



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

Lake County, Illinois

**2019 Annual
Evaluation Report**
of 2017 All-Natural Hazard Mitigation Plan

Lake County, Illinois

2019 Annual Evaluation Report

All-Natural Hazards Mitigation Plan

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 January 17, 2020, via Zoom to develop this 2019 Annual Evaluation Report. This report is based on 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

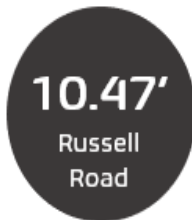
Post-Plan Development & Adoption

There were two notable weather events that occurred in September 2019 in Lake County. On September 3rd, an EF-1 tornado passed through Waukegan. Additionally, significant flooding occurred during the month of September in various communities in Lake County.

The tornado in Waukegan was not deadly, but it did injure one. It touched down for about five minutes in the early evening. Its path was about 3 miles long and 200 yards wide. Ninety mile-per-hour winds caused minor damage to commercial buildings and homes. Many trees were damaged. The storm continued to push through the shore of Lake Michigan and entered the lake where a waterspout was observed.



September 2019 was unusually and excessively wet. Lake County received between 4.4 and 7.3 inches of rainfall from September 8th to 13th with the bulk of the rain coming in the latter few days. Storm drains and sewers could not keep up with the rainfall. Many roadways were inundated with water and closed. Schools were closed due to flooding in the school and/or due to the impassible roadways preventing the operation of bus routes as usual. The Des Plaines River and Fox River crest levels came close to the levels observed in 2017 in some areas.



DES PLAINES RIVER CRESTS

FOX RIVER CRESTS

Status of Action Items

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 January 17, 2020. 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: The Communities involved have incorporated suggestions from the ANHMP into their comprehensive emergency plans.

Communities include Buffalo Grove, Gurnee, Libertyville, Lincolnshire, Barrington, Fox Lake, Beach Park, Deerfield, Highland Park, and Lake County.

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:

- The County of Lake and 49 of the 52 communities have adopted amendments to the WDO effective October 13, 2015.
- The County of Lake and 49 of the 52 communities adopted the amended Appendix C of the WDO, which included a comprehensive list of all FIRMs for the county. For Lake County to remain in good standing with FEMA and their National Flood Insurance Program (NFIP), Lake County adopted revised maps effective February 17, 2016.

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: Communities involved have information posted on their respective websites or send out information in e-newsletters, and e-blasts. Less common alternatives include posts on Facebook and Twitter.

Communities include Barrington, Beach Park, Buffalo Grove, Deerfield, Fox Lake, Green Oaks, Gurnee, Highland Park, Lake Zurich, Lincolnshire, Lindenhurst, Long Grove, P. Barrington, Park City, Round Lake, Round Lake Beach, Tower Lakes, Wadsworth

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.

Communities include Beach Park, Buffalo Grove, Gurnee, Highland Park, Lincolnshire, Long Grove, Port Barrington

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: Ongoing

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 Buffalo Grove's public works has been clearing overgrown culverts and channels to optimize flow. In the Spring of 2019, they completed a large streambank stabilization project on a portion of Buffalo Creek and Aspen Ditch. Additionally, they completed clearing a section of Indian Creek and Aptakisic Creek. Tower Lakes is working on an extensive improvement program to update their aging stormwater drainage infrastructure.

Communities include Barrington, Buffalo Grove, Deerfield, Green Oaks, Gurnee, Highland Park, Lake Zurich, Round Lake, Wadsworth

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. Communities conduct additional procedures following major storm events.

Communities include Highland Park, Lake Zurich, Lincolnshire, Port Barrington, Round Lake, Wadsworth

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: Several communities are participating in the Lake County SMC voluntary buyout program. Acquisition of properties at risk for landslide due to erosion and repetitive flood loss properties are being funded by FEMA PDM and IDNR-OWR Flood mitigation federal/state grant funding to be acquired and demolished. been acquired and demolished and the land returned to open space. Three properties in Gurnee were approved for demolition. One property was demolished in the Village of Green Oaks.

- Des Plaines River Watershed: Gurnee, Libertyville, Lindenhurst, Park City
- Fox River Watershed: Tower Lakes
- North Branch Watershed: Green Oaks, Highland Park
- Lake Michigan Watershed: None
- 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 Barrington completed a 2-year sanitary sewer replacement project which replaced about 5,000 feet of sanitary main and associated service connections in an effort to improve hydraulics and eliminate inflow and infiltration. Old cross connections from combined sewer were eliminated. The Village of Port Barrington added rain gardens and bioswale in a village parking lot near salt storage.

