



5.2 Identification of Hazards of Concern

To provide a strong foundation for the mitigation actions presented in Sections 6 and 9 of this Hazard Mitigation Plan (HMP), Genesee County considered a full range of hazards that could impact the area, and then identified and ranked those hazards that presented the greatest concern. The hazard of concern identification process involved gathering input from the County and participating jurisdictions; reviewing the New York State Hazard Mitigation Plan (NYS HMP); researching and collecting local, state, and federal information on the frequency, magnitude, and costs associated with the various hazards that have previously, or could feasibly, impact the region; and assessing qualitative or anecdotal information regarding natural hazards and the perceived vulnerability of the region's assets. Table 5.2-1 documents the process of identifying the hazards of concern for further profiling and evaluation.

Hazards of Concern are those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.

For the purposes of this planning effort, the Planning Partnership chose to group some hazards together based on the similarity of hazard events, their typical concurrence, and their impacts. The Planning Partnership also considered hazard groupings determined in Federal Emergency Management Agency (FEMA) guidance documents (FEMA 386-2, "Understanding Your Risks, Identifying Hazards and Estimating Losses;" FEMA's "Multi-Hazard Identification and Risk Assessment – The Cornerstone of the National Mitigation Strategy;" and FEMA's Local Mitigation Planning Handbook), and the NYS HMP.

The Severe Storm hazard includes windstorms that often entail a variety of other influencing weather conditions, including hailstorms, windstorms, lightning, thunderstorms, tornadoes, and hurricanes.

The Flood hazard includes riverine flooding, flash flooding, ice jams, and dam failure flooding. Including the various forms of flooding under a general flood hazard is consistent with FEMA's "Multi-Hazard Identification and Risk Assessment" guidance.

The Severe Winter Storm hazard includes heavy snow (snowstorms), blizzards, sleet, freezing rain, and ice storms. This grouping is consistent with that used in the NYS HMP.

The Hazardous Materials hazard includes releases of hazardous materials from fixed facilities and in-transit vehicles, including automotive/truck, rail, waterway, and pipeline.

Table 5.2-1 presents the justification for determining the hazards of concern for Genesee County.



Table 5.2-1. Identification of Hazards of Concern for Genesee County

Hazard	Is this a hazard that may occur in Genesee County?	If yes, does this hazard pose a significant threat to the County?	Why was this determination made?	Source(s)
Avalanche	No	No	<ul style="list-style-type: none"> The topography and climate of Genesee County does not support the occurrence of an avalanche event. Avalanche was identified as a hazard in the NYS HMP; however, no avalanches have occurred in Genesee County to date. 	<ul style="list-style-type: none"> NYS DHSES Input from Planning Partnership
Civil Unrest	Yes	Yes	<ul style="list-style-type: none"> The Planning Partnership identified civil unrest as a hazard of concern for Genesee County. 	<ul style="list-style-type: none"> Input from Planning Partnership
Coastal Erosion	No	No	<ul style="list-style-type: none"> Genesee County has no coastline. 	
Coastal Storm (tropical and extra-tropical cyclones)	No	No	<ul style="list-style-type: none"> Genesee County has no coastline. 	
Dam Failure	Yes	No	<ul style="list-style-type: none"> The NID reported 1,968 dams in the State of New York, 15 of which are located in Genesee County. NYSDEC, however, has identified 84 dams in Genesee County. Of these, 50 are low hazard, 8 are intermediate hazard, 0 are high hazard, and 24 are negligible/no hazard. The effects of dam failure are included in the Flood profile. 	<ul style="list-style-type: none"> NID NYSDEC Input from Planning Partnership
Drought	Yes	Yes	<ul style="list-style-type: none"> The NYS HMP identifies drought as a hazard of concern for the State of New York. Genesee County has been impacted by many drought events that have occurred in New York State. Agriculture is a substantial industry in Genesee County. Drought conditions would severely impact the County's economy. 	<ul style="list-style-type: none"> NYS DHSES Input from Planning Partnership U.S. Department of Agriculture Drought Monitor
Earthquake	Yes	Yes	<ul style="list-style-type: none"> The NYS HMP identified earthquakes as a hazard of concern for the State. USGS indicates that the 2014 PGA with a 10 percent probability of exceedance in 50 years for Genesee County is between 0.01g and 0.03g. According to the NYS HMP, between 1973 and 2012, the epicenters of 189 earthquakes have been in the State. Of those 189 events, none were reported in Genesee County. Two notable earthquakes were felt in the State: one in the western part of the State on June 23, 2010, and another in northern New York on May 17, 2013. 	<ul style="list-style-type: none"> NYS DHSES Input from Planning Partnership NOAA – Review of NGDC Earthquake Database from 1800 to present USGS
Epidemic	Yes	Yes	<ul style="list-style-type: none"> The Planning Partnership identified epidemic as a hazard of concern for Genesee County. 	<ul style="list-style-type: none"> Input from Planning Partnership NYSDOH



