

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

**Robbins Annex**

**FINAL**

July 2019

Prepared for:



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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:** 1917
- **Current Population:** 5,464 as of the 2018 U.S. Census population estimate.
- **Population Growth:** As of 2010, the total population is 5,337, which had decreased -18.4% since 2000. The estimates from 2010 to 2018 show an increase of over 2 percent.
- **Location and Description:** The Village of Robbins, Illinois is located in southern Cook County, approximately 20 miles southwest of downtown Chicago. The Village of Robbins occupies approximately 1.5 square miles of land within Bremen Township. Neighboring communities include Crestwood, Midlothian, Blue Island, Alsip, and Posen.
- **Brief History:** The Village of Robbins was incorporated in 1917. The village's first mayor was Thomas J. Kellar. The citizens of the unincorporated area of Cook County sought to protect their property from the citizens of surrounding towns and also to provide the necessary public services required by a growing settlement. Thomas J. Kellar, having worked at the Markham court house, was tasked with investigating the procedures of incorporation. The Village of Robbins was incorporated and was named after the original realtor and subdivider, Eugene Robbins. Robbins is one of the oldest African American governed towns in the northern United States.
- **Climate:** The climate of the Village of Robbins and the Chicago area is classified as humid continental, with all four seasons distinctly represented: wet springs; hot and humid summers; pleasant autumns; and cold winters. Annual precipitation is average, and reaches its lowest points in the months of January and February, and peaks in the months of May and June. Winter proves quite variable. Seasonal snowfall in the city has ranged from 9 – 90 inches. The daily average temperature in January at Midway Airport is 24.8 °F (-4.0 °C), and temperatures often stay below freezing for several consecutive days or even weeks in January and February. Temperatures drop to or below 0 °F (-18 °C) on 5.5 nights annually at Midway and 8.2 nights at O'Hare. Spring in the Chicago area is perhaps the city's wettest and unpredictable season. Winter like conditions can persist well into April and even occasionally into May. Thunderstorms are especially prevalent in the spring time as the city's lakeside location makes it a center of conflicts between large volumes of warmer and colder air, triggering many kinds of severe weather. Temperatures vary tremendously in the springtime; March is the month with the greatest span between the record highs and lows. On a typical summer day, humidity is usually moderately high and temperatures ordinarily reach anywhere between 78 and 92 °F (26 and 33 °C). The extreme heat that the Chicago area is capable of experiencing during the height of the summer season can persist into the autumn season. Temperatures have reached 100 degrees high and subzero lows below -18 °C. Fall can bring heavy thunderstorms, many of which are capable of producing flooding. The average first accumulating snow occurs around Nov 19.
- **Governing Body Format:** The Village of Robbins is governed by a Village Mayor, six members Board of Trustees with a Village Clerk, elected and a Village Administrator appointed by the Mayor and approved by the Board of Trustee. This body will assume responsibility for the

adoption of this plan and the Chief of Operations and Personal Safety will oversee its implementation.

- **Development Trends:** The Village was awarded a \$259,000 Department of Commerce Economic Opportunity (DCEO) grant for the completion of water meter installation. In addition, the Village was awarded a \$150,000 DCEO matching grant for roadway improvements along Claire Boulevard. Next, the Village received \$34,000 in grant funding to provide safety equipment for both the police department and fire station. In 2019, Tyrone Ward, village president of Robbins, IL welcomed a full cast of major African American entrepreneurs from throughout Cook County as well as city/suburban elected officials at a groundbreaking Business Summit. The Summit was titled the Minority Entrepreneur Interactive Solution Symposium (MEISS).