- Des Plaines River Watershed: None
- Fox River Watershed: Barrington, Port Barrington
- North Branch Watershed: Deerfield
- 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: Communities involved with this action item report upkeep of existing safe rooms and/or further investigation for new ones.

Communities involved: Fox Lake, Port Barrington, Round Lake

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. Five of those who responded this year reported continued participation in Tree City USA.

- Des Plaines River Watershed: 2 communities
- Fox River Watershed: 2 communities
- North Branch Watershed: 1 community
- Lake Michigan Watershed: None
- 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: 3 communities
- Fox River Watershed: 3 communities
- North Branch Watershed: None
- Lake Michigan Watershed: None
- 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 Barrington adopted the 2018 International Building Code last year.

- Des Plaines River Watershed: None
- Fox River Watershed: Barrington
- North Branch Watershed: None
- 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 involved communities have sought after funding for various projects in their community.

- Des Plaines River Watershed: Gurnee, Long Grove, Wadsworth
- Fox River Watershed: Lake Zurich, Port Barrington
- North Branch Watershed: None
- Lake Michigan Watershed: None
- 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: Buffalo Grove, Gurnee

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, Buffalo Grove, Gurnee, Wadsworth

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 Villages of Beach Park and Buffalo Grove used a tabletop exercise to update their Emergency Operations Plan. The Village of Wadsworth uses the Connect CTY (Blackboard) emergency notification system.

Communities involved: Beach Park, Buffalo Grove, Gurnee, Wadsworth

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. No change this year.

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: Ongoing

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
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 have been acquired and are awaiting demolition.
- 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 OF 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 Village of Gurnee uses their GIS system to map flood elevations to guide their response to critical road closures and evacuation of critical structures.

Communities involved: Gurnee

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: Buffalo Grove, Gurnee, Lincolnshire, Barrington, Lake Zurich, Highland Park

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.

Communities involved: Deerfield

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 Deerfield conducted studies on Margate Terrace, Woodvale Avenue and Warwick Road most of which will result in the construction of new infrastructure.

Communities involved: The County of Lake, Deerfield

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 Village of Barrington completed a land swap with the Park District which allowed for creation of additional stormwater volume in a known local flood hazard area through their 2017-18 Sanitary Sewer Replacement Project.

Communities involved: The County of Lake, Barrington

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: Ongoing

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 Lincolnshire Creek Streambank Stabilization project is in progress in the Village of Lincolnshire.

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: The Village of Beach Park uses their website and newsletter and public information meetings to educate their residents about best practices.

Communities involved: Beach Park

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

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

Community Name	Date of Adoption Resolution	Community Name	Date of Adoption Resolution
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**
Friday, January 17, 2020
1:00 – 3:00 p.m.
Lake County Central Permit Facility
2nd Floor Conference Room, 500 W. Winchester Rd., Libertyville, IL

Welcome, Introductions – Sharon Østerby, SMC

I. **ANHMP Update 2022**

II. **Natural Hazard Mitigation Activities** – Sharon Østerby, SMC

A. SMC Floodplain Buyout Program

- IDNR Flood Mitigation Program Funding 2018 (12 homes) & 2019 (7 homes)
- FEMA Pre Disaster Mitigation Grant 2017 (4 homes)

B. Other Mitigation Efforts (community/watershed-wide initiatives, special projects)

III. **Break**

IV. **Natural Hazards and Emergency Management Activities 2019**

- January 18-20 Snow event 8+” Lake County
- January 30-31 Record to near record col -26 degrees Lake County setting cold
- February 5-7 Ice Storm .25” accumulation of ice
- February 24 Strong Winds 52 mph at Waukegan Airport-minor wind damage
- April 27 late season snow 5+’ snow
- July 19-20 Record Heat 97 Degrees with 100 heat indices
- September 3 EF1 tornado Waukegan 1 minor injury (vehicle flipped over)
- October 26 flooding 2-4+” rain
- October 31 Record Halloween snow 4-5+” snow
- November 10-12 record cold and snow 4-5” snow/ice and record low of 7 degrees
- November 27 – Windstorm 60+ mph

V. **Review of the Yearly Report Requirements, Action Plan Items** – Sharon Østerby, SMC

A. 2019 Annual Reporting – Spreadsheets due by February 8, 2020

B. Roundtable of Local Mitigation Activities, Natural Hazard Incidents, Challenges, Lessons Learned

VI. **Drawing**

VII. **Adjourn**