

**COOK COUNTY
MULTI-JURISDICTIONAL
HAZARD MITIGATION PLAN
VOLUME 2 - Municipal Annexes**

Northbrook Annex

FINAL

July 2019

Prepared for:



Cook County
Department of Homeland Security and Emergency Management
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Hazard Mitigation Point of Contact

Primary Point of Contact	Alternate Point of Contact
Andrew Carlson, Fire Chief 740 Dundee Rd. Northbrook, IL 60062 Telephone: 815-871-6506, 847-664-4490 Email: Andy.Carlson@northbrook.il.us	Kelly Hamill, Director of Public Works 655 Huehl Rd Northbrook, IL 60062 Telephone: 847-664-4110 Email: kelly.hamill@northbrook.il.us

Jurisdiction Profile

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation:** 1901
- **Current Population:** 33,167 as of the 2018 U.S. Census population estimate.
- **Population Growth:** Based on the data tracked by the U.S. Census bureau, Northbrook has experienced a relatively flat rate of growth. From the year 2000 where the population was 33,435, to the year 2010 where the population was 33,170, the Village's size decreased less than 1%. However, the estimated 2018 population for the Village was 33,167 consistent with the stable population since 2010.
- **Location and Description:** The Village of Northbrook is 25 miles North of Chicago, 17 miles North of O'Hare Airport, 5 miles West of Lake Michigan. The Village is surrounded by four major highways and also utilizes Metra and Pace routes. Northbrook is 13 square miles, and contains 14 public schools and 4 private schools, and 28 places of worship. Northbrook is bordered by Wheeling to the west, Deerfield and Highland Park to the North, Glencoe and Northfield to the east, and Glenview to the south.
- **Brief History:** The earliest recorded residents of the Northbrook area were the Potawatomi tribe. In 1833 the tribe ceded their land in Illinois and the Sherman family bought 159 acres in the northwest quarter of Section 10. This is the site of the Northbrook Central Business District. The town was originally named Shermerville after Mr. Frederick Schermer who donated the land for the first railroad station (Shermer Station and later Shermer Station). By the 1870s the region was a farm town with well-established brickyards. In 1901 following a close referendum, the town was incorporated as Shermerville with about 60 homes and 311 residents. By 1921, residents felt that the Shermerville name had a bad reputation, and the official name of Northbrook was adopted in 1923. At that time there were 500 residents. Northbrook did not grow rapidly until after World War II. In 1940, the population was 1,265, but by 1960 the population was 11,635. Another growth spurt was stimulated by the completion in 1963 of a water line to bring Lake Michigan water to Northbrook's new water treatment plant. By 1970 the population had more than doubled to 25,422.
- **Climate:** Northbrook's climate is typical of the Midwest, which is a humid continental climate. There are four strong seasons with warm to hot summers, cold and snowy winters, and rain in all seasons. Temperatures can rise or drop rapidly; winds can be extreme; and the flow of dry or moist hot air from the subtropics clashing with incoming air from the subarctic can produce deadly tornadoes. In winter, snowstorms can bring heavy lake effect snows to the area. Average summer temperatures are 76 °F with extremes in excess of 100 degrees, and average winter temperatures are 26 °F, with extremes in the negatives. The average annual rainfall is 33 inches, and snowfall is 39 inches.
- **Governing Body Format:** The Village has a Council-Manager form of government which was adopted in 1953 by referendum. The Board is made up of the Village President and six trustees. All are elected for four-year terms on an at-large basis. Also elected for a four-year term is the Village Clerk. The Village has 22 boards, commissions, and task forces, which report to the

Village Board. This body of Government will assume the responsibility for the adoption and implementation of this plan. The Village operates the following departments: finance, fire, police, public works, building, development and planning services, and general government.

- **Development Trends:** Anticipated development levels for Northbrook are low to moderate, consisting of mostly residential development. Residential activity has seen an approximate annual increase of 15% since 2011, while commercial related development has remained relatively flat over the same timeframe. The majority of the development activity in the Village has been for residential additions and alterations. The Village of Northbrook adopted a comprehensive plan in December 2010. The comprehensive plan helps guide land use, transportation and economic development decisions for the Village. Future growth and development opportunities in the community will be managed as identified in plan. Through the development of the remaining vacant commercial land and redevelopment of existing industrial and commercial areas, Northbrook has positioned itself for future new and existing business growth. Northbrook is currently home for the headquarters of internationally known companies such as Underwriters Laboratories, Inc. and Crate & Barrel as well as home for hundreds of local and regional businesses.

