

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

**Bellwood Annex**

**FINAL**

July 2019

Prepared for:



Cook County  
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## Hazard Mitigation Point of Contact

Primary Point of Contact	Alternate Point of Contact
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## Jurisdiction Profile

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

- **Date of Incorporation:** 1900
- **Current Population:** The US Census 2016 for population was 19,107.
- **Population Growth:** Based on population changes from 2010 to 2016, there was a 0.27 percent increase, indicating Bellwood’s population has remained stable.
- **Location and Description:** Bellwood is a suburb of Chicago in Cook County, located 14 miles directly west of downtown Chicago. Suburbs adjacent to Bellwood include: Stone Park, Northlake, and Melrose Park to the north, Broadview and Westchester to the south, Maywood to the east, and Berkeley and Hillside to the east. Interstate 290 runs across the southern border of Bellwood and intersects with 294 just 2 miles west of the Village boundaries. Bellwood is ideally located 12 minutes from Chicago and a mere 13 minutes from O’Hare Airport. According to the U.S. Census Bureau, Bellwood has a total land area of 2.40 square miles.
- **Brief History:** Consisting primarily of level prairie, the area now known as Bellwood was mainly farmland until the early 1890s when the first two subdivisions were established. The first subdivision attracted a handful of businesses, including several taverns. Tavern owners were the first to push for incorporation in response to dry Maywood’s attempt to annex the subdivision. The village of Bellwood was incorporated on May 21, 1900, taking the name of a second early subdivision, Bellwood. Bellwood’s population grew steadily between 1900 and 1930. The 1910 population of 943 doubled by 1920 as more people, many of German and Russian descent, moved to the village. The 1926 annexation of land west of Mannheim Road, plus continued migration, accounted for the jump to 4,991 residents in 1930. After World War II, large industries, several of which became major employers in the near western suburbs, located in the eastern part of the village along the Indiana Harbor Belt tracks. Rail passenger service, available via the Chicago, Aurora & Elgin Railway and the Chicago & North Western Railway, encouraged residential development in other parts of Bellwood. The completion of the Eisenhower Expressway in the 1950s made Bellwood’s location even more attractive for prospective commuters. The population jumped to 8,746 in 1950, then more than doubled to 20,729 in 1960, and included people of Italian, Serbian and Polish descent. Construction slowed considerably as little vacant land remained, and the population rose in 1970 to 22,096 residents. In the 1960s, Bellwood took great pride in the race to the moon by watching native son and astronaut Eugene Cernan travel to space several times before his spectacular landing on the moon in the early ‘70s. His footprints are the last ones left on the lunar surface. Cernan was raised on the 900 block of Marshall Avenue. In his autobiography, “Last Man on the Moon,” he described his affection for Bellwood and noted that the small size of his family home provided excellent training for the cramped quarters of a lunar module. The 1970s brought racial change and involvement in a U.S. Supreme Court case. In 1975, Bellwood filed a lawsuit accusing a local real estate firm of racial steering. Four years later, a landmark ruling by the Supreme Court granted municipalities the legal right to use testers and to sue when discrimination occurred. Bellwood’s black population grew from 1.1 percent in 1970 to 35 percent in 1980 and to 70 percent in 1990. Today, Bellwood, with its many brick bungalows and ranch and Georgian

homes, has matured. But in many respects it remains the largely residential suburb that it has been for the last 50 years.

- **Climate:** The climate in the Village of Bellwood is typical for the mid-west. Average rainfall is 32 inches and the average snow fall is 24 inches annually. The July high temperature is 83 degrees and the January low temperature is 11 degrees. The comfort index, which is based on humidity during hot months, is 46, which is close to the national average of 44.
- **Governing Body Format:** The Village of Bellwood is governed by a Mayor, Clerk and six trustees. This body of Government will assume the responsibility for the adoption and implementation of this plan. It consists of nine departments including: Bellwood Office of Emergency Management, Building, Community Development/Human Resources, Finance, Fire, Police, Public Services, Water, Zoning. The Village of Bellwood's seven committees assist the mayor and village board in developing and reviewing various policies.
- **Development Trends:** New development trends can be characterized as low. The community is landlocked with little to no room for expansion. Redevelopment is the primary focus of the Village Bellwood. Plans for improving the Mannheim road corridor and St. Charles road area are currently underway. The village is serviced by a Metra railroad station with commuter service to Chicago. In November 2011, Union Pacific Railroad announced plans to renovate and upgrade Bellwood's Metra station and add a third rail line. The project, estimated at \$4 million, was expected to be completed by the fall of 2012 at no cost to residents.

## 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.

<b>TABLE: LEGAL AND REGULATORY CAPABILITY</b>					
	<b>Local Authority</b>	<b>State or Federal Prohibitions</b>	<b>Other Jurisdictional Authority</b>	<b>State Mandated</b>	<b>Comments</b>
<b>Codes, Ordinances &amp; Requirements</b>					
Building Code	Yes	No	No	Yes	IBC 2006 11-26-08
Zonings	Yes	No	No	Yes	BMC, Title 15, Chapter 156 3-14-07
Subdivisions	Yes	No	No	No	BMC, Title 15, Chapter 154, 6-20-07
Stormwater Management	Yes	No	Yes	Yes	BMC, Title 15, Ordinance 11-35 8-17-11
Post Disaster Recovery	Yes	No	No	No	N/A
Real Estate Disclosure	Yes	No	Yes	Yes	Chapter 101 Village of Bellwood Municipal Code 1-24-07
Growth Management	Yes	No	No	No	N/A
Site Plan Review	Yes	No	No	No	Chapter 154 Village of Bellwood Municipal Code 6-20-07

