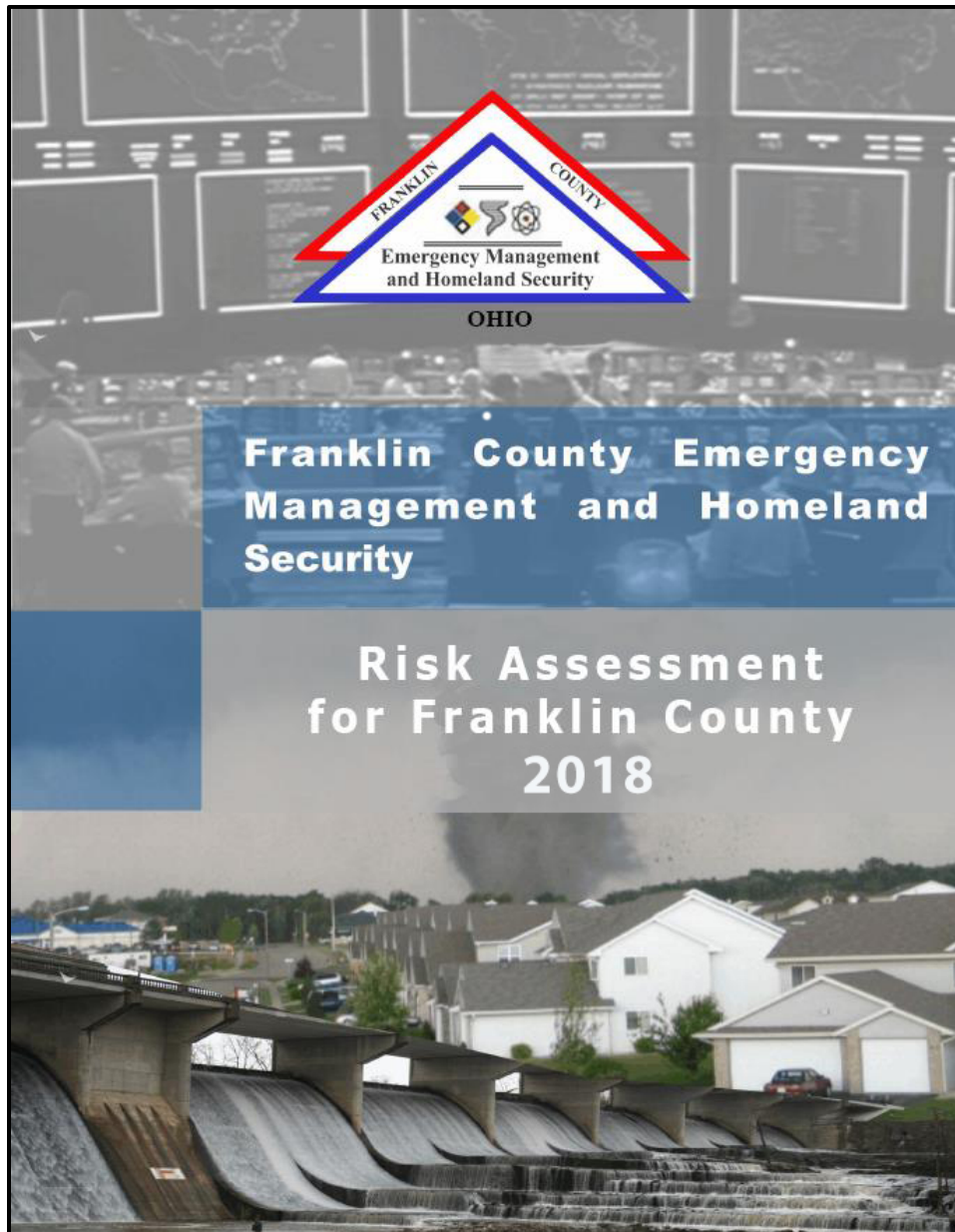


HAZARD IDENTIFICATION

See **Appendix A. Risk Assessment for Franklin County 2018** to access the full risk assessment document. This section only provides a summary of the hazards included in this plan, and the overall findings as it pertains to the **Natural Hazards** that may potentially impact the county.

