



**Lake County  
All-Natural Hazards  
Mitigation Plan**

Lake County, Illinois

**2020 Annual  
Evaluation Report**  
of 2017 All-Natural Hazard Mitigation Plan

# Lake County, Illinois

## 2020 Annual Evaluation Report

### All-Natural Hazards Mitigation Plan

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#### Overview

The Lake County Hazard Mitigation Planning Committee (HMPC), Lake County departments and agencies, Lake County municipalities, and other stakeholders together conducted the 2017 update of the 2012 Lake County All-Natural Hazard Mitigation Plan (ANHMP). The HMPC has been in place since the development of the 2006 ANHMP and continues to meet annually. The Lake County Stormwater Management Commission (SMC) and Lake County Emergency Management Agency (LCEMA) coordinate the efforts of the HMPC.

This ANHMP, an update of the 2017 plan, assesses the natural hazards that affect Lake County, sets mitigation goals, considers mitigation efforts currently being implemented, evaluates additional mitigation strategies, and recommends mitigation actions to be implemented between 2017 and the next five-year update in 2021. The mitigation actions are designed to protect the people and assets of Lake County and designed to be undertaken by both the public and private sectors.

*Action Item 2: “Participation on the Hazard Mitigation Planning Committee and Plan Monitoring and Maintenance”* calls for the Lake County Hazard Mitigation Planning Committee (HMPC) to meet annually to evaluate and monitor progress on implementation of the ANHMP, and to organize for the next update of this ANHMP. The HMPC should submit the annual evaluation report to the County Board as an informational item.

The HMPC met on July 29, 2021, via Zoom to develop this 2020 Annual Evaluation Report. This report is based on discussions at the meeting and information collected from the HMPC, Lake County departments and agencies, municipalities, and stakeholders. Appendix A to this report contains the meeting’s agenda.

# Lake County Natural Disaster Declarations

## *Post-Plan Development & Adoption*

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### **Illinois COVID-19 FEMA-4489-DR**

#### **Declared March 26, 2020**

On March 24, 2020, Governor JB Pritzker requested a major disaster declaration due to the Coronavirus Disease 2019 (COVID-19) pandemic beginning on January 20, 2020 and continuing. The Governor requested a declaration for Individual Assistance (all programs) statewide and emergency protective measures (Category B), including direct Federal assistance under the Public Assistance program statewide. This event was of the severity and magnitude that the need for supplemental Federal assistance was determined to be necessary prior to the completion of joint Federal, State, and local government Preliminary Damage Assessments (PDAs). Per 44 C.F.R. § 206.33(d) and § 206.36(d), the requirement for a joint PDA may be waived for those incidents of such unusual severity and magnitude that formal field damage assessments are not required to establish the need for supplemental Federal assistance under the Stafford Act.<sup>1</sup>

On March 26, 2020, President Trump declared that a major disaster exists in the State of Illinois. This declaration made Individual Assistance limited to the Crisis Counseling Program requested by the Governor available in all areas in the State of Illinois. This declaration also made emergency protective measures (Category B) not authorized under other Federal statutes, including direct Federal assistance, under the Public Assistance program requested by the Governor available to state and eligible local governments and certain private nonprofit organizations on a cost-sharing basis for all areas in the State of Illinois.

Spring 2020 caused numerous flooding events in Lake County. In a 48-hour period between the dates of April 28-30, Lake County received between 2.92 inches (Buffalo Grove) and 4.50 inches (Fox Lake Hills) of rain. On May 15, 2020, Zion experienced flooding that shut down multiple intersections, including IL-173 and Wadsworth. On May 17, 2020, US-41 was closed at IL-60 in Lake Forest due to flooding. Residential streets near Deerfield and Wilmot Roads were flooded in Deerfield. Additionally, flooding was observed on Appley Avenue near Oak Spring Road in Libertyville. May 2020 was 0.6" away from breaking the record for wettest May ever in Chicago.

Following one of the wettest spring seasons on record came one of the driest summers on record – the summer of 2020. The summer of 2020 was also the warmest summer on record for Chicagoland. Further, there were 7 consecutive days in November where temperatures were in the 70s. Only one 70+ degree day during the month is the average.

On August 10, 2020, a derecho passed through Iowa and Northern Illinois. The National Weather Service defines a derecho as, "a widespread, long-lived windstorm that is associated with a band of rapidly moving showers or thunderstorms." The derecho produced an EF-1 tornado that touched down in Spring Grove, IL. Its path was nearly 4 miles long and 150 yards wide. The tornado caused no deaths or injuries. Most of the damage from this tornado was done to trees, but most of the structural damage occurred in Lake County before it passed north over the state line. It was also reported that trees in Lakemoor lost limbs up to 20 feet long and 8-10 inches in diameter due to strong winds.



## Status of Action Items

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The Action Plan (Chapter 6) in the Lake County All-Natural Hazards Mitigation Plan contains 33 action items. These action items were taken from the hazard mitigation recommendations made in Chapter 3 through 5. The status of the implementation of the action items are summarized below.