Public Health and Safety	Yes	No	Yes	Yes	BMC, Title 9, Chapter 96, 9-18-13
Environmental Protection	Yes	No	No	No	BMC, Title 9, Chapter 100
<b>Planning Documents</b>					
General or Comprehensive Plan	Yes	No	No	No	Ordinance 13-29, 11-20-13
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>					N/A
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	Yes	No	No	No	Chapter 152 Village of Bellwood Municipal code 5-9-07 Amended 7-6-08
Capital Improvement Plan	No	No	No	No	
<i>What types of capital facilities does the plan address?</i>					N/A
<i>How often is the plan revised/updated?</i>					N/A
Habitat Conservation Plan	No	No	No	No	
Economic Development Plan	No	No	Yes	No	N/A
Shoreline Management Plan	No	No	No	No	N/A
<b>Response/Recovery Planning</b>					
Comprehensive Emergency Management Plan	No	No	Yes	Yes	DHSEM
Threat and Hazard Identification and Risk Assessment	No	No	Yes	No	Cook County DHSEM Preparing THIRA
Terrorism Plan	No	No	Yes	No	DHSEM
Post-Disaster Recovery Plan	No	No	No	No	

Continuity of Operations Plan	No	No	Yes	No	DHSEM
Public Health Plans	No	No	Yes	No	Cook County public health

**TABLE: FISCAL CAPABILITY**

<b>Financial Resources</b>	<b>Accessible or Eligible to Use?</b>
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	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

**TABLE: ADMINISTRATIVE AND TECHNICAL CAPABILITY**

<b>Staff/Personnel Resources</b>	<b>Available?</b>	<b>Department/Agency/Position</b>
Planners or engineers with knowledge of land development and land management practices	Yes	Hancock Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Hancock Engineering
Planners or engineers with an understanding of natural hazards	No	N/A
Staff with training in benefit/cost analysis	No	N/A
Surveyors	No	N/A



Personnel skilled or trained in GIS applications	Yes	Cook County GIS Consortium
Scientist familiar with natural hazards in local area	No	N/A
Emergency manager	Yes	Mark Walsh Bellwood Office of Emergency Management
Grant writers	Yes	Tonita LeShore

**TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

What department is responsible for floodplain management in your jurisdiction?	Building Department
Who is your jurisdiction’s floodplain administrator? (department/position)	Village Comptroller (by ordinance)
Are any certified floodplain managers on staff in your jurisdiction?	None
What is the date of adoption of your flood damage prevention ordinance?	05-09-07
When was the most recent Community Assistance Visit or Community Assistance Contact?	May 25, 2011
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
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?	Yes, floodplain management training.
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?	No

**TABLE: COMMUNITY CLASSIFICATIONS**

	Participating?	Classification	Date Classified
Community Rating System	No	--	--
Building Code Effectiveness Grading Schedule	Yes	4	3-1-13

Public Protection/ISO	Yes	4	3-1-13
StormReady	Yes	Gold (Countywide)	2014
Tree City USA	No	N/A	N/A

## 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: 214
- Number of FEMA-Identified Severe Repetitive Loss Properties: 1
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties That Have Been Mitigated: 0

Type of Event	FEMA Disaster Number (if applicable)	Date	Preliminary Damage Assessment
Flood	-	6/1/2019 - 6/30/2019	
Flash Flood	-	6/24/2014	-
Severe Winter Weather	-	12/20/2013 - 3/17/2014	-
Flood	DR-4116	4/18/2013	-
Flood	DR-1935	7/24/2010	-
Blizzard	-	1/1/1999	-
Flood	-	8/5/1989	-
Blizzard	-	1/16/1979	-
Tornado	DR-509	6/18/1976	-

### 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:** We have experienced roadway flooding at Main Street. Village Hall has also experienced flooding due to the creek nearby. In addition, we have experienced flooding along the creek onto the highway.

**Extreme Heat:** Our town is particularly susceptible to the impacts of extreme heat because of our community's large elderly population ([10% are 65 or older](#)).

**Extreme Cold:** Similar to the case of extreme heat, our large elderly population renders our town vulnerable to extreme cold.

**Severe Weather, Wind, and Tornado:** In 2006, trees and tree limbs were blown down at the intersection of 22nd and Madison due to severe wind.

**Earthquake:** While no occurrence has happened, given the magnitude of the impact an earthquake would have on the area, public preparedness through awareness on preventative measures can be increased.

## 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.

<b>TABLE: HAZARD RISK RANKING</b>		
<b>Rank</b>	<b>Hazard Type</b>	<b>Risk Rating Score (Probability x impact)</b>
1	Flood	45
2	Tornado	42
3	Severe Winter Weather	42
4	Severe Weather	41
5	Earthquake	32
6	Drought	8
7	Dam Failure	0

*Note: Ranking modified per jurisdiction's request to address major risks not calculated by the established methodology.*

## 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)
<b>Action B5.1—Identify Floodplain Manager.</b>						
Completed	Flood	3, 5, 9	Building Department	Low	General Fund	Completed
<b>Action B5.2—Complete Addison Creek Project.</b>						
Ongoing	Flood	3, 8, 9	MWRD	\$130,000,000; High	MWRD-Phase II, FEMA Grants, General Fund	2021-2022
<b>Action B5.3—Maintain compliance and 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.</b>						
Ongoing	Flooding	4, 6, 9	Building Department	Low	General Fund	Short-term and ongoing

