Natural Features

As with the Target Features, Natural Features also present a risk factor to the Committee. They too are identified with brief narratives and, in some cases, supported by accompanying data to quantify emergency response and/or measure the emergency response. Response experience is again useful to gauge the probability of adverse exposures related to the feature. Figure 4-17 follows the narrative ordering with a graphic, summary account of these features, the exposures they present and the emergency response capabilities required by these calls.

Some Natural feature are tracked, cataloged and calculated for the degree of risk they present to the public. Information and real-time data is gathered from weather stations, spotters and Emergency Responders for reports to Meteorologists and other agencies that assess conditions and assign a level of risk for public awareness and appropriate action to minimize adverse exposure. We are most familiar with National Weather Service assignments for these conditions and their delivery by broadcasters as “Advisories, Watches and/or Warning” messages.

The history of Natural Feature emergency events for Monroe County and the Town of Mendon are catalogued, monetized and discussed in *Monroe County Hazard Mitigation Plan, adopted May 9, 2017*, and currently under review and revision. Chapters 9.14 for the Village of Honeoye Falls and 9.16 for the Town of Mendon are Appendix 4-6, and Appendix 4-7, respectively.

Aside from the emergency threat potential, several of these features are identified as natural resources with local legislative protection designed “to provide special controls over land development in sensitive environmental areas to protect vital features and resources.

“[In the Village], the rules and regulations protecting these areas were enacted in 1991, updated in 2019 and are in Article 23 of the Zoning Code (Chapter 190 of the Village Code)” (2022 Village Comprehensive Plan, p.34). The extent and location of these five (5) Environmental Protection Overlay Districts (EPOD) is mapped on Figure 4-18 (Village map dated 3.4.22).

The *Town of Mendon Open Space, Parks & Recreation Master Plan* (Adopted 1.8.01), is an inventory of natural resources and features that provides a base for the Town’s EPOD designations and regulations. The EPOD Maps reflect local legislation to protect sensitive environmental areas. These maps each represent an individual feature and are noted in the narratives below.

Natural Features are:

A. Water

1. Streams & Tributaries

* Honeoye Creek
* Irondequoit Creek
* Spring Creek

1. Wetlands

The streams and tributaries within the Town flow north to Lake Ontario. As depicted on Figure 4-19, there are two watersheds within the geography of the Town: the Genesee River and Irondequoit Bay Watersheds (Town of Mendon Comprehensive Plan, Town website, 12.17.22). As natural features, these water courses are used for recreation by children and adults for activities such as hiking, fishing, ice skating, observing nature and watercraft adventure. These uses are accessed from the shores of both public and private properties. From season to season these courses change by volume and by current characteristics, and changes can be dramatic with rain swells, snow melt and ice thaw. Primary Fire Department calls are for rescue. Some calls become recovery events.

Figure 4-20, is the “Town of Mendon, EPOD #3 *Watercourse Protection Overlay District*” map (Gates, 8.11.22).

Wetland features attract bird watchers and other nature observers who are also subject to risks associated with the presence of water.

Figure 4-21, is the “Town of Mendon, EPOD #1 *Wetland Protection Overlay District*” map (Gates, 8.11.22).

B. Flooding

1. Flash Flood
2. Waterway Flooding

* Flood Plains
* Floodways
* USGS Gauge Stations

Flash Flooding is a rapid occurrence when a surge of water presents in an unexpected location and poses a danger. For example, an ice jam or debris tangle on a stream interrupts the downstream flow, diverting water above the natural bank until the jam is breached and the water returns to the stream corridor. The major threats are: to motorists along roadways that parallel the stream corridor, especially at night; and, to children who may be drawn to the presence of water in an unusual location. Although the flooding inflow may seem to creep in elevation, the outflow of water can be swift and overcome a wader’s footing.