## 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	In accordance with Public Act 096-0704, Illinois has adopted the IBC as its state Building Code
Zonings	Yes	No	No	Yes	(65 ILCS 5/) Illinois Municipal Code.
Subdivisions	No	No	No	No	
Stormwater Management	No	No	Yes	Yes	State regulates industrial activity from Construction sites 1 acre or larger under section 402 CWA.
Post Disaster Recovery	No	No	No	No	
Real Estate Disclosure	No	No	Yes	Yes	(765 ILCS 77/) Residential Real Property Disclosure Act.
Growth Management	No	No	No	No	

Site Plan Review	No	No	No	No	
Public Health and Safety	No	No	Yes	Yes	Cook County Board of Health.
Environmental Protection	No	No	No	No	
<b>Planning Documents</b>					
General or Comprehensive Plan	No	No	No	No	
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>					
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	No	No	No	No	Regional stormwater impacts are managed by MWRD. The Village lies within the Calumet- Sag Channel watershed planning area of MWRD's comprehensive Stormwater Master Planning Program
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	Yes	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.
Shoreline Management Plan	No	No	No	No	
<b>Response/Recovery Planning</b>					
Comprehensive Emergency Management Plan	No	No	Yes	Yes	Cook County DHSEM
Threat and Hazard Identification and Risk Assessment	No	No	Yes	No	Cook County DHSEM Preparing THIRA
Terrorism Plan	No	No	Yes	Yes	Cook County DHSEM
Post-Disaster Recovery Plan	No	No	No	No	
Continuity of Operations Plan	No	No	Yes	No	Cook County DHSEM
Public Health Plans	No	No	Yes	No	Cook County DPH

<b>TABLE: FISCAL CAPABILITY</b>	
<b>Financial Resources</b>	<b>Accessible or Eligible to Use?</b>
Community Development Block Grants	Yes
Capital Improvements Project Funding	No
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	No



State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

<b>TABLE: ADMINISTRATIVE AND TECHNICAL CAPABILITY</b>		
<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	Robinson Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Robinson Engineering
Planners or engineers with an understanding of natural hazards	Yes	Robinson Engineering
Staff with training in benefit/cost analysis	Yes	
Surveyors	Yes	Contracted Out
Personnel skilled or trained in GIS applications	Yes	Cook County GIS Consortium
Scientist familiar with natural hazards in local area	Yes	Contracted Out
Emergency manager	Yes	Police & Fire Chief's
Grant writers	Yes	Village Administration

<b>TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE</b>	
What department is responsible for floodplain management in your jurisdiction?	Village Administrator
Who is your jurisdiction's floodplain administrator? (department/position)	Village Administrator
Are any certified floodplain managers of staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	
When was the most recent Community Assistance Visit or Community Assistance Contact?	1/27/2000
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	Yes
Do your flood hazard maps adequately address the flood risk within your jurisdiction? (If no, please state why)	No, Anticipating resource funding through MWRD, IDNR

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, Please refer to above
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; Yes

<b>TABLE: COMMUNITY CLASSIFICATIONS</b>			
	<b>Participating?</b>	<b>Classification</b>	<b>Date Classified</b>
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Unknown	Unknown	Unknown
Public Protection/ISO	Yes	ISO 5	2013
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: 4
- Number of FEMA-Identified Severe Repetitive Loss Properties: 0
- 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
Severe Storms	DR-4116	2013	-
Severe Winter Storms	DR-1960	2011	-
Severe Storms/Flooding	DR-1935	2010	-
Severe Storms/Flooding	DR-1800	2008	-
Severe Storms/Flooding	DR-1729	2007	-
Severe Winter Storm	EM-3161	2000	-
Winter Snow Storm	EM-3134	1999	-
Flooding	DR-1188	1997	-
Flooding	DR-1129	1996	-
Severe Storms/Flooding	DR-997	1993	-
Severe Storms/Flooding	DR-798	1987	-
Severe Storms/Flooding	DR-776	1986	-

### [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:** There is overbank flooding during almost every rain or melt event that impacts the three blocks east of Kedzie (to Utica) between 137th and 139th streets. During extreme events there is also overbank flooding along Reeves and Maxey Ct. A planned project with the MWRD will do a lot to address this problem. There is urban flooding in most areas of the Village. Areas of the Village that are currently vacant and forested would likely flood more if built out without substantial grey/green infrastructure improvements. The storm infrastructure in the Village is incomplete and existing infrastructure is outdated.

**Extreme Heat:** These events particularly impact elderly residents and residents squatting in abandoned homes. Establishing a cooling center, connecting residents to cooling centers in neighboring communities, and setting up a check in the system are all potential actions steps.