### **ACTION ITEM 1: PLAN ADOPTION**

Adoption of the *Lake County All-Natural Hazards Mitigation Plan* by resolution. See Table 1 for a list of communities and adoption dates.

Status: This Action Item was completed.

### **ACTION ITEM 2: PARTICIPATION ON THE HAZARD MITIGATION PLANNING COMMITTEE AND PLAN MONITORING AND MAINTENANCE**

A Lake County Local Planning Committee (HMPC) meeting will be held at least once a year to evaluate and monitor progress on implementation of the ANHMP, and to organize for the next update of this ANHMP. An annual report should be submitted to the County Board by the HMPC as an information item.

Status: The HMPC met on July 29, 2021. This Action Item was completed.

### **ACTION ITEM 2: INCORPORATE ANHMP INTO OTHER COUNTY AND MUNICIPAL PLANS**

Lake County communities have a variety of plans and ordinances in place. Actions identified in this ANHMP should be incorporated into comprehensive, stormwater management, capital improvement, land-use, and emergency management plans, zoning ordinances, building codes, and post-disaster mitigation policies and procedures. Each jurisdiction participating in this ANHMP will be responsible for reviewing their plans, ordinances, and policies and, as appropriate, revising those documents.

Each community that has adopted this mitigation plan will take the following actions to facilitate the incorporation of mitigation actions into their plans and ordinances:

Within one year of the adoption of the ANHMP by the community, the lead individual for each community (emergency manager, public works director, engineer, or planner) will lead a local committee that will complete an evaluation of the Villages Plans, Codes and Ordinances to determine those that need to be modified to incorporate the action items of the ANHMP.

When the plans, codes or ordinances are updated or modified for any purpose, a recommendation will be made to make the modifications noted in number 1 above.

Next time the ANHMP is updated or modified, a review will be completed within one year of adoption to determine if any additional modifications must be made to local plans, codes, or ordinances.

Status: Ongoing

Deer Park implemented a two-phase Stormwater Master Plan in May and October 2017.

Fox Lake incorporated aspects of ANHMP in their Strategic Plan (2018) and their Parks Master Plan (2018-19). They expect to incorporate aspects of ANHMP in future plan updates, such as their comprehensive plan which will be updated in 2022-23.

Round Lake Beach and Lincolnshire incorporated aspects of ANHMP in their Natural Hazard Mitigation Plan updated in August 2020 and March 2020 respectively.

Several communities have updated with Emergency Operations Plans with aspects from ANHMP.

The Village of Wauconda completed an Inflow and Infiltration study to improve their sanitary sewer system.

Communities involved: the County of Lake, Deer Park, Grayslake, Gurnee, Hawthorn Woods, Libertyville, Lincolnshire, Riverwoods, Fox Lake, Lake Barrington, Round Lake, Round Lake Beach, Volo, Wauconda, Beach Park, Winthrop Harbor, Highland Park

### **ACTION ITEM 3: CONTINUED IMPLEMENTATION OF THE WDO AND NFIP REQUIREMENTS**

Lake County and municipalities, whether certified or non-certified, should continue to fully implement and enforce the Lake County Watershed Development Ordinance (WDO) for all applicable developments.

Status:

- Des Plaines River Watershed: 10 communities
- Fox River Watershed: 10 communities
- North Branch Watershed: 4 communities
- Lake Michigan Watershed: 4 communities
- County-wide: Yes

### **ACTION ITEM 4: IMPROVE NATURAL HAZARDS PUBLIC INFORMATION EFFORTS WITH FOCUS ON THE PROMOTION OF FLOOD INSURANCE AND HOW PEOPLE CAN PROTECT THEMSELVES AND THEIR PROPERTY**

Education regarding natural hazards that can impact Lake County should be provided to all Lake County property owners and residents. Public information efforts have been implemented, but these efforts should be improved to reach people more effectively and to provide effective messages regarding life, health and safety and property protection. Public information and education efforts should focus on severe summer and winter storms, floods and tornadoes and materials should be developed specifically for Lake County and tailored to Lake County needs.

Status: Many communities involved have information posted on their respective websites or send out information in newsletters. Less common alternatives include making posts on Facebook and Twitter.

- Des Plaines River Watershed: 9 communities
- Fox River Watershed: 9 communities
- North Branch Watershed: 4 communities
- Lake Michigan 6 communities
- County-wide: Yes

### **ACTION ITEM 5: IDENTIFY NEEDS AND OBTAIN ALTERNATE POWER SOURCES FOR CRITICAL FACILITIES AND SHELTERS**

The July 2011 storms in Lake County highlighted the need for alternate power sources at critical facilities. The HMPC recognizes that FEMA mitigation funds are not available for this action item but recognizes the importance of all agencies and facility and shelter owners determining back-up power source needs and obtaining equipment and/or service.