Capability Assessment

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in the *Legal and Regulatory Capability Table* below. The assessment of the jurisdiction’s fiscal capabilities is presented in the *Fiscal Capability Table* below. The assessment of the jurisdiction’s administrative and technical capabilities is presented in the *Administrative and Technical Capability Table* below. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in the *National Flood Insurance Program Compliance Table* below. Classifications under various community mitigation programs are presented in the *Community Classifications Table* below.

TABLE: LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	(Updated) Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	Yes	(2006) Ord. 07-46
Zonings	Yes	No	No	Yes	Originally Adopted 1988 Ord. 88- 62; most recent amendments (2012) Ord. 12-68
Subdivisions	Yes	No	No	Yes	(2012) Ord. 12-68
Stormwater Management	Yes	No	No	No	Northbrook’s Master Stormwater Management Plan State regulates industrial activity from Construction sites 1 acre or larger under section 402 CWA. (Amd. 2011)
Post Disaster Recovery	Yes	No	Yes	No	(§8-1)
Real Estate Disclosure	No	No	Yes	Yes	(765 ILCS 77/) Residential Real Property Disclosure Act.

Growth Management	Yes	No	No	No	See Element 9 in Comprehensive Plan; boundary agreements with multiple jurisdictions
Site Plan Review	Yes	No	No	No	(See §6-5) Amended (2007) Ord. 07-46
Public Health and Safety	Yes	No	No	No	Code 1966 (1966)
Environmental Protection	No	No	No	No	
Planning Documents					
General or Comprehensive Plan	Yes	No	No	No	Adopted 2010
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>					Yes
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	Yes	No	Yes	No	MWRD Detailed Watershed Plan
Capital Improvement Plan	Yes	No	No	No	Updated. 2013
<i>What types of capital facilities does the plan address?</i>					Village facilities & infrastructure & vehicles
<i>How often is the plan revised/updated?</i>					Annually
Habitat Conservation Plan	No	No	No	No	
Economic Development Plan	Yes	No	No	No	The Economic Development Commission is charged with reviewing all economic development related programs and incentives including tax

					incentives offered through the Cook County 6b program. Adopted. 2005
Shoreline Management Plan	No	No	No	No	
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	Yes	Yes	No	Northbrook Emergency Operations Plan
Threat and Hazard Identification and Risk Assessment	No	No	Yes	No	Cook County DHSEM Preparing THIRA
Terrorism Plan	Yes	No	Yes	No	Northbrook EOP
Post-Disaster Recovery Plan	Yes	No	Yes	No	Northbrook EOP
Continuity of Operations Plan	Yes	No	Yes	No	Northbrook EOP
Public Health Plans	Yes	No	Yes DIP	No	Northbrook EOP

TABLE: FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Can, but don't
State Sponsored Grant Programs	Yes

Development Impact Fees for Homebuyers or Developers	Yes
Other	

TABLE: ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Director – Development/Planning Services Assistant Director – Development/Planning Services Senior Planner – Development/Planning Services Village Engineer – Public Works Project Manager – Public Works
Engineers or professionals trained in building or infrastructure construction practices	Yes	Village Engineer – Public Works Capital Projects Manager
Planners or engineers with an understanding of natural hazards	Yes	Village Engineer – Public Works Project Manager – Public Works
Staff with training in benefit/cost analysis	Yes	HR Manage
Surveyors	No	
Personnel skilled or trained in GIS applications	Yes	GIS Consortium (Municipal Government Partners)
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Fire Chief/Emergency Manager
Grant writers	Yes	Management Analysts in most departments

TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your jurisdiction?	Public Works, Development/Planning Services
Who is your jurisdiction’s floodplain administrator? (department/position)	Village Engineer/Public Works
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Village Engineer

What is the date of adoption of your flood damage prevention ordinance?	Most recent amendments May 8, 2007
When was the most recent Community Assistance Visit or Community Assistance Contact?	We have not received a Community Assistance Visit
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	None that we are aware of
Do your flood hazard maps adequately address the flood risk within your jurisdiction? (If no, please state why)	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	Training and education is always welcomed.
Does your jurisdiction participate in the Community Rating System (CRS)? If so, is your jurisdiction seeking to improve its CRS Classification? If not, is your jurisdiction interested in joining the CRS program?	Yes, The most recent NFIP CRS Cycle visit occurred on September 10, 2013

TABLE: COMMUNITY CLASSIFICATIONS

	Participating?	Classification	Date Classified
Community Rating System	Yes	Class 7	1995
Building Code Effectiveness Grading Schedule	Yes	Unknown	N/A
Public Protection/ISO	Yes	ISO Class 1	7/1/2017
StormReady	Yes	Gold (Countywide)	2014
Tree City USA	Yes	Participating	1994

Jurisdiction-Specific Natural Hazard Event

The information provided below was solicited from the jurisdiction and supported by NOAA and other relevant data sources.

