverts and roads are regularly washed out and either need to be repaired or upgraded. There are 11 properties that maintain National Flood Insurance Program policies.</p>
Extent
<p>FEMA defines flood hazards by the 100-year and 500-year flood events. A 100-year flood event is defined as a flood event having a 1% chance of being equaled or exceeded in any given year. The 500-year flood event is defined as a flood event having a .2% chance of being equaled or exceeded in any given year. The Town of Jaffrey Flood Insurance Rate Maps (FIRM) identify both A and AE zones. A zones are subject to the 100-year flood, however because there has been no detailed hydraulic studies, there is no Base Flood Elevation (BFE) determined for these zones. The AE zones are subject to the 100 year flood and have BFEs delineated on the FIRM.</p>
Previous Occurrence
<p>October 23, 1785 Greatest discharge at Merrimack and at Lowell, Mass. Through 1902 March 24-30, 1826 and at Lowell, Mass. Through 1902 and at Lowell, Mass. Through 1902 April 21-24, 1852 Merrimack River at Concord; highest stream stage for 70 years. Merrimack River at Nashua,; 2 feet lower than 1785 April 19-22, 1862 Highest stream stages to date on the Connecticut River; due solely to snowmelt March 11-21, 1936 Double flood; first due to rains and snowmelt; second, due to large rainfall September 21, 1938 Hurricane. Stream stages similar to those of March 1936 and exceeded 1936 stages in Upper Contoocook River August 1955 Heavy rains caused extensive damage throughout the basin area August, 1986 Severe summer storms with heavy rains, tornadoes; flash flood and severe winds. FEMA DR-771-NH August 7-11, 1990 A series of storm events from August 7-11, 1990 with moderate to heavy rains during this period produced widespread flooding. FEMA DR-876-NH August 19, 1991 Hurricane Bob struck New Hampshire causing extensive damage in Rockingham and Stafford counties, but the effects were felt statewide. FEMA DR-917-NH October 1996 Counties Declared: Carroll, Cheshire, Coos, Grafton, Merrimack, and Sullivan. FEMA DR-1077-NH September 18 - 19, 1999 FEMA DR-1305-NH: Heavy rains associated with Tropical Storm/Hurricane Floyd. Counties Designated: Belknap, Cheshire and Grafton. July 21 – August 18, 2003 FEMA-1489-DR: Severe Storms and Flooding occurred in Cheshire and Sullivan counties. Public Assistance provided for repair of disaster damaged facilities 2004 Lost culvert in 2004 on Town Farm Road – a drainage area. It is now fixed. October 2005 Floods Contoocook River flooded in Peterborough. Not much at all in Jaffrey. No dam issues. Heath Road at Meede Brook. Culvert back-up and road was impassible. Grant to add a spillway, project complete.</p>

April 16, 2007 Severe storms and flooding Jaffrey suffered no losses and did not require FEMA reimbursement. An unusually strong and slow moving coastal storm for mid April tracked to western Long Island Sound, before weakening slowly and drifting offshore. This storm brought a variety of impacts to southwest New Hampshire, including heavy snow to the higher elevations and widespread river and stream flooding. Snowfall totals as high as 4 to 8 inches were observed in the higher elevations of Cheshire County. There were numerous reports of downed trees and power lines in these areas from the weight of the heavy, wet snow. Rainfall totals of 3 to 5 inches, combined with wet antecedent conditions, resulted in widespread river and stream flooding, as well as significant flooding of urban areas.

March 7, 2011: An area of low pressure lifting through the eastern Mid-Atlantic and deepening through southeast New England into the Gulf of Maine resulted in an area of heavy rains with amounts ranging 2 to 5 inches across coastal and interior New England on top of melting snows. This large amount of water into various basins resulted in flooding of tributaries and major rivers, inundating local neighborhoods and roadways. The Ashuelot River at Keene went into minor flood for nearly 24 hours.