Status: The communities involved have backup generators at their critical facilities. Examples of critical facilities are townhalls, police stations, fire stations, etc. The Village of Beach Park has backup power at all their critical facilities and are working on getting school districts and shelters set up with backup power capabilities. The backup generator at the Village Hall of North Barrington is tested weekly. Port Barrington purchased two additional portable generators in the past year.

- Des Plaines River Watershed: Kildeer, Lincolnshire, Vernon Hills
- Fox River Watershed: Barrington, North Barrington, Port Barrington, Round Lake Beach, Wauconda
- North Branch Watershed: Bannockburn, Deerfield, Green Oaks, Highland Park
- Lake Michigan Watershed: Beach Park, North Chicago, Zion
- County-wide: No

### **ACTION ITEM 6: REVIEW OF CRITICAL FACILITIES AND IMPLEMENT OF APPROPRIATE MITIGATION MEASURES**

Critical facilities should be evaluated to determine their vulnerability to tornadoes, severe storms, and floods. The availability of safe rooms and sheltering should be reviewed. Critical facilities have been mapped in the County's GIS. As the County further examines building footprints and floodplains as part of the stormwater management program, the review of critical facilities should be included. 20 Lake County critical facilities are in the floodplain, and other critical facilities are vulnerable to wind and severe storms. Where necessary, critical facilities should be mitigated and protected from identified natural hazards.

Status: The Village of Deer Park floodproofed their Village Hall. North Chicago floodproofed their main power source to eliminate transformer shutdown from flood waters.

- Des Plaines River Watershed: Deer Park
- Fox River Watershed: None
- North Branch Watershed: Highland Park
- Lake Michigan Watershed: North Chicago
- County-wide: No

### **ACTION ITEM 7: IMPROVE CAPACITY OF DRAINAGE SYSTEMS AND/OR PROVIDE ADDITIONAL STORAGE OF FLOOD WATERS**

When opportunities arise and when downstream areas are not adversely impacted (or mitigated), communities should strive to increase the capacity of drainage systems. Drainage improvements may include opening restrictive culverts or bridges, storm sewer improvements, etc. When appropriate and when opportunities are identified, the systems should be augmented with additional detention or retention to reduce runoff rates and runoff volumes.

Status: The Village of Barrington completed a Flint Creek restoration project which included streambank and online detention regrading which provides additional volume and flow capacity. The Village of Deerfield reconstructed a road in town and included storm sewers in the project to increase capacity. The Village of Green Oaks completed construction a project to reduce the frequency and magnitude of chronic nuisance flooding in two residential areas. Part of a subdivision in Lake Barrington had a drainage pipe replacement. The Village of Lincolnshire completed a village-wide drainage study and installed a 6" emergency standpipe connection to allow for quick hookup of flood relief pumps during an emergency.

- Des Plaines River Watershed: Deer Park, Hawthorn Woods, Lincolnshire, Third Lake
- Fox River Watershed: Barrington, Lake Barrington, Lake Zurich
- North Branch Watershed: Deerfield, Green Oaks, Highland Park
- Lake Michigan Watershed: Zion
- County-wide: Yes

#### **ACTION ITEM 8: IMPLEMENT MAINTENANCE PROGRAMS FOR DRAINAGE SYSTEMS, INCLUDING STREAMBANK AND RAVINE STABILIZATION EFFORTS**

The County, municipalities, and townships should develop and implement formal and regular drainage system maintenance programs. This effort should include the inspection of privately maintained drainage facilities. It is understood that each municipality and township will make these considerations based on available staffing and financial resources. Both urban and rural streams need maintenance. Also, bridges and culverts (active or abandoned) that restrict flood flows should be evaluated. The removal or enlargement of stream crossings, in cases where a modification will not cause an increase in downstream flooding, should be considered, and funded. Streambank and ravine or shoreline stabilization efforts should also be evaluated and implemented. Public information should be provided to property owners on how best to protect streambanks and shorelines.

Status: The communities involved have written plans and procedures in place to maintain and monitor drainage systems. Many communities conduct additional procedures following major storm events.

- Des Plaines River Watershed: 7 communities
- Fox River Watershed: 5 communities
- North Branch Watershed: 3 communities
- Lake Michigan Watershed: 1 community
- County-wide: No

#### **ACTION ITEM 9: IMPLEMENT PROPERTY PROTECTION PROJECTS FOR FLOOD MITIGATION**

Properties that are exposed to flood damage, severe storms, and severe erosion throughout Lake County should be protected through property protection measures where regional structural projects are not feasible. Property protection measures should include, but not be limited to, acquisition, elevation, floodproofing, or retrofitting. Priority should be given to repetitive loss properties and homes subject to the impacts of severe erosion, however, all flood prone properties (floodplain, depressional storage or SMC problem areas) including critical facilities should be included.

