

Risk Assessment - Draft

Public Comments should be made to dtuftie@ncicg.org

Putnam County

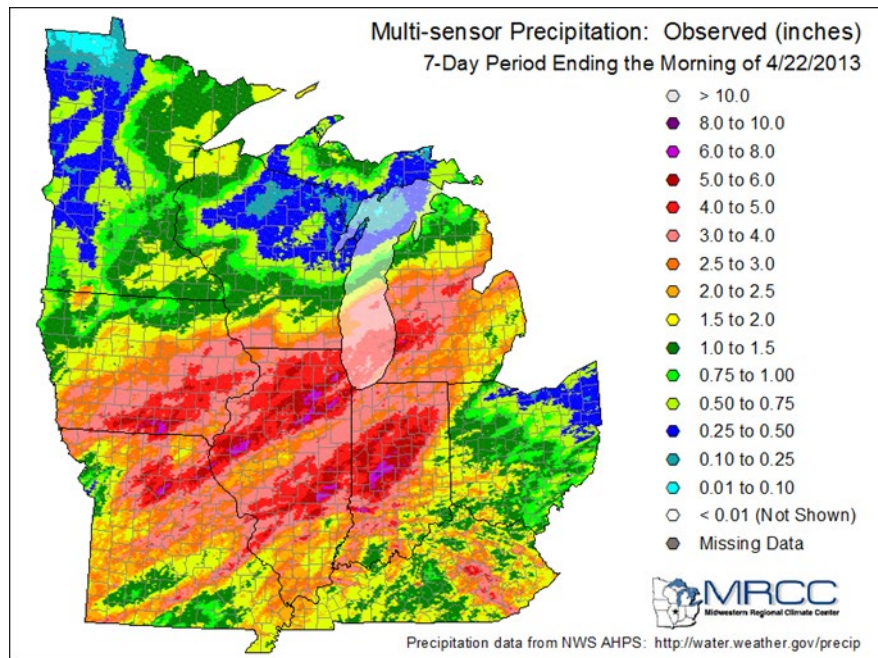
Risk Assessment								
Communities	Tornadoes	Floods	Winter Storms	Extreme Temps.	Dangerous Winds	Lightning	Drought	Hail
Putnam County	Low	Low	High	Medium	High	Low	Medium	Medium

Location: Putnam County is located in north central Illinois and is bordered by the Counties of LaSalle, Marshall, Stark, and Bureau. The county is part of the Peru-Ottawa, Illinois Micropolitan Statistical Area.

Population: 5,637 (2020 Census)

Major Storm Events since February 2008:

- April 17, 2013 – April 19, 2013 Flood: A slow moving storm dropped upwards of 10 inches of rain across central and southeast Illinois. The graphic below shows precipitation amounts from the storm. The storm caused widespread flooding and catastrophic damage in communities along the Illinois River. The damage assessment for the



The damage assessment for the 2013 storms was \$127,000 for county infrastructure, not including township road districts or municipalities. The Federal Emergency Management Agency approved \$30, 472 in reimbursements.

- The floods of 2008 and 2013 had huge effects on Walnut Grove and Senachwine Conservation Areas. The problem with both areas is that the structure is owned by one person and the land is owned by someone else.
- **August 10, 2020** - A derecho (long-lived line of thunderstorms with intense winds) produced widespread wind damage across Iowa, northern Illinois, and northern Indiana. Many areas had hurricane-force wind speeds more than 75 mph. Eleven tornadoes also occurred across northern

Risk Assessment - Draft

Illinois. Between the winds and the tornadoes, a widespread region of the Midwest saw extensive damage to trees, power lines, buildings, and vehicles. Putnam county experienced damage to trees, crops, and buildings. There were also power outages that resulted from the damages to power lines.

Tornado Risk: Putnam County has a “Low” risk of tornadoes. The county has tornado warning sirens at partial coverage over villages and Lake Thunderbird. Putnam County Sheriff’s Office 911 Dispatch is responsible for activating the sirens. The county currently does not have tornado shelters. The county has had fewer than 10 tornadoes since 1965. Two of the more recent tornado touchdowns happened on July 17, 2016, in rural Hennepin and on October 11th, 2021, in rural McNabb. There was no impact resulting from both instances.