<b>Action B5.4</b> —Consider Participation in the Community Rating System (CRS) program.						
Ongoing	Flood	1, 3, 5, 6, 9, 10, 11	Building Department	Low	General Fund	Short-term
<b>Action B5.5</b> —Create and disseminate public information on earthquakes and the mitigation of its risk.						
Ongoing	Earthquake	6, 7, 8	Bureau of Emergency Management	Low	General Fund, DHSEM	Short-term
<b>Action B5.6</b> —Participate in Storm Ready Program.						
Ongoing	Severe Weather, Severe Winter Weather, Flood, Tornado	1, 2, 5, 8, 11	Bureau of Emergency Management	Medium	General Fund, NWS	Short-term
<b>Action B5.7</b> —Where feasible, implement a program to record high water marks following high-water events.						
Ongoing	Flooding, Severe Weather	3, 6, 9	Village of Bellwood	Medium	General Fund; FEMA Grant Funds (Public Assistance)	Long-term
<b>Action B5.8</b> —Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.						
Completed	All	3, 4, 6, 10, 13	Community Development & Human Resources	Low	General Fund	Completed
<b>Action B5.9</b> —Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.						
Ongoing	All	7, 13	Village of Bellwood	High	FEMA Hazard Mitigation Grants	Long-term (depending on funding)
<b>Action B5.10</b> —Continue to support the countywide actions identified in this plan.						

Ongoing	All	All	Village of Bellwood	Low	General Fund	Short and long-term
<b>Action B5.11</b> —Actively participate in the plan maintenance strategy identified in this plan.						
Ongoing	All	3, 4, 6	DHSEM, Village of Bellwood	Low	General Fund	Short-term
<b>Action B5.12</b> —Install Emergency Generator to maintain critical communication and utilities to the HS-EMA HQ.						
New	Widespread Power Outrage	1, 5	HS-EMA	\$200,000; High	Local Funding not available	6-9 months
<b>Action B5.13</b> —Utilize storm sewer assessment to inform and implement flood mitigation projects and installation of storm sewers.						
New	Flood, Ice Storms	9	Bellwood PW	Unknown; High	Local funds currently not available	18 months
<b>Action B5.14</b> —Improve the Addison Creek Reservoir.						
New	Flood	9	MWRD	\$63,280,000; High	Unknown	Unknown
<b>Action B5.15</b> —Implement Addison Creek Channel Improvements.						
New	Flood	9	MWRD	\$43,400,000; High	Unknown	Unknown
(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	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	3	Medium	Low	Yes	No	Yes	High
2	3	High	High	Yes	Yes	No	Medium



3	3	Medium	Low	Yes	No	Yes	High
4	7	Medium	Low	Yes	No	Yes	High
5	3	Low	Low	Yes	No	Yes	High
6	5	Medium	Low	Yes	No	Yes	High
7	3	Medium	Medium	Yes	Yes	No	Medium
8	5	Medium	Low	Yes	No	Yes	High
9	2	High	High	Yes	Yes	No	Medium
10	13	Medium	Low	Yes	No	Yes	High
11	3	Low	Low	Yes	Yes	Yes	High
12	1	High	High	Yes	Yes	No	Medium
13	1	High	High	Yes	Yes	No	High
14	1	Unknown	High	Unknown	Unknown	Unknown	Unknown
15	1	Unknown	High	Unknown	Unknown	Unknown	Unknown

(a) See Chapter 1 for explanation of priorities.

## New Mitigation Actions

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

**Action B-5.12**

<b>Mitigation Action</b>	Install Emergency Generator to maintain critical communication and utilities to the HS-EMA HQ
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Bellwood HS-EMA
<b>Lead Agency/Organization</b>	HS-EMA
<b>Supporting Agencies/Organizations</b>	DPW
<b>Applicable Goal</b>	<ul style="list-style-type: none"> <li>• Develop and implement sustainable, cost-effective, and environmentally sound risk-reduction (mitigation) projects.</li> <li>• Protect the lives, health, safety, and property of the citizens of Cook County from the impacts of natural hazards.</li> <li>• Protect public services and critical facilities, including infrastructure, from loss of use during natural hazard events.</li> <li>• Involve stakeholders to enhance the local capacity to mitigate, prepare for, and respond to the impacts of natural hazards.</li> <li>• Develop, promote, and integrate mitigation action plans.</li> <li>• Promote public understanding of and support for hazard mitigation.</li> </ul>
<b>Applicable Objective</b>	<ul style="list-style-type: none"> <li>• Eliminate or minimize disruption of local government operations caused by natural hazards through all phases of emergency management.</li> <li>• Develop, improve, and protect systems that provide early warnings, emergency response communications, and evacuation procedures.</li> </ul>
<b>Potential Funding Source</b>	Local Funding not available
<b>Estimated Cost</b>	\$200,000
<b>Benefits (loss avoided)</b>	HS-EMA critical assets for deployment to emergencies are housed and may be deployed from this location
<b>Projected Completion Date</b>	6-9 months
<b>Priority and Level of Importance (Low, Medium, High)</b>	Medium Priority
<b>Benefit Analysis (Low, Medium, High)</b>	High—Project will provide an immediate reduction of risk exposure for life and property.

<b>Cost Analysis (Low, Medium, High)</b>	High—Existing funding will not cover the cost of the project; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
<b>Actual Completion Date</b>	

<b>Recommended Mitigation Action/Implementation Plan and Project Description</b>	
<b>Action/Implementation Plan and Project Description:</b>	Assess and install emergency generators to maintain critical communication and utilities to the HS-EMA HQ

<b>Mitigation Action and Project Maintenance</b>		
<b>Year</b>	<b>Status</b>	<b>Comments</b>
2019	New	
2020		
2021		
2022		
2023		

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

	Hazardous Materials Incident
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**Action B-5.13**