Status: In the City of Highland Park, 6 homes are participating in the voluntary buyout program since 2017 and the City is working with SMC to complete the projects. The Village of Libertyville incorporated recommendations from their Master Stormwater Management Plan into the design for upcoming construction projects, including the Rockland Road Corridor Flood Reduction Project and drainage improvements in the Highlands Subdivision study area. The Village of Lindenhurst built a stormwater depressional storage area at Lindenhurst Drive (near Sand Lake) to protect homes in the area. Des Plaines River Watershed: 3 (Deer Park, Libertyville, Lindenhurst)

- Fox River Watershed: Lake Barrington, Port Barrington
- North Branch Watershed: Highland Park
- Lake Michigan Watershed: North Chicago
- County-wide: No

**ACTION ITEM 10: REDUCE INFLOW AND INFILTRATION TO PROTECT AGAINST SEWER BACKUPS**

Municipalities should evaluate options and implement programs to reduce the inflow and infiltration of stormwater into the sanitary sewer system to reduce the wastewater treatment plant flow during severe storm and flood events. Efforts can be undertaken on a regional basis.

Status: The Village of Green Oaks completed Contract 1 of the TIF District Sanitary Sewer Rehabilitation Project. The City of Highland Park lines several miles of sanitary system to reduce inflow/infiltration and maintains the structural and functional capacity of the sanitary sewer. The City also offers a Voluntary Sewer Lateral Cost share program that provides up to \$1,260 in funding assistance to qualified residents per each location for flood protection measures such as installation of overhead sewers, lining lateral services or complete lateral replacements.

- Des Plaines River Watershed: Hawthorn Woods
- Fox River Watershed: Lake Zurich
- North Branch Watershed: Deerfield, Green Oaks, Highland Park
- Lake Michigan Watershed: None
- County-wide: No

**ACTION ITEM 11: IDENTIFY WIND MITIGATION OPPORTUNITIES FOR THE PROTECTION OF BUILDINGS, AND TO PROVIDE SAFE ROOMS AND SHELTERING**

Wind mitigation, and safe rooms and sheltering, needs can arise through planning efforts, building design efforts, and retrofitting opportunities. When needs, safety, and sheltering deficiencies are identified, alternatives for providing mitigation should be developed and funding sought.

Status: No new progress this year. Communities involved with this action item report upkeep of existing safe rooms and/or further investigation for new ones.

**ACTION ITEM 12: CONTINUE PARTICIPATION OR CONSIDER PARTICIPATION IN TREE CITY USA (URBAN FORESTRY)**

Lake County municipalities that are Tree City USA communities will maintain their status in the nationwide program, and communities that are not in the program will consider joining the program. It is understood that each municipality will make these considerations based on available staffing and financial resources.



Status: The communities involved are Tree City USA communities. Eighteen of those who responded this year reported continued participation in Tree City USA.

- Des Plaines River Watershed: 7 communities
- Fox River Watershed: 6 communities
- North Branch Watershed: 3 communities
- Lake Michigan Watershed: 2 communities
- County-wide: No

#### **ACTION ITEM 13: CONTINUE WORK FOR NIMS COMPLIANCE**

The county and all municipalities should ensure that they are NIMS compliant. Training opportunities for all first responders and other identified personnel on NIMS and ICS should be shared with all agencies.

Status: The communities involved are NIMS compliant.

- Des Plaines River Watershed: 7 communities
- Fox River Watershed: 5 communities
- North Branch Watershed: 2 communities
- Lake Michigan Watershed: 3 communities
- County-wide: No

#### **ACTION ITEM 14: IMPROVE BUILDING CODES AND BUILDING CODE ENFORCEMENT**

Communities that have not adopted the International Code series of building codes should do so, and for all communities, future code revisions should be pursued to strengthen new buildings against damage by high winds, tornadoes, hail, earthquakes, and flooding. The Building Code Effectiveness Grading Schedule (BCEGS) program is designed to evaluate the code adoption and enforcement efforts of a community, with emphasis on natural hazard mitigation. The County and most municipalities participate in BCEGS, and communities should strive to improve their rating to a 4/4, if not already attained. Requiring tornado “safe rooms” in certain structures should be considered. The floodplain provisions (design flood elevation) should also be considered in conjunction with the Lake County WDO.

Training should be developed and conducted for building department staff on building code administration, enforcement, the natural hazards aspects of the International Codes, regulation of mobile home installation, flood provisions, and any other provisions applicable to hazard mitigation.

Status: The Village of Bannockburn adopted the 2018 International Building Code in 2019. The Village of Gurnee accepted in the 2018 International Code Council. The City of Highland Park updated to the 2018 International Building Code. Lake Barrington updated to the 2018 ICC Building Codes in February 2020. Their BCEGS ratings are 4 (out of 10 where 1 is the highest) for one- and two-family residential property as well as commercial and industrial properties. The Village of Round Lake Beach accepted the 2018 ICC.