Flood Risk: Putnam County has a “Low” risk of flooding. Current locations at risk of flooding include Route 18 at the Marshall-Putnam County line, Route 89 and businesses on that road just south of Spring Valley, homes in Cape Cloud along Route 26 one mile north of route 18, homes in Walnut Grove just east of Putnam along the Illinois River, and the railroad along Route 29. Past flooding on the railroad have resulted in the gravel and ground under and along the tracks to erode. All locations listed are in a floodplain. The Hennepin Drainage District Levee impedes the flow of water during flooding events.

Type(s) of Flooding: Riverine Flooding/ Urban Drainage- Surface Water Flooding

Area of Risk: All properties located in the Special Flood Hazard Area (SFHA) as identified by FEMA Flood Insurance Rate Maps (FIRMs).

Critical Facilities at Risk: None

National Flood Insurance Program Participant: Yes

Community Rating System Participant: No

Winter Storm Risk: Putnam County has a “High” risk of winter storms including blizzards, heavy snowstorms, and ice storms. Early frost and freeze events are another form of winter weather that are factored into determining the winter storm risk level. The county has had instances of heavy snows in the amount of 4-7 inches and 5-8 inches that have also been combined with winds that have resulted in heavy drifting. An ice storm that occurred on February 11th, 2019, resulted in 0.5 to 0.75 inches of ice accumulation with impacts including power outages from snapped power lines, numerous downed power poles, and tree damage throughout the county. The instances of heavy snows also left many people across the county without power for a few hours.

Extreme Temperatures Risk: Extreme heat and cold can have detrimental effects on the human body including illness and death. Exposure to extreme heat can lead to heat rash, exhaustion, and stroke. When exposed to extremely cold temperatures, the human body loses heat quickly. Unable to replace utilized energy, the body is susceptible to hypothermia and frostbite. Extreme heat and cold can be problematic for public water systems. Although water main breaks are thought to occur more frequently during the winter, they can happen anytime of the year. According to AccuWeather.com, prolonged hot and cold temperatures cause the ground to shift more abruptly, which leads to water main breaks. The age and condition of water mains can also play a factor. Putnam County more recently experienced below freezing temperatures from wind chill dropping all the way to -30 degrees Fahrenheit for several hours on January 29th, 2019. This

Risk Assessment - Draft

resulted in the temporary closing of schools, churches, and businesses. The county has ADA approved heating and cooling shelters. These shelters include the McNabb Fire Department/Putnam County EMS Building and other fire departments in the county as needed. Putnam County has a “Medium” risk of extreme temperatures.

Dangerous Winds Risk: This category includes thunderstorm winds, high winds, and strong winds. Putnam County has a “High” risk of having dangerous winds that can lead to property damage and crop damage. During high winds, people are at a greater risk for injury and death as a result of flying debris and falling trees and power lines. On instance of a powerful straight-line wind thunderstorm consisted of winds of up to 90 to 100 mph. The impact of this storm included power outages from snapped power lines, uprooted trees, and roof damage to businesses and homes.

Lightning Risk: Lightning is caused by the buildup and release of atmospheric electricity. Whenever there is a thunderstorm, lightning has occurred. Lightning can strike anywhere and has the potential to cause fatalities, injury, and property damage. Putnam County has a “Low” risk of lightning that could result in property damage or bodily harm.

Drought Risk: Drought is caused by a lack of precipitation over an extended period of time. A prolonged drought can have a devastating impact on a region’s economy and quality of life. Putnam County experienced a drought between June-December 2012 that totaled \$6.3 million in crop damage. Putnam County has a “Medium” risk of drought.

Hail Risk: Hailstones can be found within the middle and upper portions of most thunderstorms. Hailstones are compacted layers of ice and snow that look like snowballs. Hailstones may be as small as marbles or as large as softballs. Hailstones cause damage to property and crops. Putnam County has a “Medium” risk of hail.