Waterway Flooding is more predictable given the usual occurrences of weather and local drainage behavior that feed the volume of our stream corridors. When there is too much water for containment within steam banks, our built retention and detention ponds, and/or for soil absorption we experience degrees of flooding. Agricultural flooding varies with soil conditions as depicted on Figure 4-22, the “Town of Mendon, EPOD #9 *Soils Susceptible To Ponding Overlay District*” map (Gates, 8.11.22).

Floodways and Flood Plains are determined and mapped by the Federal Emergency Management Agency (FEMA). Figure 4-23, the “Town of Mendon, EPOD #8 *Flood Damage Prevention Overlay District*” map (Gates, 8.11.22), consolidates FEMA’s multiple map segments for the Town and targets the local threat potential for life safety, property damage and environmental harm. Please note that Honeoye Creek is tagged as a “USGS Stream,” meaning there is a Federal Gauge Station that continuously monitors and records the stream elevation. Stream elevations have downstream implications and they are considered by Hydrologists in calculating and predicting potential flood conditions. Readers should also be aware that the Lower Dam on Honeoye Creek no longer exists to provide storage capacity as a viable protective factor for the downstream landscape.

Flooding is New York State’s #1 hazard. Although events can be predicted, properties, production and businesses can be insured for loss, mitigation projects can be built to protect property, and public alerting and warning outreach is deployed, human behavior is a major determinate for life safety outcomes. Human behavior is the key to successful outcomes in every emergency condition.

C. Weather

1. Blizzard
2. Ice Storm
3. Wind
4. Hurricane

Significant weather events typically involve local municipal resources that may work in concert with Emergency Services to clear transportation corridors, other public rights-of-way and/or easements to allow access for Fire Departments and other First Responders.

Some of our weather events are seasonal and others can occur year-round as weather patterns present. “Blizzard” conditions are defined by the National Weather Service. Ice Storms and Wind events vary in magnitude and range anywhere from nuisance conditions to major events with power outages, prolonged debris clean-up and/or infrastructure restoration.

Aside from Hurricane Agnes (1972), our local experience with Hurricanes is generally fringe exposures to precipitation and wind.

Presidential Disaster Declarations deploy FEMA assets to affected areas. Figure 4-24, quantifies these declarations by Region and County from 1954 to September 2021. Figure 4-25, monetizes these declarations for Monroe County from 1992 to April 20, 2009 with a note about the March 1991 Ice Storm.

And, Figure 4-26, catalogs activations of the Monroe County Emergency Operations Center (EOC) from 1992 to January 12, 2010 to indicate Natural and Target Feature-driven emergencies that require significant local, County, State and Federal resources across the spectrum from readiness (planning, training, exercising), response, recovery (built and natural landscape restoration, monetary reimbursement) and mitigation (installation of protective measures, revision to readiness measures based on experience). This Figure also contains a chart that separates the duration of the EOC activations for Natural and Target (“Technological”) Features. Readers should note that of the 544.45 hours, 496 hours were in response to Natural Feature emergencies, while 48.45 hours responded to Target Feature emergencies. Although generally predictable, the Natural Features tend to be widespread and require cooperation and coordination of multiple public and private resources. Three of the six noted Target Features were local alarms with Special Operations Team request or protocol-driven EOC activation. The other three were activations were requested by the County Executive (Monroe County OEM, 8.1.22).

D. Earthquake

Monroe County, generally, and our local landscape, has measured Earthquake activity. We have not suffered widespread damage, but there has been glass breakage and foundation disturbance in some older buildings. Seismic activity is detected and registered locally by sensors at sensitive structures and at one of our Universities.

E. Woodlots/Woodlands

Figure 4-27, is the “Town of Mendon, EPOD #7 *Woodlot and Timber Harvesting Protection Overlay District*” map (Gates, 8.29.22).

These features overlay private and public property. Public access is usually via parkland and the trail system. These features draw people for recreational pursuits and they may be co-located with other Natural Features like stream corridors for example. The emergent conditions can be human needs like EMS or rescue, and/or fire sparked by natural causes, “wires down” or human behavior. 12.19.22