**High Winds:** Electrical lines are impacted during high winds. ComEd needs to do better with their infrastructure in the Village. We need to investigate if we can pass ordinances that impose more rigorous requirements on them. Private homes are also impacted during high winds, particularly those that are in poor repair. A program to help with maintenance would help mitigate the impacts of high winds.

**Snow/Blizzards:** The Village is challenged with keeping up with snow removal during extreme events and motorists do not drive with needed caution given conditions. Homeowners are also challenged - the fire department supports many homeowners and shovels them out, particularly some elderly residents.

**Extreme Cold:** This especially impacts the Village's aging drinking water infrastructure. During extreme cold, 1-3 water mains break each day. Some residents also are challenged with extreme cold, especially those squatting in abandoned homes; fires become a problem as these residents take extreme measures to stay warm.

## 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	Severe Weather	54
2	Severe Winter Weather	54
3	Flood	45
4	Tornado	45
5	Earthquake	32
6	Drought	2
7	Dam Failure	0

## 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 R6.1</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.						
Removed	All	7, 13	Village of Robbins	High	FEMA Hazard Mitigation Grants	Removed
<b>Action R6.2</b> —Continue to support the countywide actions identified in this plan.						
Ongoing	All	All	Village of Robbins	Low	General Fund	Short-and long-term
<b>Action R6.3</b> —Actively participate in the plan maintenance strategy identified in this plan.						
Removed	All	3, 4, 6	DHSEM, Village of Robbins	Low	General Fund	Removed
<b>Action R6.4</b> —Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.						

Removed	All	3, 4, 5, 6, 7, 9, 10, 11, 13	Village of Robbins	Low	General Fund	Removed
<b>Action R6.5</b> —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	Flooding	4, 6, 9	Village of Robbins	Low	General Fund	Short-term and ongoing
<b>Action R6.6</b> —Where feasible, implement a program to record high water marks following high-water events.						
Removed	Flooding, Severe Weather	3, 6, 9	Village of Robbins	Medium	General Fund; FEMA Grant Funds (Public Assistance)	Removed
<b>Action R6.7</b> —Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.						
Removed	Flooding, Severe Weather	3, 4, 6, 10, 13	Robinson Engineering	Low	General Fund	Removed
<b>Action R6.8</b> —Consider the development and implementation of a Capital Improvements Program (CIP) to increase the Village’s regulatory, financial and technical capability to implement mitigation actions.						
Ongoing	All	1, 2, 7	Public Works	High	CIP component of general fund (if implemented)	Long-term
<b>Action R6.9</b> —Manage current overbank flooding of Midlothian Creek (construction of Robbins Stormwater Park; stream bank repair)						
New	Flood	1, 2, 3	Robbins	\$12,000,000; High	MWRD; Grants	Long-term
<b>Action R6.10</b> —Extend storm sewer network to include incomplete portions of Village; Assess fitness of existing storm sewer network, develop repair and replace plan, begin to implement plan; continue to build out green infrastructure program						
New	Flood	1, 2, 3, 13	Robbins	N/A	Grants; Private	Short-term
<b>Action R6.11</b> —Remove abandoned structures from flood prone areas						

New	Flood	3, 7	Robbins	N/A	Grants	Long-term
<b>Action R6.12</b> —Engage in comprehensive planning that includes land use and flood management planning						
New	Flood	1, 2, 3, 4, 10	Robbins	N/A	Foundation Grants	Short-term
<b>Action R6.13</b> —Connect with neighboring communities with cooling centers, develop plan for first responders to check on vulnerable residents and connect them to cooling centers if needed						
New	Extreme Heat	8, 12	Robbins	N/A	Foundation Grants; Local Funds	Short-term
<b>Action R6.14</b> —Meet with ComEd to push for more robust infrastructure in Village; consider enhancing local regulatory framework of ComEd						
New	High Wind	1, 8	Robbins	N/A	N/A	Short-term
<b>Action R6.15</b> —Explore service sharing with other municipalities for snow removal						
New	Snow, Blizzard	8	Robbins	N/A	N/A	Short-term
<b>Action R6.16</b> —Flood Control on Midlothian Creek						
New	Flood	2, 3, 4, 9, 10, 13	MWRD	\$11,000,000; High	Local and Regional Agencies, Grants	Long-term
(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	2	High	High	Yes	Yes	No	Medium
2	13	Medium	Low	Yes	No	Yes	High
3	3	Medium	Low	Yes	Yes	Yes	High
4	9	Medium	Low	Yes	No	Yes	Medium