<b>Mitigation Action</b>	Utilize storm sewer assessment to inform and implement flood mitigation projects and installation of storm sewers.
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Bellwood - HS- EMA
<b>Lead Agency/Organization</b>	Bellwood PW
<b>Supporting Agencies/Organizations</b>	Bellwood HS-EMA
<b>Applicable Goal</b>	<ul style="list-style-type: none"> <li>• Develop and implement sustainable, cost-effective, and environmentally sound risk-reduction (mitigation) projects.</li> <li>• Protect the lives, health, safety, and property of the citizens of Cook County from the impacts of natural hazards.</li> <li>• Protect public services and critical facilities, including infrastructure, from loss of use during natural hazard events.</li> <li>• Involve stakeholders to enhance the local capacity to mitigate, prepare for, and respond to the impacts of natural hazards.</li> <li>• Develop, promote, and integrate mitigation action plans.</li> <li>• Promote public understanding of and support for hazard mitigation.</li> </ul>
<b>Applicable Objective</b>	<ul style="list-style-type: none"> <li>• Provide or improve flood protection on a watershed basis with flood control structures and drainage maintenance plans.</li> </ul>
<b>Potential Funding Source</b>	No local funds currently available
<b>Estimated Cost</b>	Unknown
<b>Benefits (loss avoided)</b>	Current rainfall taxes existing infrastructure and routinely backs up / causes an impact in response maintenance / and impedes traffic and hinders both residential and commercial properties
<b>Projected Completion Date</b>	18 months
<b>Priority and Level of Importance (Low, Medium, High)</b>	High Priority
<b>Benefit Analysis (Low, Medium, High)</b>	High—Project will provide an immediate reduction of risk exposure for life and property.
<b>Cost Analysis (Low, Medium, High)</b>	High—Existing funding will not cover the cost of the project; implementation would require new

	revenue through an alternative source (for example, bonds, grants, and fee increases).
<b>Actual Completion Date</b>	

**Recommended Mitigation Action/Implementation Plan and Project Description**

<b>Action/Implementation Plan and Project Description:</b>	Storm sewer assessment has been conducted with findings that indicate current infrastructure and capacity is substandard for size of municipality
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**Mitigation Action and Project Maintenance**

Year	Status	Comments
2019	New	
2020		
2021		
2022		
2023		

**Mitigated Hazards**

	<b>All Hazards</b>
	Dam/Levee Failure
	Drought
	Earthquake
X	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard
	Extreme Cold
X	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 B-5.14**

<b>Mitigation Action</b>	Improve the Addison Creek Reservoir
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Village of Bellwood
<b>Lead Agency/Organization</b>	MWRD
<b>Supporting Agencies/Organizations</b>	Village of Bellwood
<b>Applicable Goal</b>	<ul style="list-style-type: none"> <li>Protect the lives, health, safety, and property of the citizens of Cook County from the impacts of natural hazards.</li> </ul>
<b>Applicable Objective</b>	<ul style="list-style-type: none"> <li>Provide or improve flood protection on a watershed basis with flood control structures and drainage maintenance plans.</li> </ul>
<b>Potential Funding Source</b>	TBD
<b>Estimated Cost</b>	\$63,280,000
<b>Benefits (loss avoided)</b>	TBD
<b>Projected Completion Date</b>	TBD
<b>Priority and Level of Importance (Low, Medium, High)</b>	TBD
<b>Benefit Analysis (Low, Medium, High)</b>	TBD
<b>Cost Analysis (Low, Medium, High)</b>	High
<b>Actual Completion Date</b>	

<b>Recommended Mitigation Action/Implementation Plan and Project Description</b>	
<b>Action/Implementation Plan and Project Description:</b>	ID: ADCR-6 Contract: 11-186-3F Watershed: Lower Des Plaines Location: Bellwood, IL Creates an approximately 600 acre-foot flood control reservoir in Bellwood just north of Washington Boulevard and east of Addison Creek. Includes reservoir excavation and installation of necessary appurtenances for operation of the facility, such as control structure, inlet structure, spillway, piping, and a pumping station.

<b>Mitigation Action and Project Maintenance</b>		
<b>Year</b>	<b>Status</b>	<b>Comments</b>
2019	New	Project under construction
2020		
2021		
2022		



<b>2023</b>		
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Mitigated Hazards	
	<b>All Hazards</b>
	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 B-5.15**

<b>Mitigation Action</b>	Implement Addison Creek Channel Improvements
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Village of Bellwood
<b>Lead Agency/Organization</b>	MWRD
<b>Supporting Agencies/Organizations</b>	Village of Bellwood
<b>Applicable Goal</b>	<ul style="list-style-type: none"> <li>Protect the lives, health, safety, and property of the citizens of Cook County from the impacts of natural hazards.</li> <li>Protect public services and critical facilities, including infrastructure, from loss of use during natural hazard events and potential damage from such activities.</li> </ul>
<b>Applicable Objective</b>	<ul style="list-style-type: none"> <li>Provide or improve flood protection on a watershed basis with flood control structures and drainage maintenance plans.</li> </ul>
<b>Potential Funding Source</b>	Unknown
<b>Estimated Cost</b>	\$43,400,000
<b>Benefits (loss avoided)</b>	Unknown
<b>Projected Completion Date</b>	Unknown
<b>Priority and Level of Importance (Low, Medium, High)</b>	Unknown
<b>Benefit Analysis (Low, Medium, High)</b>	Unknown
<b>Cost Analysis (Low, Medium, High)</b>	High
<b>Actual Completion Date</b>	Unknown

Recommended Mitigation Action/Implementation Plan and Project Description	
<b>Action/Implementation Plan and Project Description:</b>	ID: ADCR-6B Contract: 11-187-3F Watershed: Lower Des Plaines Location: Northlake, Melrose Park, Stone Park, Bellwood, Westchester, and Broadview, IL Improves channel conveyance through channel improvements from Northlake to Broadview that include open channel, soldier piles wall, articulated concrete blocks, gabions, and channel clearing. Removal of 3 bridges along Harrison St. at 30th Ave., 31st Ave., and 32nd Ave.