The *Natural Hazard Events Table* lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: 7
- Number of FEMA-Identified Severe Repetitive Loss Properties: 1
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties That Have Been Mitigated: 1

TABLE: NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment / Event Narrative
Winter Storm		2/5/2019	6.8 inches of snow in Northbrook.
Severe Storms/Flooding		6/9/2018	2.36 inches of rain in Northbrook
Severe Weather	-	9/5/2014	\$25,000 in property damage.
Hail	-	5/12/2014	-
Hail	-	5/12/2014	-
Hail	-	4/12/2014	-
Severe Weather/Wind		11/17/2013	There were two reports of winds estimated to 70 mph near Northbrook. Tree tops were bent horizontally.
Severe Storms/Flooding	DR-4116	4/26/2013	\$22,695
Severe Storms/Flooding		7/23/2011	In Northbrook, 5.33 inches of rain fell and four motorists had to be rescued from vehicles stranded in flood waters.
Severe Winter Storm and Snowstorm	DR-1960	1/31/2011	\$70,000

Winter Storm/Lake Effect Snow			7.4 inches of snow in Northbrook
Severe Storms/Flooding	DR-1935	7/19/2010	-
Severe Storms/Flooding		5/13/2010	2.58 inches of rain fell in Northbrook
Winter Storm		2/9/2010	13.2 inches of snow in Northbrook
Severe Storms/Flooding	DR-1800	9/13/2008	In Northbrook, an overflowing stream flooded Green Park.
Winter Storm		3/21/2008	6.5 inches of snow in Northbrook
Winter Storm		12/5/2007	6.9 inches of snow in Northbrook
Severe Weather/Wind		9/25/2007	More than 50 trees were snapped or damaged throughout Northbrook.
Severe Storms/Flooding	DR-1729	8/20/2007	-
Severe Storms/Flooding		10/2/2006	Edens Expressway closed near Willow Road from flooding, 2.74 inches of rain measured in Northbrook
Illinois Hurricane Katrina Evacuation	EM-3161	9/7/2005	-
Hail		7/17/2003	Tennis ball size hail was reported in Northbrook.
Wind		2/25/2001	Wind damage at construction sites
Illinois Severe Winter Storm	EM-3134	12/11/2000	-
Severe Weather/Wind		5/18/2000	Windows were blown out at the Allstate Insurance building in Northbrook.
Illinois Winter Snow Storm	EM-3068	1/1/1999	-
Severe Weather/Wind		6/18/1998	The gym roof at Field School in Northbrook was peeled off
Flooding	DR-1188	8/16/1997	-

Flooding	DR-1129	7/17/1996	-
Flooding	DR-997	4/13/1993	-
Severe Storms/Flooding	DR-798	8/13/1987	-
Severe Storms/Flooding	DR-776	9/21/1986	-
Severe Storms/Flooding/Tornadoes	DR-643	6/30/1981	-
Illinois Blizzards and Snowstorms	EM-3068	1/16/1979	-

Jurisdiction-Specific Hazards and Impacts

Hazards that represent a county-wide risk are addressed in the Risk Assessment section of the 2019 Cook County Multi-Jurisdictional Hazard Mitigation Plan Update. This section only addresses the hazards and their associated impacts that are **relevant** and **unique** to the municipality.

Flood: Our flood-prone areas are identified in our Master Stormwater Management Plan.

Wind and Tornado: Wind, especially in conjunction with thunderstorms, has done considerable damage in the area.

Severe Cold and Winter Storms: Snowfall can reach high levels during storms in the area. In addition to winter storms, lake effect snow can impact the area.