5	3	Medium	Low	Yes	No	Yes	High
6	3	Medium	Medium	Yes	Yes	No	Medium
7	5	Medium	Low	Yes	No	Yes	High
8	3	High	High	Yes	No	No	Medium
9	3	High	High	Yes	Yes	Unknown	High
10	4	Unknown	Unknown	Unknown	Yes	Unknown	High
11	2	Unknown	Unknown	Unknown	Yes	Yes	High
12	5	Unknown	Unknown	Unknown	Yes	Yes	Medium
13	2	Unknown	Unknown	Unknown	Unknown	Unknown	Medium
14	2	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
15	1	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
16	6	Unknown	High	Unknown	Yes	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 R-6.9**

<b>Mitigation Action</b>	Manage current overbank flooding of Midlothian Creek (construction of Robbins Stormwater Park; stream bank repair)
<b>Year Initiated</b>	2016
<b>Applicable Jurisdiction</b>	Robbins/MWRD
<b>Lead Agency/Organization</b>	Robbins/MWRD
<b>Supporting Agencies/Organizations</b>	MWRD; other watershed communities (Tinley Park, Orland Hills, Orland Park, Oak Forest, Midlothian, Posen, Crestwood, Country Club Hills, Blue Island)
<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 and potential damage from such activities.</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>• Increase the resilience of (or protect and maintain) infrastructure and critical facilities.</li> <li>• Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change.</li> </ul>
<b>Potential Funding Source</b>	MWRD; contributions from upstream watershed communities; local, state, and federal grants (including FEMA hazard mitigation); private foundations
<b>Estimated Cost</b>	\$12,000,000
<b>Benefits (loss avoided)</b>	Remove more than 200 acres from flood plain, making redevelopment possible
<b>Projected Completion Date</b>	N/A
<b>Priority and Level of Importance (Low, Medium, High)</b>	High

<b>Benefit Analysis (Low, Medium, High)</b>	High
<b>Cost Analysis (Low, Medium, High)</b>	High
<b>Actual Completion Date</b>	TBD

<b>Recommended Mitigation Action/Implementation Plan and Project Description</b>	
<b>Action/Implementation Plan and Project Description:</b>	Address overbank flooding through the construction of a Stormwater Park and stream bank repair

<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
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 R-6.10**

<b>Mitigation Action</b>	Extend storm sewer network to include incomplete portions of Village; Assess fitness of existing storm sewer network, develop repair and replace plan, begin to implement plan; continue to build out green infrastructure program
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Robbins
<b>Lead Agency/Organization</b>	Robbins
<b>Supporting Agencies/Organizations</b>	Midlothian, Blue Island or other nearby municipalities that have streets or subdivisions without the stormwater infrastructure that are interested in joint contracting and grant applications
<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 and potential damage from such activities.</li> </ul>
<b>Applicable Objective</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 and potential damage from such activities.</li> <li>• Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area.</li> </ul>
<b>Potential Funding Source</b>	Local, state, and federal grants (including FEMA hazard mitigation grants for storm sewer

	planning); municipal bonds; private foundation (especially for green infrastructure)
<b>Estimated Cost</b>	N/A
<b>Benefits (loss avoided)</b>	N/A
<b>Projected Completion Date</b>	TBD
<b>Priority and Level of Importance (Low, Medium, High)</b>	High
<b>Benefit Analysis (Low, Medium, High)</b>	N/A
<b>Cost Analysis (Low, Medium, High)</b>	N/A
<b>Actual Completion Date</b>	TBD

Recommended Mitigation Action/Implementation Plan and Project Description	
<b>Action/Implementation Plan and Project Description:</b>	Extend storm sewer network to include incomplete portions of Village; Assess fitness of existing storm sewer network, develop repair and replace plan, begin to implement plan; continue to build out green infrastructure program