Mitigation Action and Project Maintenance		
Year	Status	Comments

<b>2019</b>	New	Executed intergovernmental agreements with all six villages. Final Design. Right-of-way acquisition in progress.
<b>2020</b>		
<b>2021</b>		
<b>2022</b>		
<b>2023</b>		

Mitigated Hazards	
	<b>All Hazards</b>
	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 B-5.2**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.2	Complete Addison Creek Project	
Status Description: Yes	Demo a building and is currently moving debris. Water retention pour has started.	O
<p><b>Completion status legend:</b>                      N = New    O = Action Ongoing toward Completion                      C = Project Completed    R = Want Removed from Annex    X = No Action Taken</p>		

**Action B-5.3**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.3	Maintain compliance and 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		O
<p><b>Completion status legend:</b>                      N = New    O = Action Ongoing toward Completion                      C = Project Completed    R = Want Removed from Annex    X = No Action Taken</p>		

**Action B-5.4**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.4	Consider Participation in the Community Rating System (CRS) program	
Status Description: No		X
<p align="center"><b>Completion status legend:</b>  <b>N</b> = New    <b>O</b> = Action Ongoing toward Completion  <b>C</b> = Project Completed    <b>R</b> = Want Removed from Annex    <b>X</b> = No Action Taken</p>		

**Action B-5.5**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.5	Create and disseminate public information on earthquakes and the mitigation of its risk	
Status Description: No		X
<p align="center"><b>Completion status legend:</b>  <b>N</b> = New    <b>O</b> = Action Ongoing toward Completion  <b>C</b> = Project Completed    <b>R</b> = Want Removed from Annex    <b>X</b> = No Action Taken</p>		

**Action B-5.6**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.6	Participate in Storm Ready Program	
Status Description: Yes		O
<p><b>Completion status legend:</b>  <b>N</b> = New    <b>O</b> = Action Ongoing toward Completion  <b>C</b> = Project Completed    <b>R</b> = Want Removed from Annex    <b>X</b> = No Action Taken</p>		

**Action B-5.7**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.7	Where feasible, implement a program to record high water marks following high-water events.	
Status Description: Yes		O
<p><b>Completion status legend:</b>  <b>N</b> = New    <b>O</b> = Action Ongoing toward Completion  <b>C</b> = Project Completed    <b>R</b> = Want Removed from Annex    <b>X</b> = No Action Taken</p>		

**Action B-5.9**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.9	Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.	
Status Description: No		X
<p align="center"><b>Completion status legend:</b>                      N = New    O = Action Ongoing toward Completion                      C = Project Completed    R = Want Removed from Annex    X = No Action Taken</p>		

**Action B-5.10**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.10	Continue to support the countywide actions identified in this plan.	
Status Description: Yes		O
<p align="center"><b>Completion status legend:</b>                      N = New    O = Action Ongoing toward Completion                      C = Project Completed    R = Want Removed from Annex    X = No Action Taken</p>		



**Action B-5.11**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.11	Actively participate in the plan maintenance strategy identified in this plan.	
Status Description: Yes		O
<p><b>Completion status legend:</b>  <b>N</b> = New    <b>O</b> = Action Ongoing toward Completion  <b>C</b> = Project Completed    <b>R</b> = Want Removed from Annex    <b>X</b> = No Action Taken</p>		

Completed Mitigation Actions

The following section represents completed mitigation actions, and serves as an archive of identified and completed projects.

**Action B-5.1**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.1	Identify Floodplain Manager	
Status Description: Yes		C
<p><b>Completion status legend:</b>                      N = New    O = Action Ongoing toward Completion                      C = Project Completed    R = Want Removed from Annex    X = No Action Taken</p>		

**Action B-5.8**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-5.8	Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.	
Status Description: Yes	Incorporated into village disaster plan	C
<p><b>Completion status legend:</b>                      N = New    O = Action Ongoing toward Completion                      C = Project Completed    R = Want Removed from Annex    X = No Action Taken</p>		

## Future Needs to Better Understand Risk/Vulnerability

Flooding and severe weather impact the community through more than just direct damage. The Village of Bellwood has a rail yard to the north and an expressway to the south. When flooding or severe weather strikes, the village can be cut in two, from east to west, by the water or debris; this impacts the entire community.

## Additional Comments

No additional comments at this time

## HAZUS-MH Risk Assessment Results

BELLWOOD EXISTING CONDITIONS	
2010 Population	19,071
Total Assessed Value of Structures and Contents	\$4,799,236,867
Area in 100-Year Floodplain	305.04 acres
Area in 500-Year Floodplain	512.28 acres
Number of Critical Facilities	51

HAZARD EXPOSURE IN BELLWOOD						
	Number Exposed		Value Exposed to Hazard		Total	% of Total Assessed Value Exposed
	Population	Buildings	Structure	Contents		
<b>Dam Failure</b>						
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%
<b>Flood</b>						
100-Year	2,993	921	\$239,526,695	\$165,992,307	\$405,519,002	8.45%

500-Year	6,068	1,867	\$520,806,779	\$376,274,461	<b>\$897,081,240</b>	18.69%
<b>Tornado</b>						
100-Year	—	—	\$691,796,814	\$527,927,210	<b>\$1,219,724,023</b>	25.41%
500-Year	—	—	\$1,274,858,446	\$1,001,314,302	<b>\$2,276,172,748</b>	47.43%