Hazard Risk Ranking

The *Hazard Risk Ranking Table* below presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

TABLE: HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Weather	54
2	Severe Winter Weather	54
3	Earthquake	32
4	Tornado	21
5	Flood	18
6	Dam Failure	3
7	Drought	2

Mitigation Strategies and Actions

The heart of the mitigation plan is the mitigation strategy, which serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose, or mission, of the planning process. In this section, mitigation actions/projects were updated/amended, identified, evaluated, and prioritized. This section is organized as follows:

- New Mitigation Actions - New actions identified during this 2019 update process
- Ongoing Mitigation Actions - Ongoing actions with no definitive end or that are still in progress. During the 2019 update, these "ongoing" mitigation actions and projects were modified and/or amended, as needed.
- Completed Mitigation Actions - An archive of all identified and completed projects, including completed actions since 2014.

The *Hazard Mitigation Action Plan Matrix Table* below lists the actions that make up the jurisdiction’s hazard mitigation plan. The *Mitigation Strategy Priority Schedule Table* identifies the priority for each action.

TABLE: HAZARD MITIGATION ACTION PLAN MATRIX						
Status	Hazards Mitigated	Objectives Met	Lead Agencies	Estimated Cost	Sources of Funding	Timeline/Projected Completion Date (a)
Action N3.1 —Integrate the hazard mitigation plan into other plans, ordinances, or programs to dictate land uses within the jurisdiction						
Ongoing	All	3, 4, 6, 10, 13	Fire, Public Works	Low	Local	Ongoing
Action N3.2 —Update the municipality’s emergency operations center						
Ongoing	All	1, 2, 5, 8	Fire	Low	Local	Short-term
Action N3.3 —Increase capability for snow removal.						
Ongoing	Severe Winter Weather	1, 6, 11	Public Works	High	FEMA Hazard Mitigation Grant Funds	Long-term
Action N3.4 —Strive to capture perishable data after significant hazard events to support future updates to the risk assessment of this plan						

Ongoing	All	3, 6, 8	Planning, Public Works	High	General revenue, FEMA Grants	Long-term and ongoing
Action N3.5 —Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.						
Ongoing	Flood	3, 4, 6, 7, 9	Planning, Public Works	Low	Local	Ongoing
Action N3.6 —Consider the development of a post-disaster action plan, including a debris management plan						
Ongoing	All	1, 6, 8	Public Works	Low	Local	Long-term
Action N3.7 —Maintain the municipality’s tornado warning system						
Ongoing	Severe Weather, Tornado	1, 5, 6, 12	Police, Fire	Low	Local	Ongoing
Action N3.8 —Continue to support the county-wide actions identified in this plan						
Ongoing	Multi- Hazard	All	All Departments	Low	Local	Ongoing
Action N3.9 —Establish and continue partnerships between public and private sectors including CERT						
Ongoing	Multi- Hazard	3, 6, 8, 13	All Departments	Low	Local	Ongoing
Action N3.10 —Strive to implement processes or structures to protect high-risk areas affected by floods						
Ongoing	Flood	2, 3, 6, 7, 9, 10	Planning, Public Works	High	General revenue, Grants	Long-term
Action N3.11 —Actively participate in the plan maintenance strategy identified in this plan.						
Ongoing	All	3, 4, 6	DHSEM, Village	Low	General Revenue	Short-term
Action N3.12 —Implement Blackthorne Lane Stormwater Project- Improve street drainage collection system.						
New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$263,000; Low	Bonds	October 2019

Action N3.13 —Implement Williamsburg Drive/Old Post Road Stormwater Management Project (Master Stormwater Management Plan Project 21).						
New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$270,000; Low	Grants, Local Funds	2025
Action N3.14 —Implement Brittany Road Stormwater Management Project (Master Stormwater Management Plan Project 24).						
New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$319,870; Low	Grants, Local Funds	2020
Action N3.15 —Implement Dehne Subdivision Stormwater Management Project (Master Stormwater Management Plan Project 24).						
New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$420,35; Low	Grants, Local Funds	2019
Action N3.16 —Implement First Street/Center Avenue Stormwater Management Project (Master Stormwater Management Plan Project 24).						
New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$567,000; Low	Grants, Local Funds	2021
Action N3.17 —Implement Landwehr Road/Sunset Trail Intersection Stormwater Management Project (Master Stormwater Management Plan Project 26).						
New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$525,250; Low	Grants, Local Funds	2021
Action N3.18 —Implement Longvalley Drive Stormwater Management Project (Master Stormwater Management Plan Project 27).						
New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$16,440; Low	Grants, Local Funds	2019
Action N3.19 —Implement Second Street Culvert Replacement.						
New	Flood	2, 3, 4, 7, 12, 13	Village of Northbrook	\$373,933; Low	Grants, Local Funds	2020
Action N3.20 —Implement Surrey Lane Stormwater Management Project (Master Stormwater Management Plan Project 28).						
New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$130,902; Low	Grants, Local Funds	2020
Action N3.21 —Implement Wendy Drive Stormwater Management Project (Master Stormwater Management Plan Project 28).						