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
	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 R-6.11**

<b>Mitigation Action</b>	Remove abandoned structures from flood prone areas
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Robbins
<b>Lead Agency/Organization</b>	Robbins
<b>Supporting Agencies/Organizations</b>	
<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> </ul>
<b>Applicable Objective</b>	<ul style="list-style-type: none"> <li>• Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change.</li> <li>• Retrofit, purchase, or relocate structures in high hazard areas, including those known to be repetitively damaged.</li> </ul>
<b>Potential Funding Source</b>	Current IDHA grant; local, state and federal grants
<b>Estimated Cost</b>	N/A
<b>Benefits (loss avoided)</b>	N/A
<b>Projected Completion Date</b>	TBD
<b>Priority and Level of Importance (Low, Medium, High)</b>	High
<b>Benefit Analysis (Low, Medium, High)</b>	N/A
<b>Cost Analysis (Low, Medium, High)</b>	N/A
<b>Actual Completion Date</b>	TBD

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

<b>Action/Implementation Plan and Project Description:</b>	Remove abandoned structures from flood prone areas
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**Mitigation Action and Project Maintenance**

Year	Status	Comments
2019	New	
2020		



<b>2021</b>		
<b>2022</b>		
<b>2023</b>		

<b>Mitigated Hazards</b>	
	<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 R-6.12**

<b>Mitigation Action</b>	Engage in comprehensive planning that includes land use and flood management planning
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Robbins
<b>Lead Agency/Organization</b>	Robbins
<b>Supporting Agencies/Organizations</b>	Chicago Metropolitan Agency for Planning; Metropolitan Planning Council
<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 and potential damage from such activities.</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>• Increase the resilience of (or protect and maintain) infrastructure and critical facilities.</li> <li>• Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change.</li> <li>• Integrate hazard mitigation policies into land use plans in the planning area.</li> <li>• Strengthen codes and land use planning and their enforcement, so that new construction or redevelopment can avoid or withstand the impacts of natural hazards.</li> </ul>
<b>Potential Funding Source</b>	Foundation grants; Local Technical Assistance funds from CMAP and/or MPC
<b>Estimated Cost</b>	N/A
<b>Benefits (loss avoided)</b>	N/A
<b>Projected Completion Date</b>	TBD

Priority and Level of Importance (Low, Medium, High)	Medium
Benefit Analysis (Low, Medium, High)	N/A
Cost Analysis (Low, Medium, High)	N/A
Actual Completion Date	TBD

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Engage in comprehensive planning that includes land use and flood management planning

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 R-6.13**

<b>Mitigation Action</b>	Connect with neighboring communities with cooling centers, develop plan for first responders to check on vulnerable residents and connect them to cooling centers if needed
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Robbins
<b>Lead Agency/Organization</b>	Robbins
<b>Supporting Agencies/Organizations</b>	Crestwood, other neighboring communities with cooling centers
<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>• Involve stakeholders to enhance the local capacity to mitigate, prepare for, and respond to the impacts of natural hazards.</li> </ul>
<b>Applicable Objective</b>	<ul style="list-style-type: none"> <li>• Establish partnerships among all levels of local government, the private sector, and/or nongovernmental organizations to improve and implement methods to protect people and property.</li> <li>• Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area.</li> </ul>
<b>Potential Funding Source</b>	Foundation Grants
<b>Estimated Cost</b>	N/A
<b>Benefits (loss avoided)</b>	N/A
<b>Projected Completion Date</b>	TBD
<b>Priority and Level of Importance (Low, Medium, High)</b>	Medium
<b>Benefit Analysis (Low, Medium, High)</b>	N/A
<b>Cost Analysis (Low, Medium, High)</b>	N/A
<b>Actual Completion Date</b>	TBD

<b>Recommended Mitigation Action/Implementation Plan and Project Description</b>	
<b>Action/Implementation Plan and Project Description:</b>	Connect with neighboring communities with cooling centers, develop plan for first responders to check on vulnerable residents and connect them to cooling centers if needed