Probability

Remote/Occasional/Probable/Frequent (in 25 years)

Occasional

Extreme Heat

Definition

A Heat Wave is a “Prolonged period of excessive heat, often combined with excessive humidity.” Heat kills by pushing the human body beyond its limits. In extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature.

Location

Extreme heat events are difficult to define geographically. Due to their widespread nature a period of extreme heat would affect the entire Town.

Impact

Extreme heat conditions may impact the health of residents and visitors. Facilities without generators and air-conditioners that house the elderly and disabled are very susceptible to human health issues. Roads, bridges, railroads etc. may be damaged due to extreme heat. Utilities are also vulnerable as the demand for air-condition rises. Prolonged high temperature has also been associated with civil unrest

Extent

According to OSHA, The risk of heat-related illness becomes greater as the weather gets hotter and more humid. This situation is particularly serious when hot weather arrives suddenly early in the season, before workers have had a chance to adapt to warm weather. This table provides guidelines for the risk related to extreme heat.

Heat Index	Risk Level	Protective Measures
Less than 91°F	Lower (Caution)	Basic heat safety and planning
91° to 103°F	Moderate	Implement precautions and heighten awareness
103° to 115°F	High	Additional precautions to protect workers
Greater than 115°F	Very High to Extreme	Triggers even more aggressive protective measures

Previous Occurrence

Nothing substantial acknowledged by the committee.

Probability

Remote/Occasional/Probable/Frequent (in 25 years)

Occasional

Hurricane

Definition																					
<p>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. The eye of the storm is usually 20-30 miles wide and the storm may extend over 400 miles. High winds are a primary cause of hurricane-inflicted loss of life and property damage. The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous, however, and require preventative measures.</p>																					
Location																					
<p>When hurricane events occur in Jaffrey they affect the entire Town. The heavy rainfall associated with hurricanes will impact the 100-year floodplain and high winds can have an impact on the whole Town.</p>																					
Impact																					
<p>New Hampshire's exposure to direct and indirect impacts from hurricanes is real, but modest, as compared to other states in the region. That being said, the probability of hurricanes occurring in Jaffrey is possible. The largest impact is on the floodplain areas due to heavy rains. High winds cause trees to fall down thereby causing power outages, structural damage to buildings, road closures and debris management issues.</p>																					
Extent																					
<p>Wind speeds within hurricanes may reach 250 miles per hour in a Category 5 hurricane, as measured on the Saffir-Simpson Hurricane Scale. Tropical depressions are considered to be of hurricane force when winds reach 74 miles per hour. Damage resulting from winds of this force can be substantial, especially considering the duration of the event, which may last for many hours.</p>	<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #e0e0e0;"> <th style="padding: 5px;">Category</th> <th style="padding: 5px;">Wind Speed (mph)</th> <th style="padding: 5px;">Damage at Landfall</th> </tr> </thead> <tbody> <tr style="background-color: #90ee90;"> <td style="text-align: center; padding: 5px;">1</td> <td style="text-align: center; padding: 5px;">74-95</td> <td style="text-align: center; padding: 5px;">Minimal</td> </tr> <tr style="background-color: #ffff00;"> <td style="text-align: center; padding: 5px;">2</td> <td style="text-align: center; padding: 5px;">96-110</td> <td style="text-align: center; padding: 5px;">Moderate</td> </tr> <tr style="background-color: #ffa500;"> <td style="text-align: center; padding: 5px;">3</td> <td style="text-align: center; padding: 5px;">111-130</td> <td style="text-align: center; padding: 5px;">Extensive</td> </tr> <tr style="background-color: #ff4500;"> <td style="text-align: center; padding: 5px;">4</td> <td style="text-align: center; padding: 5px;">131-155</td> <td style="text-align: center; padding: 5px;">Extreme</td> </tr> <tr style="background-color: #ff0000;"> <td style="text-align: center; padding: 5px;">5</td> <td style="text-align: center; padding: 5px;">> 155</td> <td style="text-align: center; padding: 5px;">Catastrophic</td> </tr> </tbody> </table>			Category	Wind Speed (mph)	Damage at Landfall	1	74-95	Minimal	2	96-110	Moderate	3	111-130	Extensive	4	131-155	Extreme	5	> 155	Catastrophic
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Previous Occurrence																					
<p>September 21, 1938 The Great New England Hurricane: Statewide there were 13 Deaths, 1,363 families received assistance. Disruption of electric and telephone services for weeks. 2 Billion feet of marketable lumber blown down. Flooding occurred throughout the State, in some cases equaling and surpassing the Flood of 1936. Total Direct Losses - \$12,337,643. In Jaffrey the downtown area was substantially flooded, damage occurred to buildings and properties, including many downed trees; and some roads were washed out.</p> <p>August 31, 1954 Hurricane Carol: Extensive amount of trees blown down and property damage. Large crop loss. Localized flooding.</p> <p>September 12, 1960 Hurricane Donna: Heavy flooding in Massachusetts and Southern NH.</p> <p>August 19, 1991 Hurricane Bob struck New Hampshire causing extensive damage in Rockingham and Stafford counties, but the effects were felt statewide</p> <p>September 16-18, 1999 Tropical Storm Floyd: This was originally a Hurricane that heavily impacted North Carolina and dumped heavy rains on New England resulting in a Presidential Declaration of Disaster in NH; FEMA DR-1305-NH in Belknap, Grafton and Cheshire Counties.</p> <p>August 28, 2011 Tropical Storm Irene travelled up the Connecticut River Valley to the northern border of New Hampshire. The storm brought a prolonged period of strong and gusty winds and heavy rain to the state. The town was prepared for the worst, but effects on the town were very minimal.</p> <p>October 26, 2012 Hurricane Sandy. There was not significant damage as a result of this Hurricane.</p>																					
Probability																					
<p><i>Remote/Occasional/Probable/Frequent (in 25 years)</i></p>																					
<p>Occasional</p>																					