Additional Information:

- The county has an Emergency Operations Plan that was submitted on March 15th, 2021 and approved by IEMA on April 12th, 2021. The plan does address natural hazards.
- The county has a zoning ordinance that was adopted on May 9th, 2016 and revised on February 13th, 2018. The ordinance does address natural hazards.
- The county has a subdivision ordinance that was adopted around 1968.
- The county does have building codes in place. The code used in the International Code Council and the code is dated from 2009. All new buildings are inspected.
- The county has a Disaster Recovery Plan.
- The county has backup generators located at the Putnam County Sheriff’s Office/Courthouse, the Putnam County EMA, and the Putnam County Highway Department. The Granville Water Tower would benefit from a generator.
- The county is serviced by the Putnam County Sheriff’s Department, Hennepin Fire District, and Putnam County EMS.

Risk Assessment - Draft

- The county has mutual aid agreements through MABAS, ILEAS, IPWMAN, and IESMA.
- The Illinois River is filling with silt causing it to rise faster during period of heavy rain. The county would like to see the entire river dredged, not just the channel.
- The county handed out NOAA weather radios as requested to businesses, government entities, and schools a few years ago. They would like to find a way to provide radios to all residents of the county.
- The county has a link to BCR alerts on their website so that anyone can sign up for updates on daily weather forecasts and severe weather alerts.

Mitigation Activities:

- 1. Mitigation Strategy:** Enforce regulations and ordinances that pertain to development in floodplains.
Hazard Addressed: Floods
Responsible Entity or Person: Putnam County Board/ Building and Zoning Official
Benefit/Cost: High/Low
Priority: High
Cost: Staff Time
Revenue Source: General Fund
Resources: Putnam County Board
Benefits: Restrict development that places lives at risk; reduce the physical and financial impact of flooding; restore the floodplain to its natural purpose.
Deadline: 1-5 Years (Ongoing)
Mitigation Type: Education and Awareness
Activity Status: Continued into the activities list for this plan.
- 2. Mitigation Strategy:** Restrict construction of projects that may increase flooding impacts (i.e. levees, buildings, dams, filling, etc.)
Hazard Addressed: Floods
Responsible Entity or Person: Putnam County Board/ Building and Zoning Official
Benefit/Cost: High/Medium
Priority: Very High
Cost: Staff Time
Revenue Source: General Fund
Resources: Putnam County Zoning Official
Benefits: Prohibit activities that may have an adverse impact on communities and property owners.
Deadline: 1-5 Years (Ongoing)
Mitigation Type: Local Plans and Regulations
Activity Status: Continued into the activities list for this plan; Ongoing.
- 3. Mitigation Strategy:** Encourage other communities and counties to manage floodplain development.

Risk Assessment - Draft

Hazard Addressed: Floods

Responsible Entity or Person: Putnam County Zoning Official/ Putnam County Emergency Management Agency

Benefit/Cost: High/Low

Priority: High

Cost: Staff Time

Revenue Source: General Fund

Resources: Putnam County Board/ Zoning officials throughout the region

Benefits: Work together as a region to minimize the adverse impacts of flooding

Deadline: 1-5 Years (Ongoing)

Mitigation Type: Local Plans and Regulations

Activity Status: Continued into the activities list for this plan.

- Mitigation Strategy:** Participate in the development of a regional stormwater management ordinance that will reduce flooding and protect lives, property, and the environment.

Hazard Addressed: Floods

Responsible Entity or Person: Putnam County Board

Benefit/Cost: High/High

Priority: High

Cost: Staff Time/Engineering Costs/ Planning Consultant

Revenue Source: General Fund

Resources: Residents/ Public Officials/ Hydrologists/ Attorneys/ Planning Officials

Benefits: Minimize the adverse impact of stormwater on communities.

Deadline: 4 Years

Mitigation Type: Local Plans and Regulations

Activity Status: Continued into the activities list for this plan.

- Mitigation Strategy:** Participate in the development of a regional water resources plan.

Hazard Addressed: Drought

Responsible Entity or Person: Putnam County Board

Benefit/Cost: Low/High

Priority: High

Cost: Staff Time/Engineering Costs/ Planning Consultant

Revenue Source: General Fund

Resources: Residents/ Public Officials/ Hydrologists/ Attorneys/ Planning Officials

Benefits: Protect the region's water resources and be prepared for drought.