- Des Plaines River Watershed: Gurnee
- Fox River Watershed: Lake Barrington, Round Lake Beach
- North Branch Watershed: Bannockburn

- Lake Michigan Watershed: None
- County-wide: No

**ACTION ITEM 15: SEEK MITIGATION GRANT FUNDING FOR ADDITIONAL MITIGATION PLANNING AND COST BENEFICIAL PROJECTS**

The County, municipalities, other agencies, and institutions should apply for mitigation grant funding through available IEMA and FEMA programs for mitigation planning and mitigation projects. As required by IEMA and FEMA programs, projects must be cost beneficial. FEMA hazard mitigation funding including PDM, HMGP, FMA and Section 406 of the Stafford Act (for facilities and infrastructure damaged due to a presidentially declared disaster) should be considered.

Status: The Village of Beach Park is working with SMC’s buyout program to demolish two homes that were in the process of sliding in the creek behind them. The Village of Gurnee also participates in the buyout program and has had three awaiting demolitions. In the City of Highland Park, 5 homes were demolished in the past year.

- Des Plaines River Watershed: Gurnee
- Fox River Watershed: None
- North Branch Watershed: Highland Park
- Lake Michigan Watershed: Beach Park
- County-wide: Yes

**ACTION ITEM 16: CONTINUE PARTICIPATION OR CONSIDER PARTICIPATION IN STORMREADY**

Lake County municipalities that are National Weather Service StormReady communities will maintain their status in the nationwide program, and Lake County communities, other agencies, and colleges should consider joining the StormReady program. The StormReady program has been developed to provide communities guidelines to improve the timeliness and effectiveness of hazardous weather-related warnings for the public.

Status: The communities involved are StormReady communities.

Communities involved: Gurnee, Libertyville

**ACTION ITEM 17: IMPROVE EMERGENCY RESPONSE AND DEVELOP ASSESSMENT TEAMS**

Lake County and the municipalities should work to improve emergency response and to develop assessment teams for emergency management response, health department concerns and needs and for post-disaster mitigation.

If a community waits until a disaster occurs to plan post-disaster mitigation policies and procedures, they are too late. The time to prepare is before the disaster occurs. Preparation includes assigning post disaster tasks to:

- Determine the extent of the damages, including whether the structures are substantially damaged as defined in the WDO
- Determine the health and safety needs

- Ensure that the public is aware of actions that they should be taking, and that the community is taking to mitigate damages, as well as encouraging property owners and renters to work with their insurance agents to help cover their losses
- Ensuring that residents have the proper permits before repairing structures and ensuring that the repair is completed according to code
- Determine what mitigation actions are appropriate given the extent of damages
- Determine whether any temporary permit and construction moratoriums need to be put in place after the disaster

Response teams should be developed through the LCEMA and other county agencies and the HMPC. Individuals that may be needed for post disaster activities should be trained, should be aware of their potential assignments and should prepare documents that they may need to use after the disaster occurs.

Status: The communities involved have updated their Emergency Operations Plan.

Communities involved: The County of Lake, Beach Park, Grayslake, Gurnee, Highland Park, Riverwoods, Round Lake, Winthrop Harbor

#### **ACTION ITEM 18: ENHANCE RESPONSE AND RECOVERY INFORMATION SHARING AND COLLABORATION AND IDENTIFY ADDITIONAL TRAINING OPPORTUNITIES**

Improve information sharing between Lake County, municipal/township agencies and services providers, such as ComEd, during and after natural hazard events. Systems should be put in place to help ensure that response and recovery efforts are coordinating. Additional training opportunities should be identified, including annual exercises and tabletop exercises.

Status: Most of the communities involved updated plans and had city officials complete various training exercises. The Village of Barrington used a tabletop exercise to update their Emergency Operations Plan.

Communities involved: Barrington, Grayslake, Highland Park, Kildeer, Lincolnshire, Round Lake

#### **ACTION ITEM 19: CONTINUE PARTICIPATION OR CONSIDER PARTICIPATION IN THE NFIP'S COMMUNITY RATING SYSTEM**

Municipalities that participate in the NFIP should consider participating in the Community Rating System (CRS). Lake County and communities already participate in CRS, and they should also continue their participation.

Status: The communities involved maintain their CRS rating. The Village of Port Barrington became a CRS level 7 community.

#### **ACTION ITEM 20: CONTINUE TO MAP NATURAL HAZARD IMPACTS AND CONTINUE VULNERABILITY ASSESSMENTS**

Lake County should continue to identify the number and type of existing structures, infrastructure, and critical facilities at risk to natural hazards and to map available data and

information. Also, the potential dollar losses from vulnerable hazards should be assessed and used to evaluate potential hazard mitigation projects.

Status: The Village of Round Lake initiated a vulnerability assessment of its public water supply system.

### **ACTION ITEM 21: CONTINUE WITH IDENTIFICATION AND IMPLEMENTATION OF SMC FLOOD MITIGATION PROJECTS**

Based on the findings in Chapter 3 of this ANHMP, it is important for the Lake County SMC to continue with their watershed management efforts for flood mitigation in unincorporated Lake County and within the Lake County municipalities. The SMC should continue making use of their annual funding and available FEMA grant funding to provide flood mitigation. Based on the number of SMC flood problem areas identified, the SMC recognized the Des Plaines River and the Fox River watersheds as priority areas.