Drought

Definition
<p>Drought is a deficiency in precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people.</p>
Location
<p>Droughts are difficult to define geographically. Due to their widespread nature a drought would affect the entire Town. However, a drought can affect fire suppression in those areas that do not have access to the public water system.</p>
Impact
<p>Droughts are not as damaging to the Town as floods or winter weather. However a severe drought can affect public water supply, increase the probability of fires, and impede fire suppression. Those areas with minimal fire protection are at a higher risk as a result of a prolonged drought, due to lack of fire suppression water sources.</p>
Extent
<div style="display: flex; justify-content: space-between;"> <div style="width: 65%;"> <p>The Palmer Drought Severity Index (PDSI) was devised in 1965, and was the first drought indicator to assess moisture status comprehensively. It uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered most effective for un-irrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief. It is more complex than the SPI and the Drought Monitor.</p> </div> <div style="width: 30%; font-size: 0.8em;"> <p>PDSI Legend</p> <ul style="list-style-type: none"> -4 or less (Extreme drought) -4 to -3 (Severe drought) -3 to -2 (Moderate drought) -2 to -1 (Mild drought) -1 to -0.5 (Incipient dry spell) -0.5 to 0.5 (Near normal) 0.5 to 1 (Incipient wet spell) 1 to 2 (Slightly wet) 2 to 3 (Moderately wet) 3 to 4 (Very wet) 4 or more (Extremely wet) </div> </div>
Previous Occurrence
<p>According to the NH Department of Environmental Services five droughts of significant extent and duration are evident in the 1900s: 1929-36, 1939-44, 1947-50, 1960-69 and 2001-2002. The 2001-02 drought was the 3rd worst on record, exceeded only by the droughts of 1965-1966 and 1941-1942. The Town of Jaffrey recommended water restriction and some private wells dried up. All of these droughts were statewide in extent and had recurrence intervals ranging from 10 to more than 25 years. In the statewide drought of 2001/02 private wells dried up.</p>
Probability
<p><i>Remote/Occasional/Probable/Frequent (in 25 years)</i></p>
<p>Occasional</p>