Deadline: 4 Years

Mitigation Type: Local Plans and Regulations

Activity Status: Ongoing, state doing regional plans. Tri-County Regional Plan Commission (Peoria) is partnering with IDNR to form a regional water supply plan for the Middle Illinois Basin. The MIB consists of seven counties: Peoria, Stark, Marshall, Putnam, Woodford, Livingston, and LaSalle.

- Mitigation Strategy:** Educate citizens regarding potential natural hazards and their impacts.

Risk Assessment - Draft

Hazard Addressed: Tornadoes, Floods, Winter Storms, Extreme Temps, Dangerous Winds, Lightning, Drought, Hail, Landslides, Wildfires

Responsible Entity or Person: Putnam County Emergency Management Agency

Benefit/Cost: High/Medium

Priority: Medium

Cost: Staff Time

Revenue Source: General Fund

Resources: Illinois Emergency Management Agency and Federal Emergency Management Agency

Benefits: Increase public awareness of the severity of natural hazards and their impacts.

Deadline: 1-5 Years (Ongoing)

Mitigation Type: Education and Awareness Programs

Activity Status: Continued into the activities list for this plan. Putnam County EMA provides ongoing public education on natural hazards and their impacts on their Facebook page and on the county's website; we also share information from the National Weather Service (NWS) on current weather and its impacts on Facebook daily.

7. **Mitigation Strategy:** Educate decision makers about policy measures, ordinances, and decisions that have an impact on mitigation activities, disaster response, and funding capability.

Hazard Addressed: Tornadoes, Floods, Winter Storms, Extreme Temps, Dangerous Winds, Lightning, Drought, Hail, Landslides, Wildfires

Responsible Entity or Person: Putnam County Board/ Putnam County Emergency Management Agency

Benefit/Cost: High/Medium

Priority: High

Cost: Staff Time

Revenue Source: General Fund

Resources: Associations/Organizations

Benefits: Increased awareness and understanding of the county's needs.

Deadline: 1-5 Years (Ongoing)

Mitigation Type: Education and Awareness Programs

Activity Status: Continued into the activities list for this plan. Putnam County EMA educates its county board elected officials on a yearly basis about current issues in Emergency Management; we also attend Mutual Aid Box Alarm System (MABAS Chiefs) meeting on a quarterly basis and educate them on current Emergency Management issues.

8. **Mitigation Strategy:** Encourage conservation development in design techniques.

Hazard Addressed: Tornadoes, Floods, Winter Storms, Extreme Temps, Dangerous Winds, Lightning, Drought, Hail, Landslides, Wildfires

Responsible Entity or Person: Putnam County Board/ Building and Zoning Official

Benefit/Cost: Medium/Low

Priority: Low

Cost: Staff Time

Revenue Source: General Fund

Resources: Engineers/Developers/Conservation Organizations

Risk Assessment - Draft

Benefits: Preserve open space.
Deadline: 1-5 Years (Ongoing)
Mitigation Type: Local Plans and Regulations
Activity Status: Continued into the activities list for this plan.

9. **Mitigation Strategy:** Adopt and enforce more strict building permit/ code requirements.
Hazard Addressed: Tornadoes, Floods, Dangerous Winds, Extreme Temperatures
Responsible Entity or Person: Putnam County Board/ Building and Zoning Official
Benefit/Cost: Medium/High
Priority: Medium
Cost: Staff Time
Revenue Source: General Fund
Resources: International Code Council
Benefits: Higher regulatory standards that promote safety.
Deadline: 1-5 Years (Ongoing)
Mitigation Type: Local Plans and Regulations
Activity Status: Continued into the activities list for this plan.

