

The Saratoga County planning team determined that seven natural hazards of concern are identified as significant hazards affecting the County. These hazards will be addressed within this plan:

- Drought
- Earthquake
- Extreme Temperatures
- Flooding (riverine, flash, ice jam, beaver dam and elevated groundwater flooding)
- Ground Failure (landslides)
- Invasive Species
- Severe Storm (windstorms, thunderstorms, hail, tornadoes and hurricanes/tropical storms)
- Severe Winter Storm (heavy snow, blizzards, ice storms, Nor'easters)
- Wildfire

Other natural hazards of concern have occurred within the County, but typically have a low potential to result in significant impacts. The County deemed other natural hazards as minor in comparison to those above; therefore, additional natural hazards will not be further addressed within this version of the Plan. However, if deemed necessary by the County, these hazards may be considered in future versions of the Plan.

5.3 Hazard Ranking

After the hazards of concern were identified for Saratoga County, the hazards were ranked to describe their probability of occurrence and their impact on population, property (general building stock including critical facilities) and the economy. Each participating Town, Village or City may have differing degrees of risk exposure and vulnerability compared to the County as a whole; therefore, each Town/Village or City ranked the degree of risk to each hazard as it pertains to their community using the same methodology as applied to the County-wide ranking. This assures consistency in the overall ranking of risk process. The hazard ranking for each participating Town, Village or City can be found in their jurisdictional annex in Volume II of this Plan.

5.3.1 Hazard Ranking Methodology

The methodology used to rank the hazards of concern for Saratoga County is described below. Estimates of risk for the County were developed using methodologies promoted by FEMA's hazard mitigation planning guidance and generated by FEMA's Hazus risk assessment tool.

5.3.2 Probability of Occurrences

The probability of occurrence is an estimate of how often a hazard event occurs. A review of historic events assists with this determination. Each hazard of concern is rated in accordance with the numerical ratings and definitions in Table 5-1.

Table 5-3 Probability of Occurrence Ranking Factors

Probability	Definition	Rating
Rare	Hazard event occurs less than once in 50 years	1
Infrequent	Hazard event occurs once in 8 to 50 years	2
Regular	Hazard event occurs once in 1 to 7 years	3
Frequent	Hazard event occurs annually	4

5.3.3 Impact

The impact of each hazard is considered against each of the three categories: impact on population, impact on property (general building stock including critical facilities), and impact on the economy. Based on documented historic losses and a subjective assessment by the MPC, an impact rating of high, medium, or low is assigned with a corresponding numeric value, for each hazard of concern. In addition, a weighting factor is assigned to each impact category: three (3) for population, two (2) for property, and one (1) for economy. This gives the impact on population the greatest weight in evaluating the impact of a hazard.

Table 5-4 presents the numerical rating, weighted factor and description for each impact category. The impact rating definitions for population and property are consistent with the NYS HMP ranking methodology with minor modifications. Impact to the economy is also being evaluated.

Table 5-4 Definitions of Impacts to Population, Property and Economy

Category	Weight Factor	Low Impact (1)	Medium Impact (2)	High Impact (3)
Population*	3	Serious injury/death unlikely, not large numbers	Serious injury/death likely, large numbers	Serious injury/death likely, extreme numbers
Property*	2	Little or no damage	Moderate damage	Severe Damage
Economy	1	Loss estimate is 9% or less of the total replacement cost for your community	Loss estimate is 10% to 19% of the total replacement cost for your community	Loss estimate is 20% or more of the total replacement cost for your community

*For the purposes of this exercise, "impacted" means exposed for population and property and loss for economy.

5.3.4 Risk Ranking Value

The risk ranking for each hazard is then calculated by multiplying the numerical value for probability of occurrence by the sum of the numerical values for impact. The equation is as follows: Impact Value (1, 2, or 3) X Impact Value (6 to 18) = Hazard Ranking Value. Based on the total for each hazard, a priority ranking is assigned to each hazard of concern (high, medium, or low).

5.3.5 Hazard Ranking Results

During the Risk Assessment and Capability Review meeting, Saratoga County and jurisdictions participated in a Hazard Ranking exercise. This exercise asked stakeholders to rate the probability of each hazard, as well as rate the impact on population, property, and economy. Population impact was weighted the highest, followed by property, and then economy. The final score was calculated by multiplying the probability by the total impact score. The following table shows the ranking results from Saratoga County.

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Table 5-5 Saratoga County Hazard Ranking

Hazard	Probability of Occurrence (1-4)	Impact Ranking	Risk Ranking Score	Hazard Ranking	Overall Ranking
Flood (riverine, flash, ice jam, beaver dam, and elevated groundwater flooding)	4	14	56	1	High
Severe Storm (windstorm, thunderstorms, hail, tornadoes, and hurricanes/tropical storms)	4	12	48	2	High
Extreme Temperatures	4	12	48	3	High
Ground Failure (Landslides)	3	13	39	4	Medium
Severe Winter Storm (heavy snow, blizzards, ice storms, Nor'easters)	4	9	36	5	Medium
Wildfire	1	8	26	6	Medium
Invasive Species	4	6	24	7	Medium
Earthquake	1	17	17	8	Low
Drought	2	8	16	9	Low

5.3.6 County Emergency Preparedness Assessment Ranking Results

The CEPA provided guidance for hazard identification and ranking for the 2019 Saratoga County Multi-Jurisdictional Hazard Mitigation Plan Update. Table 5-6 below shows the Saratoga County natural hazard rankings from CEPA. CEPA assessed the likelihood of the hazard to occur (on a scale from very low to very high) and the consequence of the hazard should it occur (on a scale from very low to very high). The final ranking was determined based on this scoring. More information about CEPA results can be obtained by contacting the Saratoga County OES.

Table 5-6 CEPA Natural Hazard Rankings

Hazard	Likelihood	Consequence	Relative High-Risk Score
Flooding	High	High	16
Ice Storms	High	High	16
Severe Wind/Tornado	High	High	16
Severe Winter Snowstorms	High	Medium	12
Extreme Temperatures	Medium	Medium	9
Earthquake	Low	High	8
Hurricanes/Tropical Storms	Low	High	8
Wildfire	Low	Medium	6
Drought	Low	Low	4
Landslides	Low	Low	4

5.4 Summary of Changes

- Added three new hazard profiles: Drought, Extreme Temperatures, and Wildfire
- Updated the hazard ranking criteria (align with the 2014 NYS HMP)
- Updated Hazus analysis (using 2010 Census data and general building stock based on 2014 RS Means)
- NOAA NCEI Storm Events Data updated through 2018
- Disaster declarations updated through 2018
- Updated exposure analysis completed using NYS Statewide Tax Parcel Centroid Points (August 2018)

5.5 Drought

This section describes the nature of Drought hazards in Saratoga County and assesses the vulnerability of people, property, and economy to this hazard.

5.5.1 Description

Drought is an extended period of time where there is an absence of water. The Glossary of Meteorology defines drought as “a period of abnormally dry weather sufficiently prolonged for the lack of water to cause serious hydrologic imbalance in the affected area,” (NWS, n.d.). This hazard