New	Flood	2, 3, 4, 12, 13	Village of Northbrook	\$765,000; Low	Grants, Local Funds	2020
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a. Ongoing indicates continuation of an action that is already in place. Short-term indicates implementation within five years. Long-term indicates implementation after five years.

TABLE: MITIGATION STRATEGY PRIORITY SCHEDULE

Action Number	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Priority (a)
1	13	High	Low	Yes	No	Yes	High
2	4	High	Medium	Yes	Yes	Yes	High
3	3	Medium	High	No	No	No	Low
4	3	High	Medium	Yes	No	Yes	Medium
5	5	Medium	Low	Yes	Yes	Yes	High
6	3	Medium	Low	Yes	No	Yes	High
7	4	High	Medium	Yes	Yes	Yes	High
8	13	High	Low	Yes	No	Yes	High
9	4	Medium	Low	Yes	No	Yes	High
10	6	High	High	Yes	Yes	No	High
11	3	High	Low	Yes	Yes	Yes	High
12	5	Medium	Low	Yes	Yes	Unknown	Medium
13	5	High	Low	Yes	Yes	Unknown	High
14	5	High	Low	Yes	Yes	Unknown	High
15	5	High	Low	Yes	Yes	Unknown	High
16	5	High	Low	Yes	Yes	Unknown	High
17	5	High	Low	Yes	Yes	Unknown	High
18	5	High	Low	Yes	Yes	Unknown	High
19	6	High	Low	Yes	Yes	Unknown	High
20	5	High	Low	Yes	Yes	Unknown	High

21	5	High	Low	Yes	Yes	Unknown	High
a. See Chapter 1 for explanation of priorities							

New Mitigation Actions

The following are new mitigation actions created during the 2019 update.

Action N-3.12

Mitigation Action	Implement Blackthorne Lane Stormwater Project- Improve street drainage collection system
Year Initiated	2019
Applicable Jurisdiction	Northbrook
Lead Agency/Organization	Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> • Protect the lives, health, safety, and property of the citizens of Cook County from the impacts of natural hazards.
Applicable Objective	<ul style="list-style-type: none"> • Increase the resilience of (or protect and maintain) infrastructure and critical facilities. • Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. • Integrate hazard mitigation policies into land use plans in the planning area. • Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. • Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Bonds
Estimated Cost	\$263,000
Benefits (loss avoided)	Reduces structure and property flooding
Projected Completion Date	October 2019
Priority and Level of Importance (Low, Medium, High)	Medium Priority
Benefit Analysis (Low, Medium, High)	Medium – Project will have a long-term impact on the reduction of risk exposure for life and property, or project will provide an immediate reduction in the risk exposure for property.
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description

Action/Implementation Plan and Project Description:

Mitigation Action and Project Maintenance		
Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action N-3.13

Mitigation Action	Implement Williamsburg Drive/Old Post Road Stormwater Management Project (Master Stormwater Management Plan Project 21).
Year Initiated	2022
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards
Applicable Objective	
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$270,000
Benefits (loss avoided)	12 properties will experience a reduction in flooding. 2 of the 12 properties currently experience structure flooding. Staff anticipates that this project will create a reduction in structure flooding for these properties.
Projected Completion Date	2025
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	This project involves replacing the existing drainage system at and near the intersection of Williamsburg Drive and Old Post Road. A flood overflow relief storm sewer will be constructed from Old Post to the Revere Drive Basin on new drainage easements. This project will also involve improvements to the inlets on the cul-de-sac on Old Post.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2019	New	
2020		
2021		

2022		
2023		

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action N-3.14

Mitigation Action	Implement Brittany Road Stormwater Management Project (Master Stormwater Management Plan Project 24)
Year Initiated	2019
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards
Applicable Objective	<ul style="list-style-type: none"> Increase the resilience of (or protect and maintain) infrastructure and critical facilities. Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. Integrate hazard mitigation policies into land use plans in the planning area. Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$319,870
Benefits (loss avoided)	This project will impact Brittany Road between Bourdeaux Drive and Dauphine Avenue. 6 properties will experience a reduction in property flooding. 1 property currently experiences structure flooding. Staff anticipates that this project will create a reduction in structure flooding for this property.
Projected Completion Date	2020
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.