10. **Mitigation Strategy:** Participate in the National Flood Insurance Program's Community Rating System to help residents save on flood insurance premiums.
Hazard Addressed: Floods
Responsible Entity or Person: Putnam County Board/ Putnam County Emergency Management Agency
Benefit/Cost: High/High
Priority: Low
Cost: Varies depending on activities pursued
Revenue Source: General Fund
Resources: Insurance Services Office/ Illinois Department of Natural Resources/ Illinois Emergency Management Agency
Benefits: Lower flood insurance premiums for residents/ Activities reduce the impact of flooding.
Deadline: 1 Year
Mitigation Type: Local Plans and Regulations
Activity Status: Continued into the activities list for this plan.

11. **Mitigation Strategy:** Engage in a regional discussion on the implementation of best practices for activating early warning sirens during storm events.
Hazard Addressed: Tornado and Dangerous Winds
Responsible Entity or Person: A regional group consisting of County Emergency Management Agencies for Bureau/ LaSalle/ Marshall/ Putnam/ and Stark Counties, Local Fire Departments, Fire Protection Districts, County Sheriff's Departments, Local Police Departments, and Local Officials
Benefit/Cost: High/Low
Priority: Very High

Risk Assessment - Draft

Cost: Staff Time

Revenue Source: Local Funds

Resources: NOAA/ Illinois Emergency Management Agency/ Policies for other communities

Benefits: Regional guidelines on activating early warning sirens can lessen public confusion and save lives.

Deadline: 1 Year

Mitigation Type: Local Plans and Regulations

Activity Status: Continued into the activities list for this plan.

12. **Mitigation Strategy:** Examine the effects of rural stormwater infrastructure.

Hazard Addressed: Floods

Responsible Entity or Person: Putnam County Board/ Zoning Official

Benefit/Cost: Medium/High

Priority: High

Cost: Staff Time/ Engineering Studies/ Consulting Firms

Revenue Source: General Fund

Resources: United States Department of Agriculture/ Illinois Department of Natural Resources/
United States Environmental Protection Agency

Benefits: Understanding of the effects of rural stormwater infrastructure.

Deadline: 5 Years

Mitigation Type: Local Plans and Regulations

Activity Status: Continued into the activities list for this plan.

13. **Mitigation Strategy:** Identify funding resources and develop a cost share program to provide residents with NOAA weather radios.

Hazard Addressed: Tornadoes, Floods, Winter Storms, Extreme Temps, Dangerous Winds, Lightning, Hail, Landslides, Wildfires

Responsible Entity or Person: Putnam County Emergency Management Agency

Benefit/Cost: High/Medium

Priority: High

Cost: Cost of radios

Revenue Source: General Fund

Resources: NOAA/ Illinois Emergency Management Agency

Benefits: Increase awareness of approaching severe weather.

Deadline: 2 Years

Mitigation Type: Education and Awareness Programs

Activity Status: Carried over into the activities list for this plan. Putnam County EMA provides government offices and businesses weather radios as requested.

14. **Mitigation Strategy:** Work with regional partners to share resources and to create opportunities for the public to be engaged and informed about the risks of natural hazards and mitigation activities.

Hazard Addressed: Tornadoes, Floods, Winter Storms, Extreme Temps, Dangerous Winds, Lightning, Drought, Hail, Landslides, Wildfires

Risk Assessment - Draft

Responsible Entity or Person: Putnam County Board/ Putnam County Emergency Management Agency

Benefit/Cost: Medium/Low

Priority: High

Cost: Staff Time

Revenue Source: General Fund

Resources: Other communities/ North Central Illinois Council of Governments

Benefits: Collaboration provides opportunities to share ideas and resources.

Deadline: 1-5 Years (Ongoing)

Mitigation Type: Education and Awareness Programs

Activity Status: Continued into the activities list for this plan. Started, ongoing effort. Status: Putnam County EMA maintains its membership of Central Illinois Coalition Active in Response Planning (CILCARP) that is an 18 county region where we meet quarterly to discuss current emergency management, public health and hospital issues and where we can share information, training, partner on exercises, etc.; we also enter in to Mutual Aid Agreements with partner organizations to share resources and information; Putnam County EMA also is a member of the BPEPCP which encompasses hospitals, long term care facilities, a fire department, a Sheriff's office, and other emergency response agencies for the focus of maximizing the efficiency of emergency response through the use of joint-training, the sharing of information resources, and inter-agency cooperation.