#### 1. Priority actions for the **Des Plaines River Watershed** in the next five years include:

- Floodplain buyout program  
Status: Ongoing. Homes in Gurnee and Newport Township are awaiting buyout and demolition.
- Floodplain remapping/studies for Newport Creek, Indian Creek, Bull Creek and Mill Creek  
Status: Ongoing.
- Watershed planning/coordination for Des Plaines River - Phase II, North Mill Creek, Newport Creek, Bull Creek, and Indian Creek  
Status: Ongoing.

Involved communities: Antioch, Beach Park, Buffalo Grove, Green Oaks, Grayslake, Gurnee, Hainesville, Hawthorn Woods, Indian Creek, Kildeer, Lake Forest, Lake Zurich, Libertyville, Lincolnshire, Lindenhurst, Long Grove, Mettawa, Mundelein, Old Mill Creek, Park City, Riverwoods, Round Lake Beach, Round Lake Park, Third Lake, Vernon Hills, Wadsworth, Wheeling, Zion

#### 2. Priority actions for the **Fox River Watershed** in the next five years include:

- Floodplain buyout program  
Status: Ongoing. Homes in Fox Lake and Grant Township are awaiting buyout and demolition.
- Floodplain remapping/studies for Fish Lake Drain, Sequoit Creek, Squaw Creek, and Round Lake Drain/Eagle Creek/Long Lake  
Status: Ongoing.
- Watershed planning/coordination for Fish Lake Drain and Squaw Creek watersheds.  
Status: Ongoing.

Involved communities: Antioch, Barrington, Barrington Hills, Deer Park, Fox Lake, Fox River Grove, Grayslake, Hainesville, Hawthorn Woods, Island Lake, Lake Barrington, Lake Villa, Lake Zurich, Lakemoor, Lindenhurst, Mundelein, North Barrington, Port Barrington, Round Lake, Round Lake Beach, Round Lake Heights, Round Lake Park, Tower Lakes, Wauconda, Volo



3. Priority actions for the **North Branch of the Chicago River Watershed** in the next five years include:

- Increase flood storage capacity and detention  
Status: Ongoing.
- Floodplain buyout program  
Status: Homes in Highland Park are awaiting buyout and demolition.
- Watershed planning/coordination for Skokie River  
Status: Ongoing.
- Flood response/damage assessments  
Status: Ongoing.

Involved communities: Bannockburn, Deerfield, Green Oaks, Gurnee, Highland Park, Highwood, Lake Bluff, Lake Forest, Lincolnshire, Mettawa, Park City, North Chicago, Riverwoods, Waukegan

4. Priority actions for the **Lake Michigan Watershed** in the next five years include:

- Floodplain buyout program  
Status: Ongoing. Two homes in Beach Park were acquired and demolished.
- Floodplain remapping/studies for Kellogg Creek  
Status: Ongoing.
- Watershed planning/coordination for Dead Creek and Kellogg Creek  
Status: Ongoing.
- Flood response/damage assessments  
Status: Ongoing.

Involved communities: Beach Park, Highland Park, Highwood, Lake Forest, Lake Bluff, North Chicago, Wadsworth, Waukegan, Winthrop Harbor, Zion

5. Ongoing and anticipated efforts of the SMC in the next five years for **all four major watersheds** include:

- Flood response/damage assessments  
Status: Ongoing.
- Local drainage project cost-share program  
Status: Continue WMB & SIRF programs. The STOCIP program was introduced by Lake County SMC to fund and enhance local drainage projects.
- Rain gauge program  
Status: Ongoing.
- GIS mapping and countywide base flood elevation layer, LOMA/LOMRs  
Status: Ongoing.
- Implementation of Watershed Development Ordinance (WDO)  
Status: The WDO continues to be administered county-wide.

**ACTION ITEM 22: DEVELOP FLOOD STAGE MAPS**

Flood stage maps should be developed to show varying depths of flooding and the respective area of inundation for floodplain areas within Lake County’s major watersheds. The maps should be developed by watershed based on available hydrologic and hydraulic models. Flood stage maps can be used by all agencies to determine early protection actions.

Status: The communities involved developed flood stage maps as part of other studies and updates of plans. For example, flood inundation maps were made in the Village of Deerfield as part of their Stormwater Master Plan.

Communities involved: Deerfield, Lincolnshire

**ACTION ITEM 23: DEVELOP OR ENHANCE THE COMMUNITY'S SNOW REMOVAL PLAN**

Severe winter storms are a priority hazard for Lake County. People and businesses are impacted by heavy snow and blizzard conditions. Impassable roads are a problem for emergency services. Products and techniques for clearing roads or dealing with icy conditions are changing and newer approaches help protect the environment.

Status: The communities involved have snow removal plans that are updated annually.