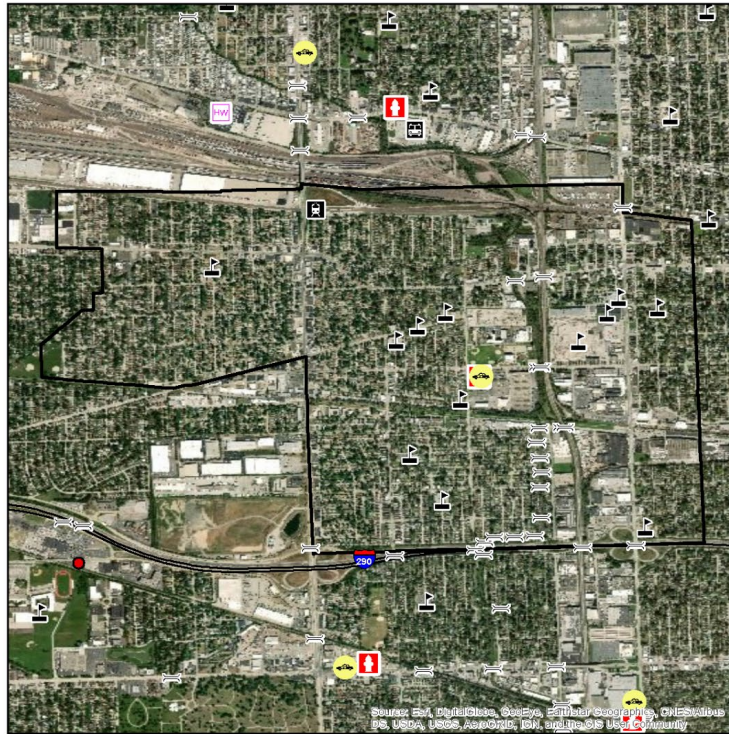
**ESTIMATED PROPERTY DAMAGE VALUES IN BELLWOOD**

	Estimated Damage Associated with Hazard			% of Total Assessed Value Damaged
	Building	Contents	Total	
<b>Dam Failure</b>				
Buffalo Creek	\$0	\$0	<b>\$0</b>	0.00%
Touhy	\$0	\$0	<b>\$0</b>	0.00%
U. Salt Cr. #2	\$0	\$0	<b>\$0</b>	0.00%
U. Salt Cr. #3	\$0	\$0	<b>\$0</b>	0.00%
U. Salt Cr. #4	\$0	\$0	<b>\$0</b>	0.00%
<b>Earthquake</b>				
1909 Historical Event	\$35,571,919	\$10,099,457	<b>\$45,671,376</b>	0.95%
<b>Flood</b>				
10-Year	\$6,016,155	\$2,667,736	<b>\$8,683,891</b>	0.18%
100-Year	\$30,247,149	\$13,788,877	<b>\$44,036,025</b>	0.92%
500-Year	\$64,034,373	\$39,713,953	<b>\$103,748,326</b>	2.16%

<b>Tornado</b>				
100-Year	\$69,179,681	\$52,792,721	<b>\$121,972,402</b>	2.54%
500-Year	\$186,129,333	\$146,191,888	<b>\$332,321,221</b>	6.92%



# Hazard Mapping

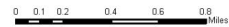


## VILLAGE OF BELLWOOD

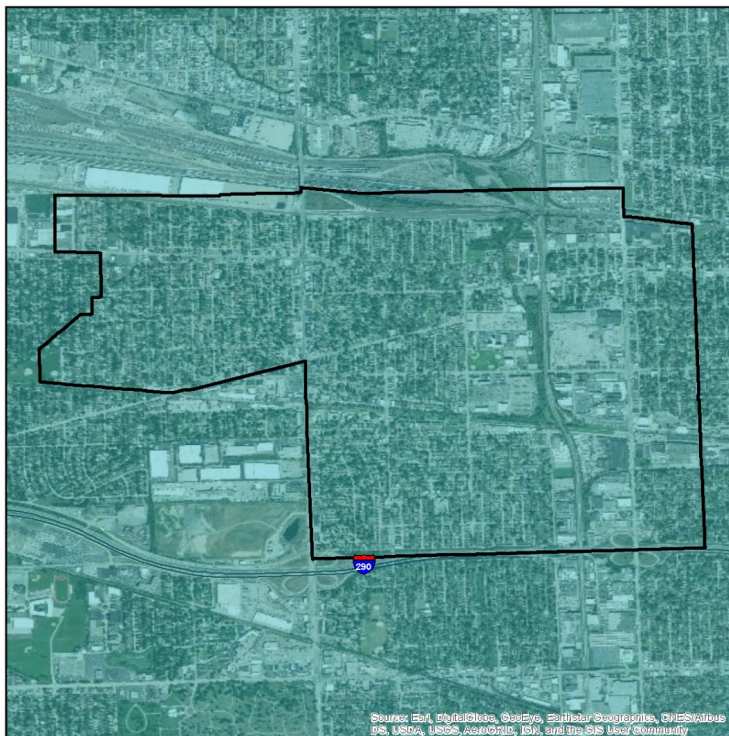
### CRITICAL INFRASTRUCTURE

- Oil Facilities
- Transit Centers
- Military Facilities
- Police Stations
- Fire Stations
- Hazardous Waste
- Airports
- Hospitals
- Highway Bridges
- Warming Centers
- Cooling Centers
- Schools
- Railroad Stations

Base Map Data Sources:  
Cook County, ESRI



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



## VILLAGE OF BELLWOOD

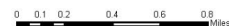
### PEAK GROUND ACCELERATION FOR A 100 YEAR EARTHQUAKE EVENT

- Mercalli Scale, Potential Shaking**
- II-III Weak

Data provided by the USGS Earthquake Hazards Program and Cook County.