Actual Completion Date	
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Recommended Mitigation Action/Implementation Plan and Project Description

Action/Implementation Plan and Project Description:	This project involves supplementing the existing 42-inch storm sewer by constructing approximately 375 feet of 48-inch storm sewer to drain the low area on Brittany Road to the 48-inch storm sewer outlet on Bordeaux Road. The lower inlets within the flood prone area will be disconnected from the existing storm sewer and reconnected to the 48-inch storm sewer. The inflow capacity will be increased by adding inlets. A downstream control structure will be constructed. Currently, this area experiences street, front yard and reported structure flooding.
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Mitigation Action and Project Maintenance

Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards

	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion

	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action N-3.15

Mitigation Action	Implement Dehne Subdivision Stormwater Management Project (Master Stormwater Management Plan Project 24)
Year Initiated	2019
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards
Applicable Objective	<ul style="list-style-type: none"> Increase the resilience of (or protect and maintain) infrastructure and critical facilities. Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. Integrate hazard mitigation policies into land use plans in the planning area. Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$420,350
Benefits (loss avoided)	This project will impact Dehne Road and Brentwood Road. 8 properties will experience a reduction in property flooding. No properties are currently impacted by structure flooding.
Projected Completion Date	2019
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	This project involves improving conveyance by replacing damaged culverts and regrading the ditches along Dehne and Brentwood Roads. The project will also improve collection capacity through the installation of inlets along Brentwood Road and replacement of the existing 15-inch storm sewer from Penfold Place to Summertown Place. Currently, this area experiences front yard, rear yard and street flooding with water flowing across Dehne Road.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action N-3.16

Mitigation Action	Implement First Street/Center Avenue Stormwater Management Project (Master Stormwater Management Plan Project 24)
Year Initiated	2020
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> • Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards
Applicable Objective	<ul style="list-style-type: none"> • Increase the resilience of (or protect and maintain) infrastructure and critical facilities. • Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. • Integrate hazard mitigation policies into land use plans in the planning area. • Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. • Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$567,000
Benefits (loss avoided)	This project will impact the 2000 block of Center Avenue, 2000 block of Walters Avenue and 1300 block of First Street. 10 properties will experience a reduction in property flooding.
Projected Completion Date	2021
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	This project involves construction of a relief sewer from the First Street/Center Avenue intersection along First Street to the Village Hall/Library Campus detention facility. As part of this project, the Center Avenue storm sewer will be disconnected from the First Street southern outlet. Additionally, a new low flow storm sewer will be constructed and connected to the First Street storm sewer with an acquired easement to reduce backyard flooding. Finally, the project will help mitigate downstream impacts by oversizing the installation of the relief sewer.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action N-3.17

Mitigation Action	Implement Landwehr Road/Sunset Trail Intersection Stormwater Management Project (Master Stormwater Management Plan Project 26)
Year Initiated	2019
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards
Applicable Objective	<ul style="list-style-type: none"> Increase the resilience of (or protect and maintain) infrastructure and critical facilities. Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. Integrate hazard mitigation policies into land use plans in the planning area. Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$525,250
Benefits (loss avoided)	This project will impact the 2300 block of Landwehr Road, 2300 block of Ridge Drive and 3200 block of Sunset Trail. 8 properties will experience a reduction in flooding. 1 of the 8 properties currently experiences structure flooding. Staff anticipates that this project will create a reduction in structure flooding for this property.
Projected Completion Date	2021
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property

Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	This project involves the replacement of storm sewer along Landwehr Road, Ridge Drive, Sunset Trail and Floral Drive. Additionally, this project includes regrading and shaping of ditches.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action N-3.18

Mitigation Action	Implement Longvalley Drive Stormwater Management Project (Master Stormwater Management Plan Project 27)
Year Initiated	2019
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards
Applicable Objective	<ul style="list-style-type: none"> Increase the resilience of (or protect and maintain) infrastructure and critical facilities. Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. Integrate hazard mitigation policies into land use plans in the planning area. Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$16,440
Benefits (loss avoided)	This project will impact the Longvalley Drive and Longvalley Court intersection. 8 properties will experience a reduction in property flooding. 1 property currently experiences structure flooding. Staff anticipates that this project will create a reduction in structure flooding for this property.
Projected Completion Date	2019
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.