Communities involved: Antioch (township), Barrington, Green Oaks, Gurnee, Hawthorn Woods, Highland Park, Lake Zurich, Lincolnshire, North Barrington, North Chicago, Port Barrington, Round Lake Beach, Vernon Hills, Wauconda, Zion

**ACTION ITEM 24: UTILITY TREE TRIMMING**

Trees and branches on power lines is a common hazard. Down power lines can impact significant areas. More attention and better scheduling (rotation) of tree trimming would benefit communities and unincorporated Lake County.

Status: Ongoing

**ACTION ITEM 25: SUMP PUMP DISCONNECTS**

Sump pumps, when operating properly can keep basements dry from rainwater that collects around foundations. In areas of the county, sump pumps discharge directly into the underground sewer system. The discharge contributes to the amount of sanitary sewage that needs to be treated at wastewater treatment plants or contributes to the total runoff that storm sewers need to carry. This action item calls for the disconnection of sump pump discharge from the sewer system(s), and for the discharge to be above ground. This could be to lawns or French drains. Communities should consider changes in regulations to accomplish the disconnects; other communities could consider rebate or other incentive programs.

Status: The Village of Deerfield offers 20% rebate to homeowners that disconnect their storm discharges from the sanitary main. The City of Highland Park offers a discounted rate on the stormwater management fee to residents that do not discharge into the city storm sewer.

Communities involved: Deerfield, Highland Park

**ACTION ITEM 26: CONDUCT LOCAL DRAINAGE STUDIES**

Urban flooding and local drainage issues should be investigated by communities and by the SMC to determine alternatives to reduce the impact of flooding to buildings and infrastructure.

Status: The Village of Hawthorn Woods performed a village-wide analysis of drainage problems in 2016 and it was updated in 2018. The City of Highland Park installed backflow preventers in two of the most flood-prone areas in the City. The Village of Lincolnshire completed a village-wide drainage study to identify projects needed to reduce flooding. Park City has a project with SMC regarding drainage issues and the Dady Slough. The City of Zion completed two studies for improvements to the 26<sup>th</sup> Street detention and to upgrade the 20<sup>th</sup> Street storm system.

Communities involved: The County of Lake, Hawthorn Woods, Highland Park, Lincolnshire, Park City, Zion

**ACTION ITEM 27: INCREASE STORMWATER DETENTION CAPACITY**

Where opportunities are identified, additional stormwater detention capacity should be created. This may include the expansion of storage capacity at existing sites or new sites. While the Lake County WDO required storage of runoff due to developed, a large remedial effort is needed to detain and retain stormwater from older development.

Status: The Army Corps of Engineers conducted a study in the City of Highland Park to identify additional localized storage basins.

Communities involved: The County of Lake, Barrington, Highland Park, Lake Zurich, Round Lake Beach

**ACTION ITEM 28: INVESTIGATE COUNTYWIDE WARNING SYSTEM**

Warning dissemination for natural hazard events is key to protecting life and safety. Some areas of the County have some warning systems in-place. Additional warning systems should be investigated that would be effective for various seasons and various patterns of populated locations (e.g., daytime or nighttime). The investigation should examine alternatives, costs, potential phasing, and so forth.

Status: The Village of Grayslake rehabilitated their siren network and added a sixth siren in the south area of the Village.

Communities involved: Antioch (township), Grayslake, Highland Park, North Chicago, Port Barrington, Round Lake Beach, Wauconda

**ACTION ITEM 29: INVESTIGATE FUTURE CONDITIONS AND THE IMPACT ON DEPTH AND FREQUENCY OF FLOODING**

Future conditions can include new development, redevelopment or changing weather and weather patterns, and should be investigated with recent studies or updates to existing studies to determine potential increases in flood characteristics (depth and extent) and in frequency.

Status: Ongoing

**ACTION ITEM 30: LINCOLNSHIRE CREEK IMPROVEMENTS**

Lincolnshire Creek in Lincolnshire should be studied to identify alternatives to reduce flood losses.

Status: The Village of Lincolnshire completed the Lincolnshire Creek Streambank Stabilization project in the Spring of 2019.

**ACTION ITEM 31: MITIGATE SEPTIC DISCHARGE; LEACHING INTO WATERWAYS**

Maintenance of septic systems is important for the protection of water quality for both surface water and groundwater. Preventing ground water pollution from failing septic systems should be a priority of every community and every homeowner. Contamination of the ground water source can lead to pollution of local wells, lakes, streams, and ponds – exposing family, friends and neighbors to waterborne diseases and other health risks. When a septic system fails, inadequately treated domestic waste can reach the ground water. Bacteria and viruses from human waste can cause dysentery, hepatitis, and typhoid fever. Serious outbreaks of these diseases have been caused by contaminated drinking water. Nitrates and phosphates, also found in domestic wastewater, can cause excessive algae growth in lakes and streams called algal blooms. These blooms cause aesthetic problems and impair other aquatic life. Nitrate is also the cause of methemoglobinemia, or blue baby syndrome, a condition that prevents the normal uptake of oxygen in the blood of young babies.