Hazard	Is this a hazard that may occur in Genesee County?	If yes, does this hazard pose a significant threat to the County?	Why was this determination made?	Source(s)
Expansive Soils	No	No	<ul style="list-style-type: none"> USGS indicated that Genesee County does not have the type of soils (swelling clay) that would result in expansive or swelling soils; therefore, Genesee County has little to no swelling potential. Expansive soils are not identified as a hazard in the NYS HMP. 	<ul style="list-style-type: none"> NYS DHSES Input from Planning Partnership Review of USGS 1989 Swelling Clays Map of the Conterminous United States
Extreme Temperature	Yes	Yes	<ul style="list-style-type: none"> The NYS HMP identified extreme temperatures as a hazard of concern for New York State. Extreme temperature includes both hot and cold weather events that can have a significant impact on human health and commercial/agricultural businesses, and primary and secondary effects on infrastructure (such as burst pipes and power failure). 	<ul style="list-style-type: none"> NYS DHSES Input from Planning Partnership NOAA NCEI MRCC USDA
Flood (riverine, flash, and ice jams)	Yes	Yes	<ul style="list-style-type: none"> Genesee County has experienced multiple flood events; however, all of these have been riverine, flash, ice jam, or stormwater (no coastal flood events). Since 1954, Genesee County was included in multiple Presidential Disaster Declarations for flood events; one of these has occurred since 2008. According to the National Flood Insurance Program statistics, over 170 flood-related claims have been made between 1978 and 2018 in Genesee County, with over \$1.4 million in flood-related losses paid to the towns and villages of the County. The NYS HMP includes ice jams in the flood hazard profile and identifies ice jams as a hazard of concern for the State. Historically, 12 ice jams have been reported in Genesee County. 	<ul style="list-style-type: none"> Input from Planning Partnership NYS HMP Update FEMA NOAA- NCEI USACE CRREL Ice Jam Database
Groundwater Contamination (Natural)	No	No	<ul style="list-style-type: none"> The Planning Partnership did not identify groundwater contamination to be a concern in the County. 	<ul style="list-style-type: none"> Input from Planning Partnership
Hailstorm	Yes	Yes	<ul style="list-style-type: none"> The effects of hailstorms are discussed in the Severe Storm profile. 	
Hazardous Materials (including fixed facilities and in-transit vehicles)	Yes	Yes	<ul style="list-style-type: none"> Genesee County has many roadways, railways, and pipelines that may carry hazardous materials through the County. The NYSDEC Spill Incidents Database lists 1,226 spill incidents throughout the County from 1978, through October 10, 2017, with an average of 30 incidents per year. Genesee County is home to 11 fixed facilities that store or use hazardous materials and that fall under Tier II reporting requirements. 	<ul style="list-style-type: none"> Input from Planning Partnership Genesee County OEM



Hazard	Is this a hazard that may occur in Genesee County?	If yes, does this hazard pose a significant threat to the County?	Why was this determination made?	Source(s)
Hurricane (tropical cyclones, including tropical storms and tropical depressions)	Yes	Yes	<ul style="list-style-type: none"> The effects of hurricanes are discussed in the Severe Storm profile. In 2012, Superstorm Sandy brought strong winds and heavy rains to Genesee County, which downed trees and power lines. 	
Ice Jams	Yes	No	<ul style="list-style-type: none"> The effects of ice jams are discussed in the Flood profile. The Planning Partnership determined this hazard to be not significant due to a lack of impact on County residents and assets. 	
Ice Storm	Yes	Yes	<ul style="list-style-type: none"> The effects of ice storms are discussed in the Severe Winter Storm profile. 	
Infestation	Yes	No	<ul style="list-style-type: none"> The Planning Partnership did not identify infestation to be a concern in the County. 	<ul style="list-style-type: none"> Input from Planning Partnership
Land Subsidence	No	No	<ul style="list-style-type: none"> NYS HMP indicates that New York State is vulnerable to land subsidence; however, this hazard is “extremely localized” and poses a “very low risk to population and property.” NYS HMP does not identify Genesee County as a community that has experienced land subsidence in the past. In general, moderate to low land subsidence susceptibility exists for New York State; however, the NYS HMP states that this hazard presents very low risk to population or property. The Planning Partnership did not identify land subsidence as a hazard of concern for Genesee County. 	<ul style="list-style-type: none"> NYS DHSES Input from Planning Partnership USGS Fact Sheet 165-00
Landslide	Yes	No	<ul style="list-style-type: none"> The Planning Partnership did not identify landslide as a hazard of concern for Genesee County. 	<ul style="list-style-type: none"> NYS DHSES Input from Planning Partnership USGS
Levee Failure	No	No	<ul style="list-style-type: none"> The Planning Partnership did not identify levee failure as a hazard of concern for Genesee County. 	<ul style="list-style-type: none"> Input from Planning Partnership
Nor’easters (extra-tropical cyclones, including severe winter low-pressure systems)	No	No	<ul style="list-style-type: none"> Genesee County is located in the western part of New York State, and is therefore not highly susceptible to Nor’easter systems that come up the eastern seaboard. 	<ul style="list-style-type: none"> FEMA NYS DHSES NOAA- NCEI Input from Planning Partnership
Pandemic Disease	Yes	Yes	<ul style="list-style-type: none"> This hazard is addressed as Epidemic. 	<ul style="list-style-type: none"> Input from Planning Partnership