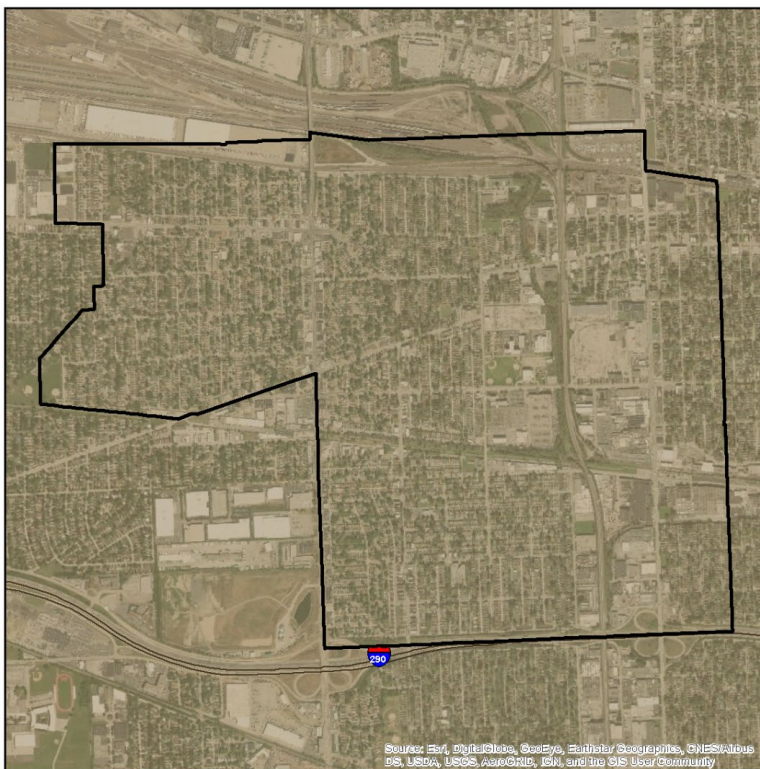
Probabilistic seismic-hazard maps were prepared for the conterminous United States for 2014 portraying peak horizontal acceleration and horizontal spectral response acceleration for 0.2- and 1.0-second periods with probabilities of exceedance of 10 percent in 50 years and 2 percent in 50 years. All of the maps were prepared by combining the hazard derived from spatially smoothed historical seismicity with the hazard from fault-specific sources. The acceleration values contoured are the random horizontal component. The reference site condition is firm rock, defined as having an average shear-wave velocity of 760 m/s in the top 30 meters corresponding to the boundary between NEHRP (National Earthquake Hazards Reduction Program) site classes B and C.

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





### VILLAGE OF BELLWOOD

#### NATIONAL EARTHQUAKE HAZARD REDUCTION PROGRAM (NEHRP) SOIL CLASSIFICATION

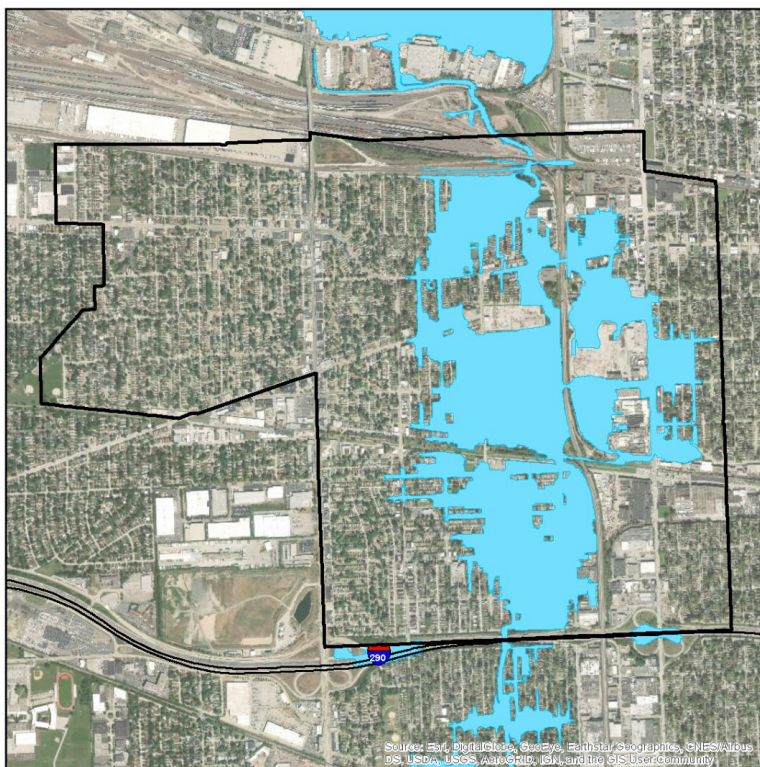
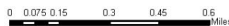
**TYPE**

- C - Very Dense Soil, Soft Rock
- D - Stiff Soil
- F - Site Specific Evaluation

Data provided by the Illinois State Geological Survey and Cook County.

The Central United States Earthquake Consortium (CUSEC) State Geologists produced a regional Soil Site Class map (NEHRP Soil Profile Type Map), a Liquefaction Susceptibility Map and a Soil Response Map for the 8 states to be used in the FEMA New Madrid Catastrophic Planning Initiative Phase I work. The USGS Geologic Investigation Series I-2789 Map of Surficial Deposits and Materials in the Eastern and Central United States (East of 112 Degrees West Longitude) by David S. Fullerton, Charles A. Bush and Jean N. Pennell (2003) was the base map used for this work. Each State Geological Survey produced its own state map version of the Soil Site Class and Liquefaction Susceptibility maps. The procedures outlined in the NEHRP provisions (Building Seismic Safety Council, 2004) and the 2003 International Building Codes (International Code Council, 2002) were followed to produce the soil site class maps. CUSEC State Geologists used the entire column of soils material down to bedrock and did not include any bedrock in the calculation of the average shear wave velocity for the column, since it is the soil column and the difference in shear wave velocity of the soils in comparison to the bedrock which influences much of the amplification.