Status: Lake Barrington routinely posts information regarding groundwater quality on their website and social media. Port Barrington also posts information on their website and in newsletters. They also uphold illicit discharge and water protection area ordinances.

Communities involved: Lake Barrington, Port Barrington, Round Lake Beach

**ACTION ITEM 32: IMPLEMENT THE FEDERAL FLOOD RISK MANAGEMENT STANDARD (FFRMS)**

Executive Order 13690 calls for a flood protection standard for projects implemented with federal funds. New construction and substantial improvements implemented through private developers or property owners must meet the flood standard within the Lake County WDO, which is the base flood elevation plus 2 feet of freeboard. If a federal agency sets a standard because of the FFRMS, that exceeds the WDO standard, then communities must meet the higher standard when federal dollars are included in a community project.

Status: Ongoing

**ACTION ITEM 34: DES PLAINES RIVER NEIGHBORHOOD FLOOD PROTECTION PROJECT**

The Village of Lincolnshire is working to reduce flood losses and impacts to residents in neighborhoods at risk of flooding from the Des Plaines River.

Status: The Village of Lincolnshire deployed pumps numerous times to protect community members and their homes along Lincolnshire Drive from Des Plaines River flooding.

Communities involved: Lincolnshire



**Table 1: Community Adoption of All-Natural Hazard Mitigation Plan**

<b>Community Name</b>	<b>Date of Adoption Resolution</b>	<b>Community Name</b>	<b>Date of Adoption Resolution</b>
Village of Antioch	10/13/2017	Village of Libertyville	10/10/2017
Village of Bannockburn	9/25/2017	Village of Lincolnshire	10/9/2017
Village of Barrington	10/9/2017	Village of Lindenhurst	9/25/2017
Village of Barrington Hills	10/23/2017	Village of Long Grove	9/26/2017
Village of Beach Park	10/30/2017	Village of Mettawa	10/17/2017
Village of Buffalo Grove	9/26/2017	Village of Mundelein	9/25/2017
Village of Deer Park	9/21/2017	Village of North Barrington	2/28/2018
Village of Deerfield	10/2/2017	City of North Chicago	10/16/2017
Village of Fox Lake	9/27/2017	Village of Old Mill Creek	10/10/2017
Village of Fox River Grove	McHenry Co.	City of Park City	9/21/2017
Village of Grayslake	12/5/2017	Village of Port Barrington	9/20/2017
Village of Green Oaks	9/27/2017	Village of Riverwoods	9/19/2017
Village of Gurnee	10/9/2017	Village of Round Lake	10/2/2017
Village of Hainseville	9/26/2017	Village of Round Lake Beach	10/23/2017
Village of Hawthorn Woods	10/23/2017	Village of Round Lake Heights	10/10/2017
City of Highland Park	10/9/2017	Village of Round Lake Park	10/3/2017
City of Highwood	10/10/2017	Village of Third Lake	9/18/2017
Village of Indian Creek	10/10/2017	Village of Tower Lakes	9/18/2017
Village of Island Lake	2/8/2018	Village of Vernon Hills	10/3/2017
Village of Kildeer	9/19/2017	Village of Volo	10/3/2017
Village of Lake Barrington	10/10/2017	Village of Wadsworth	10/3/2017
Village of Lake Bluff	9/25/2017	Village of Wauconda	9/18/2017
City of Lake Forest	10/2/2017	City of Waukegan	2/22/2018
Village of Lake Villa	9/27/2017	Village of Winthrop Harbor	11/7/2017
Village of Lake Zurich	10/6/2017	City of Zion	9/19/2017
Village of Lakemoor	9/20/2017	Lake County	10/10/2017



LAKE COUNTY ALL-NATURAL HAZARDS MITIGATION PLAN  
ANNUAL MEETING  
Thursday, July 29, 2021  
1:00 – 2:30 p.m.  
VIA Zoom

- **Welcome, Introductions** – Sharon Østerby, SMC
- **ANHMP Update for 2022** – Sharon Østerby, SMC
- **Natural Hazard Mitigation Activities** - Sharon Østerby, SMC
  - SMC Floodplain Buyout Program
    - Grant Project Update & Future Funding Opportunities
  - Other Mitigation Efforts (community/watershed-wide initiatives, special projects)
    - 2020 WMB & SIRF Project
    - Other Special Projects (Kurt Woolford)
- **Natural Hazards and Emergency Management Activities 2020 (LCEMA)**
  - LCEMA Review of 2020 Flood Impacts and Improvements (Dan Eder & Paul Mazzino)
- **Review of the Yearly Report Requirements, Action Plan Items** – Sharon Østerby, SMC
  - 2020 Annual Reporting and Community Questionnaires
- **Roundtable of Local Mitigation Activities, Natural Hazard Incidents, Challenges, Lessons Learned**
- **Adjourn**