FIGURE 9: RISK ASSESSMENT FOR FRANKLIN COUNTY 2018



Hazard Identification Update

Only natural hazards are identified and examined in this plan update as required by the Disaster Mitigation Act of 2000. See **Appendix A. Risk Assessment for Franklin County 2018** for all of the hazard-specific information and history of each hazard within the county.

The table below compares the hazards identified for the initial plan, seven natural hazards identified and analyzed in the 2012 update, and 10 natural hazards identified and analyzed for the 2018 update.

TABLE 17: IDENTIFIED HAZARDS

Hazards Identified for 2007 Plan	Hazards Identified for the 2012 Plan	Hazards Identified for the 2018 Plan
Flooding	Flooding	Flooding
Winter Storms	Severe Winter Weather	Severe Winter Weather
Tornadoes	Tornadoes	Tornadoes
Thunderstorms	Severe Summer Weather	Severe Summer Weather
Drought	Drought	Drought
----	Invasive Species	Invasive Species
Earthquake	Earthquake	Earthquake
		Extreme Heat
		Dam/Levee Failure
		Karst/Sinkhole

During the planning process, Franklin County and community representatives considered all natural hazards for inclusion in the plan. Per FEMA's mandate to address all natural hazards, the following natural hazards were not included because these hazards do not directly impact the County or have not created problems in the past. They are:

- Hurricanes
- Landslides
- Sea Level Rise
- Space Weather
- Storm Surge
- Tsunami
- Wildfire

Note: Although Space Weather is addressed in the **2018 Risk Assessment for Franklin County**, the Core Group determined that Space Weather would not be included in the 2018 Natural Hazard Mitigation Plan because it is not a typical hazard that offers many realistic and fundable mitigation opportunities for the participating jurisdictions. Wildfire was also not included because fire departments have determined the risk of wildfire is low enough that many departments are no longer maintaining brush fire trucks.

Identifying Hazards

To reduce the potential for damage due to hazards, it is necessary to identify hazards that may affect the County. This process was completed during the update of the **2018 Risk Assessment for Franklin County**. The methodology used to identify and rank the hazards faced in Franklin County can be found in **Appendix A. Risk Assessment for Franklin County 2018**. Hazard identification investigates, identifies and documents potential hazards, and examines their causes and impact chains, which can vary in length. The severity of impact is further influenced by vulnerability factors (water catchment areas, steep slopes) and whether there are elements present which are vulnerable to the hazard, e.g., structures in low lying areas.

Knowledge of the types of hazards that may impact an area is essential for analyzing and assessing risks. Hazards require different levels of risk assessment depending on the extent of the impact they can have on the community. A hazard that is unlikely to happen (and if it does, causes very little damage) will not require the same level of assessment as one that happens frequently and causes severe damage.

Steps in Hazard Identification

1. Identification and classification of hazards.
2. Determination of appropriate risk analysis level, based on potential impact and data available.
3. Identification and characterization of hazard-prone locations.
4. Estimation of the probability of occurrence.
5. Estimation of possible magnitude.

Hazard identification describes and assesses the frequency of occurrence, at a specific place, at a specific time, and with a specific intensity and duration, for a vulnerable population, property, economy and environment.

Countywide hazards, which include Severe Winter Weather, Tornadoes, Severe Summer Weather, Drought, Invasive Species, Earthquakes, and Extreme Heat affect all participating jurisdictions of this plan. The following is a brief description of each of the natural hazards impacting the County.

Dam Failure/Levee Failure

Dam/ Levee Failure is defined as an uncontrolled release of impounded water. A dam is defined as an artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material, for the purpose of storage or control of water. The causes of dam failures include overtopping caused by floods that exceed the capacity of the dam, deliberate acts of sabotage, structural failure of materials used in dam construction, movement and/or failure of the foundation supporting the dam, settlement and cracking of concrete or embankment dams, piping and internal erosion of soil in embankment dams, and inadequate maintenance and upkeep. Despite efforts to provide sufficient structural integrity and to perform inspection and maintenance, problems can develop that can lead to failure. While most dams have storage volumes small enough that failures would have little or no consequences, dams with large storage amounts could cause significant flooding downstream. The O'Shaughnessy Dam and the Hoover Dam are the two dams impacting Franklin County that are found on the Ohio EMA's list

of the ten most potentially hazardous dams in the state, based on the possible catastrophic consequences should they fail.