Actual Completion Date	
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Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	This project involves improving the intersection drainage collection system by increasing inlet capacity.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action N-3.19

Mitigation Action	Implement Second Street Culvert Replacement
Year Initiated	2019
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> • Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards • Develop and implement sustainable, cost-effective and environmentally sound risk-reduction (mitigation) projects
Applicable Objective	<ul style="list-style-type: none"> • Increase the resilience of (or protect and maintain) infrastructure and critical facilities. • Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. • Integrate hazard mitigation policies into land use plans in the planning area. • Retrofit, purchase, or relocate structures in high hazard areas, including those known to be repetitively damaged. • Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. • Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$373,933
Benefits (loss avoided)	This project will be replace a degrading corrugated metal culvert and make several drainage improvements to reduce street flooding in this area. This improvements will also improve conveyance of stormwater.
Projected Completion Date	2020
Priority and Level of Importance (Low, Medium, High)	High Priority

Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description

Action/Implementation Plan and Project Description:	The culvert under Second Street is a corrugated metal pipe structure that allows stormwater to flow from the Techny Drain underneath the roadway. The culvert has begun to show signs of degradation and is in need of replacement. This project also includes replacing an existing pipe to the east of the culvert with a new, improved design and returning the area to the west to an open channel with native plantings.
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Mitigation Action and Project Maintenance

Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards

	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic

	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action N-3.20

Mitigation Action	Implement Surrey Lane Stormwater Management Project (Master Stormwater Management Plan Project 28)
Year Initiated	2019
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards
Applicable Objective	<ul style="list-style-type: none"> Increase the resilience of (or protect and maintain) infrastructure and critical facilities. Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. Integrate hazard mitigation policies into land use plans in the planning area. Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$130,902
Benefits (loss avoided)	This project will impact the Surrey Lane cul-de-sac. 7 properties will experience a reduction in property flooding. No properties are currently impacted by structure flooding.
Projected Completion Date	2020
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	This project involves constructing stormwater improvements at the Surrey Lane cul-de-sac, including a conveyance storm sewer from the cul-de-sac to the Lee Road existing storm sewer and a low/flood overflow structure at the east side of the Surrey Lane cul-de-sac with a restrictor plate. Also, a relief swale will be constructed within the drainage easement. Two inlets will be added within the cul-de-sac area to improve drainage. A short segment of the Lee Road storm sewer system will be modified to accommodate the new storm sewer and flood overflow path. Currently, this area experiences cul-de-sac, front yard and rear yard flooding.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees

	Hazardous Materials Incident
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Action N-3.21

Mitigation Action	Implement Wendy Drive Stormwater Management Project (Master Stormwater Management Plan Project 28)
Year Initiated	2019
Applicable Jurisdiction	Village of Northbrook
Lead Agency/Organization	Village of Northbrook
Supporting Agencies/Organizations	
Applicable Goal	<ul style="list-style-type: none"> • Protect the lives, health, safety and property of the citizens of Cook County from the impacts of natural hazards
Applicable Objective	<ul style="list-style-type: none"> • Increase the resilience of (or protect and maintain) infrastructure and critical facilities. • Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. • Integrate hazard mitigation policies into land use plans in the planning area. • Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. • Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Grants, Local Funds
Estimated Cost	\$765,000
Benefits (loss avoided)	This project will impact the 1100-1200 blocks of Wendy Drive. 10 properties will experience a reduction in property flooding.
Projected Completion Date	2020
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High – Project will provide an immediate reduction of risk exposure for life and property
Cost Analysis (Low, Medium, High)	Low – The project could be funded under the existing budget. The project is part of or can be part of an on-going existing program.
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description

Action/Implementation Plan and Project Description:	This project involves installation of inlets and inlet structures along Wendy Drive as well as the establishment of an overflow flood route or the establishment of a detention facility.
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Mitigation Action and Project Maintenance		
Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Ongoing Mitigation Actions

The following are ongoing actions with no definitive end or that are still in progress. During the 2019 update, these "ongoing" mitigation actions and projects were modified and/or amended, as needed.