Earthquake

Definition		
<p>An earthquake is a rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. 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 magnitude and intensity of an earthquake is determined by the use of scales such as the Richter scale and Mercalli scale.</p>		
Location		
<p>According to the 2013 NH State Hazard Mitigation Plan, New Hampshire is considered to lie in an area of "Moderate" seismic activity with respect to other areas of the United States and is bordered to the North and Southwest by areas of "Major" activity.</p>		
Impact		
<p>Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and often cause landslides, flash floods, fires, and avalanches. It is assumed that all of the buildings in the Town have not been designed to withstand seismic activity. More specifically, the older historic buildings that are constructed of non-reinforced masonry are especially vulnerable to any moderate sized earthquake. In addition, utilities (water, gas, etc) are susceptible to earthquake damage. Jaffrey has experienced the effect of small to moderate earthquakes that had minor to no effect on the town's infrastructure.</p>		
Extent		
<p>Earthquakes with a magnitude of 2.0 to 4.9 on the Richter scale are considered minor to light, and those 5.0 to 6.9 are considered moderate to strong. However, if a large (6+ on the Richter Scale) occurred in or around the town, it is assumed that structural damage would be moderate to severe.</p>		
Richter Scale	Magnitude Earthquake Effects	
2.5 or less	Usually not felt, but can be recorded by seismograph.	
2.5 to 5.4	Often felt, but only causes minor damage.	
5.5 to 6.0	Slight damage to buildings and other structures.	
6.1 to 6.9	May cause a lot of damage in very populated areas.	
7.0 to 7.9	Major earthquake. Serious damage.	
8.0 or greater	Great earthquake. Can totally destroy communities near the epicenter.	
Previous Occurrence		
<p>The following table summarizes earthquakes of at least 4.0 on the Richter Scale, that have occurred in New Hampshire and New England:</p>		
<u>Location</u>	<u>Date</u>	<u>Magnitude</u>
Ossipee, NH	December 20, 1940	5.5
Ossipee, NH	December 24, 1940	5.5
Dover-Foxcroft, ME	December 28, 1947	4.5
Kingston, RI	June 10, 1951	4.6
Portland, ME	April 26, 1957	4.7
Middlebury, VT	April 10, 1962	4.2
Near NH Quebec Border, NH	June 15, 1973	4.8
West of Laconia, NH	Jan. 19, 1982	4.5
Ontario-Quebec Border	June 23, 2010	5.0
Boscawen, NH	September 26, 2010	3.1
Virginia	August 23, 2011	5.8
Concord, NH	September 18, 2012	1.2
Southern Maine	October 16, 2012	4.0
Probability		
<i>Remote/Occasional/Probable/Frequent (in 25 years)</i>		
Remote		

Dam Failure

Definition
According to the NH Department of Environmental Services (DES), a dam is any artificial barrier which impounds or diverts water which: has a height of 6 feet or more; or is located at the outlet of a great pond, regardless of height or storage; or is an artificial barrier which impounds liquid Industrial or liquid commercial wastes, or septage or sewage, regardless of height or storage.
Location
The Town of Jaffrey contains three Class “B” dams, eight Class “A” dams and many unclassified (“AA”) man-made dams and beaver dams which are reported to pose a threat to life and/or property.
Impact
The impact of a dam failure in the Town of Jaffrey would be moderate. The most likely impact to occur as a result of a dam failure would be structural damage that would render roads impassable.
Extent
DES classifies Every dam is categorized into one of four classifications, which are differentiated by the degree of potential damages that a failure of the dam is expected to cause. The classifications are designated as non menace, low hazard, significant hazard and high hazard. A Non-Menace structure as 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. A Low Hazard structure is classified as 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: 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; or a reversible environmental losses to environmentally-sensitive sites.
Previous Occurrence
There are no recorded dam failures in Jaffrey.
Probability
<i>Remote/Occasional/Probable/Frequent (in 25 years)</i>
Remote

Avalanche, Hail & Landslide

Description
Due to no history or risk of avalanche, landslide or hail within the Town of Jaffrey, the Committee chose not to recognize the risk of these hazards in this Plan.