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### VILLAGE OF BELLWOOD

#### COOK COUNTY MWRDGC 100-YEAR INUNDATION AREA

- 100-year Inundation Area

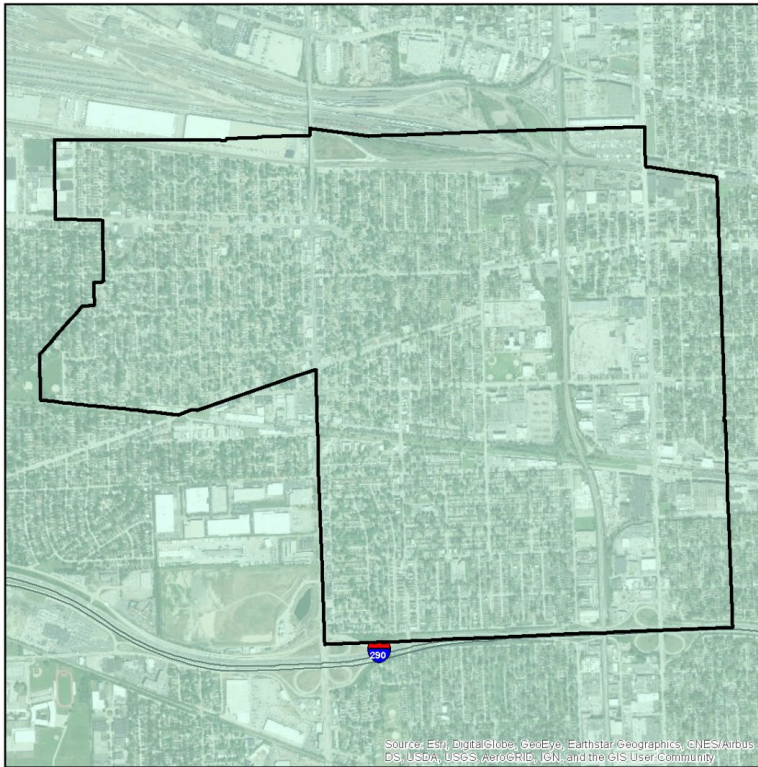
MWRDGC Data provided by Metropolitan Water Reclamation District of Greater Chicago and Cook County.

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**DISCLAIMER:** The Cook County MWRDGC 100-year Inundation Map is provided to show general flood risk information regarding floodplains and inundation areas. This map is not regulatory. Official FEMA Flood Insurance Study information and regulatory maps can be obtained from <http://www.fema.gov>.







### VILLAGE OF BELLWOOD

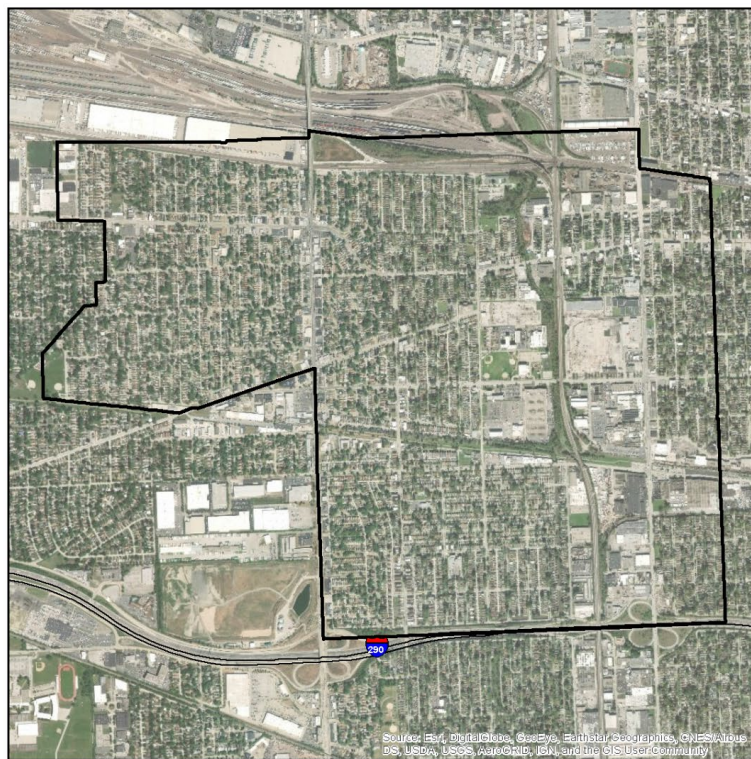
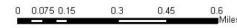
#### LIQUEFACTION SUSCEPTIBILITY



Data provided by the Illinois State Geological Survey and Cook County.

The Central United States Earthquake Consortium (CUSEC) State Geologists produced a regional Soil Site Class map (NEHRP Soil Profile Type Map), a Liquefaction Susceptibility Map and a Soil Response Map for the 8 states to be used in the FEMA New Madrid Catastrophic Planning Initiative Phase I work. The USGS Geologic Investigation Series I-2789 Map of Surficial Deposits and Materials in the Eastern and Central United States (East of 102 Degrees West Longitude) by David S. Fullerton, Charles A. Bush and Jean N. Pennell (2003) was the base map used for this work. Each State Geological Survey produced its own state map version of the Soil Site Class and Liquefaction Susceptibility maps. The procedures outlined in the NEHRP provisions (Building Seismic Safety Council, 2004) and the 2003 International Building Codes (International Code Council, 2002) were followed to produce the soil site class maps. CUSEC State Geologists used the entire column of soils material down to bedrock and did not include any bedrock in the calculation of the average shear wave velocity for the column, since it is the soil column and the difference in shear wave velocity of the soils in comparison to the bedrock which influences much of the amplification.

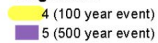
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### VILLAGE OF BELLWOOD

#### 100- AND 500- YEAR TORNADO EVENTS

##### Magnitude



Historic tornado data provided by NOAA/NWS showing the initial points and paths of all F4 and F5 events observed from 1950 to 2017.