A levee is any artificial barrier together with appurtenant works that will divert or restrain the flow of a stream or other body of water for the purpose of protecting an area from inundation by flood waters. Generally, a levee is subjected to water loading during a few days or weeks in a given year; unlike a dam that is retaining water most days in the same year. A levee breach results when a portion of the levee breaks away, providing an opening for water to flood the landward side of the structure. Such breaches can be caused by surface erosion due to water velocities, or they can be the result of subsurface actions. Levee overtopping is similar to dam overtopping in that the flood waters simply exceed the design capacity of the structure, thus flowing over the lowest crest of the system. Such overtopping can lead to erosion on the landward side which, subsequently, can lead to breaching. The National Levee Database lists the West Columbus Local Protection Project (LPP), Agg Rok Reach Levee, and King Ave Levee as the three levees in Franklin County.

Drought

Drought is defined as a prolonged period of abnormally dry weather, where the lack of sufficient precipitation causes a serious hydrologic imbalance with economic and/or social consequences. Franklin County is primarily impacted by drought relating to shortages in the water supply as well as a decrease in overall water quality. Drought also greatly impacts land throughout the county that is utilized as cropland or pasture.

Earthquakes

Earthquakes are caused by the movement of the earth's crustal plates along faults. Franklin County is not located on a fault line, nor have any epicenters been located in Franklin County. Earthquakes occurring in other areas have been felt in Franklin County; however, no damage has been reported.

Extreme Heat

Extreme Heat events, or heat waves, are prolonged periods of excessively hot weather, which may be accompanied by high humidity. In 2012, three people died as a result of extreme heat in Ohio. From 2004-2013, the average number of heat related deaths per year exceeded all other weather related fatalities.

Flooding

Flooding occurs in many forms, from naturally occurring to human-induced. Common to all flooding is the accumulation of too much water in too little time in too small a place. From 1950 to December 2017, 116 flood and flash flood events were reported in Franklin County according to the NOAA National Climatic Data Center Storm Events Database. From 1999 to 2017 Franklin County was subject to many different types of flooding and received as many as 10 flood warnings in a single year. Flash flooding is the deadliest form of flooding in the United States.

Invasive Species

Invasive Species are defined as any species that is not native to an ecosystem and whose introduction causes or is likely to cause harm to the economy, environment, or human health. An increasing threat of exotic diseases, such as the dangerous West Nile virus, exists because of

increased transportation and encroachment of humans into previously remote ecosystems. Two events that have caused substantial economic and environmental damage in Ohio are the introduction of zebra mussels into waterways and the infestation of the emerald ash borer, responsible for killing ash trees.

Karst/Sinkholes

Karst refers to a landform that develops on or in limestone, dolomite, or gypsum by dissolution and that is characterized by the presence of characteristic features such as sinkholes, underground (or internal) drainage through solution-enlarged fractures (joints), and caves. Sudden collapse of an underground cavern or opening of a sinkhole can cause surface subsidence that can severely damage or destroy any overlying structure such as a building, bridge, or highway. A sinkhole is a hole that forms in the Earth's surface as a result of the chemical weathering of carbonate rocks like limestone, as well as salt beds or rocks that can be severely weathered as water runs through them and erosion.

Severe Summer Weather

Severe Summer Weather is classified as thunderstorms, hail, lightning, and damaging wind. Each of these hazards has its own severity measure and often all four occur in one storm system, causing much more damage than each would have alone. According to the NOAA National Climatic Data Center's Storm Events Database, there were 436 strong/high/thunderstorm wind, and lightning events, as well as 212 hail events, for Franklin County from January 1950 to December 2017.

Severe Winter Weather

Severe Winter Weather is classified as snow, ice and extremely cold conditions. Winter storms are events in which the dominant forms of precipitation occur only at cold temperatures. According to the NOAA National Climatic Data Center's Storm Events Database, there were reports of 94 winter weather events for Franklin County from January 1996 to December 2017.

Tornadoes

Tornadoes are nature's most violent windstorms – even weak ones can cause significant damage and fatalities. A tornado is defined as a rotating column of air, in contact with the surface, pendant from a cumuliform cloud, and often visible as a funnel cloud and/or circulating debris/dust at the ground. According to the National Climatic Data Center, 32 tornadic events were reported in Franklin County from January 1950 through December 2017, all of which were rated F3 (or EF3) and under.