Hazard	Is this a hazard that may occur in Genesee County?	If yes, does this hazard pose a significant threat to the County?	Why was this determination made?	Source(s)
Severe Storm (windstorms, thunderstorms, lightning, hail, hurricanes, and tornados)	Yes	Yes	<ul style="list-style-type: none"> • NOAA’s NCEI storm events database indicates that Genesee County was impacted by approximately 141 severe storm events between 1973 and 2016. • The NYS HMP indicated that Genesee County has experienced 37 hailstorm events between 1960 and 2012. • NYS HMP indicates hurricanes and tornadoes are significant hazards that impact New York State. • A total of two tornadoes have impacted Genesee County from 1950 to 2016. • The Planning Partnership identified severe storms as a significant hazard affecting the County. 	<ul style="list-style-type: none"> • NOAA-NCEI • FEMA • NYS DHSES • Input from Planning Partnership
Severe Winter Storm (heavy snow, blizzards, sleet, freezing rain, and ice storms)	Yes	Yes	<ul style="list-style-type: none"> • Between 1954 and 2017, FEMA included New York State in 25 winter storm-related major disaster (DR) or emergency (EM) declarations. These events were classified as one or a combination of the following incidents: ice storm, severe storms, flooding, snowstorms, severe winter storm, severe blizzard, blizzard, snow, and winter storm. Genesee County was included in 10 of these declarations. • The Planning Partnership identified severe winter storms as a significant hazard affecting the County. 	<ul style="list-style-type: none"> • FEMA • NYS HMP • NOAA- NCEI • Input from Planning Partnership
Shallow (elevated) Groundwater Flooding	No	No	<ul style="list-style-type: none"> • Shallow groundwater flooding was not identified as a hazard in the NYS HMP. • Shallow groundwater conditions are not typically found within the County. 	<ul style="list-style-type: none"> • Input from Planning Partnership • NYS HMP
Terrorism	Yes	Yes	<ul style="list-style-type: none"> • The Planning Partnership identified terrorism as a hazard of concern. 	<ul style="list-style-type: none"> • Input from Planning Partnership • Genesee County OEM
Tornado	Yes	Yes	<ul style="list-style-type: none"> • The effects of tornadoes are discussed in the Severe Storm profile. 	
Transportation Accident	Yes	Yes	<ul style="list-style-type: none"> • Between 2009 and 2016, Genesee County has recorded nearly 16,000 transportation accidents. 	<ul style="list-style-type: none"> • Input from Planning Partnership • NYS Department of Motor Vehicles • NTSB • Federal Railroad Administration
Tsunami	No	No	<ul style="list-style-type: none"> • Genesee County has no ocean coastline. 	
Utility Failure	Yes	Yes	<ul style="list-style-type: none"> • Genesee County experiences utility failures (generally power outages) several times each year. These failures are usually due to severe storms or severe winter storms that affect the County. 	<ul style="list-style-type: none"> • Input from Planning Partnership • Genesee County OEM • NOAA- NCEI



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Volcano	No	No	<ul style="list-style-type: none"> There are no volcanoes located in New York State. 	<ul style="list-style-type: none"> NYS HMP Input from Planning Partnership
Wildfire	Yes	Yes	<ul style="list-style-type: none"> Wildfires have occurred within Genesee County. The County's agriculture industry could be severely impacted by a large wildfire. 	<ul style="list-style-type: none"> NYS HMP Input from Planning Partnership FEMA NYSDEC
Windstorm	Yes	Yes	<ul style="list-style-type: none"> The effects of windstorms are discussed in the Severe Storm profile. 	

Notes:

- CRREL Cold Regions Research and Engineering Laboratory
- FEMA Federal Emergency Management Agency
- g Acceleration due to the force of gravity
- MRCC Midwestern Regional Climate Center
- NCEI National Centers for Environmental Information
- NGDC National Geophysical Data Center
- NID National Inventory of Dams
- NLD National Levee Database
- NOAA National Oceanic and Atmospheric Administration
- NTSB National Transportation Safety Board
- NYS DHSES New York State Division of Homeland Security and Emergency Services
- NYS HMP New York State Hazard Mitigation Plan
- NYSDEC New York State Department of Environmental Conservation
- NYSDOH New York State Department of Health
- OEM Office of Emergency Management and Fire
- PGA Peak Ground Acceleration
- USACE U.S. Army Corps of Engineers
- USDA U.S. Department of Agriculture
- USGS U.S. Geologic Survey





Based on the hazard of concern identification process described above, a total of eight natural and five man-made/technological hazards of concern were identified as significant hazards affecting the entire County. Section 5.4 of this HMP includes hazard profiles for each of 13 identified hazards. The 13 hazards of concern addressed in this HMP are listed below in alphabetical order:

- Civil Unrest
- Drought
- Earthquake
- Epidemic
- Extreme Temperatures
- Flood
- Hazardous Materials
- Severe Storm
- Severe Winter Storm
- Terrorism
- Transportation Accidents
- Utility Failure
- Wildfire