Action N-3.1

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.1	Integrate the hazard mitigation plan into other plans, ordinances, or programs to dictate land uses within the jurisdiction	
Status Description: Yes	Flood plain regulations incorporated into the Village's Zoning Code and Engineering Standards Manual preventing development in the identified flood zone areas.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action N-3.2

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.2	Update the municipality's emergency operations center	
Status Description: Yes	Recent table top exercises have identified the need to continually review and update the EOC as technology changes. They have also helped identify the need for a backup EOC.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action N-3.3

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.3	Increase capability for snow removal.	
Status Description: Yes	The Village continues to evaluate and invest in snow removal training and equipment, including the use of chemicals for pre-treatment of roadways prior to storms and snow fall.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action N-3.4

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.4	Strive to capture perishable data after significant hazard events to support future updates to the risk assessment of this plan	
Status Description: Yes	Improvements have been made to storm responses through the utilization of mobile devices, online service request and integration in GIS.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action N-3.5

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.5	Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.	
Status Description: Yes	The Village actively is improving flood related infrastructure with the planning and construction of storm water improvement projects. The Village also actively participates in the Community Rating System that is part of the National Flood Insurance Program.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

Action N-3.6

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.6	Consider the development of a post-disaster action plan, including a debris management plan	
Status Description: Yes	The Village's EOP identifies the Recovery Checklist and a more comprehensive post-disaster plan is on-going.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

Action N-3.7

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.7	Maintain the municipality’s tornado warning system	
Status Description: Yes	Tornado warning system is properly maintained by a third party and tested at two initiation locations on the first Tuesday of every month.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action N-3.8

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.8	Continue to support the county-wide actions identified in this plan	
Status Description: Yes	The Village has collaborated and worked with Cook County Department of Homeland Security and Emergency Management in planning and executing local drills pertaining to the plan. The Village participates in NIPSTA exercises which help emphasize Village and mutual response.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action N-3.9

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.1	Establish and continue partnerships between public and private sectors including CERT	
Status Description: Yes	Partnerships continue to grow. Community CERT program and team members are active and engaged. CERT Team augments fire and police operations as appropriate.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action N-3.10

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.10	Strive to implement processes or structures to protect high risk areas affected by floods	
Status Description: Yes	The village continues to completed comprehensive flood reduction projects within the Village.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action N-3.11

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# N-3.11	Actively participate in the plan maintenance strategy identified in this plan.	
Status Description: Yes	A proactive maintenance program has been established for this plan by the Emergency Manager, including a quarterly review of the plan.	O
<p align="center">Completion status legend:</p> <p align="center"> N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken </p>		

Completed Mitigation Actions

Northbrook has no completed actions at this time.

Future Needs to Better Understand Risk/Vulnerability

No needs have been identified at this time.

Additional Comments

No additional comments at this time

HAZUS-MH Risk Assessment Results

NORTHBROOK EXISTING CONDITIONS	
2010 Population	33,170
Total Assessed Value of Structures and Contents	\$9,260,807,910
Area in 100-Year Floodplain	372.03 acres
Area in 500-Year Floodplain	464.52 acres
Number of Critical Facilities	129

HAZARD EXPOSURE IN NORTHBROOK						
	Number Exposed		Value Exposed to Hazard		Total	% of Total Assessed Value Exposed
	Population	Buildings	Structure	Contents		
Dam Failure						
Buffalo Creek	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #2	0	0	\$0	\$0	\$0	0.00%
Touhy	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #3	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #4	0	0	\$0	\$0	\$0	0.00%
Flood						
100-Year	75	23	\$32,861,912	\$29,932,791	\$62,794,703	0.68%

500-Year	247	76	\$77,878,993	\$71,172,090	\$149,051,083	1.61
Tornado						
100-Year	—	—	\$349,333,131	\$277,959,30	\$627,292,438	6.77%
500-Year	—	—	\$912,467,572	\$456,636,683	\$1,369,104,255	14.78%

ESTIMATED PROPERTY DAMAGE VALUES IN NORTHBROOK				
	Estimated Damage Associated with Hazard			% of Total Assessed Value Damaged
	Building	Contents	Total	
Dam Failure				
Buffalo Creek	\$0	\$0	\$0	0.00%
U. Salt Cr. #2	\$0	\$0	\$0	0.00%
Touhy	\$0	\$0	\$0	0.00%
U. Salt Cr. #3	\$0	\$0	\$0	0.00%
U. Salt Cr. #4	\$0	\$0	\$0	0.00%
Earthquake				
1909 Historical Event	\$13,786,377	\$2,515,598	\$16,301,975	0.18%
Flood				
10-Year	\$0	\$0	\$0	0.00%
100-Year	\$678,822	\$1,424,486	\$2,103,308	0.02%
500-Year	\$4,706,327	\$11,443,604	\$16,149,931	0.17%

Tornado				
100-Year	\$34,933,313	\$27,795,931	\$62,729,244	0.68%
500-Year	\$133,220,266	\$66,668,956	\$199,889,221	2.16%

Hazard Mapping