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

Mitigated Hazards	
	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
	Flood
X	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 R-6.14**

<b>Mitigation Action</b>	Meet with ComEd to push for more robust infrastructure in Village; consider enhancing local regulatory framework of ComEd
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Robbins
<b>Lead Agency/Organization</b>	Robbins
<b>Supporting Agencies/Organizations</b>	ComEd
<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> <li>• Involve stakeholders to enhance the local capacity to mitigate, prepare for, and respond to the impacts of natural hazards.</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>• Increase the resilience of (or protect and maintain) infrastructure and critical facilities.</li> <li>• Establish partnerships among all levels of local government, the private sector, and/or nongovernmental organizations to improve and implement methods to protect people and property.</li> </ul>
<b>Potential Funding Source</b>	N/A
<b>Estimated Cost</b>	N/A
<b>Benefits (loss avoided)</b>	N/A
<b>Projected Completion Date</b>	TBD
<b>Priority and Level of Importance (Low, Medium, High)</b>	N/A
<b>Benefit Analysis (Low, Medium, High)</b>	N/A
<b>Cost Analysis (Low, Medium, High)</b>	N/A
<b>Actual Completion Date</b>	TBD

<b>Recommended Mitigation Action/Implementation Plan and Project Description</b>
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<b>Action/Implementation Plan and Project Description:</b>	Meet with ComEd to push for more robust infrastructure in Village; consider enhancing local regulatory framework of ComEd
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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
	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
X	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 R-6.15**

<b>Mitigation Action</b>	Explore service sharing with other municipalities for snow removal
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Robbins
<b>Lead Agency/Organization</b>	Robbins
<b>Supporting Agencies/Organizations</b>	Nearby communities that might want to engage in service sharing or joint contracting/procurement
<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>• Involve stakeholders to enhance the local capacity to mitigate, prepare for, and respond to the impacts of natural hazards.</li> </ul>
<b>Applicable Objective</b>	<ul style="list-style-type: none"> <li>• Establish partnerships among all levels of local government, the private sector, and/or nongovernmental organizations to improve and implement methods to protect people and property.</li> </ul>
<b>Potential Funding Source</b>	N/A
<b>Estimated Cost</b>	N/A
<b>Benefits (loss avoided)</b>	N/A
<b>Projected Completion Date</b>	TBD
<b>Priority and Level of Importance (Low, Medium, High)</b>	N/A
<b>Benefit Analysis (Low, Medium, High)</b>	N/A
<b>Cost Analysis (Low, Medium, High)</b>	N/A
<b>Actual Completion Date</b>	TBD

<b>Recommended Mitigation Action/Implementation Plan and Project Description</b>	
<b>Action/Implementation Plan and Project Description:</b>	Explore service sharing with other municipalities for snow removal.

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

<b>2022</b>		
<b>2023</b>		

Mitigated Hazards	
	<b>All Hazards</b>
	Dam/Levee Failure
	Drought
	Earthquake
	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
X	Snow
X	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 R-6.16**

<b>Mitigation Action</b>	Flood Control on Midlothian Creek
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Robbins
<b>Lead Agency/Organization</b>	MWRD
<b>Supporting Agencies/Organizations</b>	Robbins
<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 and potential damage from such activities.</li> </ul>
<b>Applicable Objective</b>	<ul style="list-style-type: none"> <li>• Increase the resilience of (or protect and maintain) infrastructure and critical facilities.</li> <li>• Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change.</li> <li>• Integrate hazard mitigation policies into land use plans in the planning area.</li> <li>• Provide or improve flood protection on a watershed basis with flood control structures and drainage maintenance plans.</li> <li>• Strengthen codes and land use planning and their enforcement, so that new construction or redevelopment can avoid or withstand the impacts of natural hazards.</li> <li>• Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.</li> </ul>
<b>Potential Funding Source</b>	Local and Regional Agencies, Grants
<b>Estimated Cost</b>	\$11,000,000
<b>Benefits (loss avoided)</b>	N/A
<b>Projected Completion Date</b>	TBD

Priority and Level of Importance (Low, Medium, High)	N/A
Benefit Analysis (Low, Medium, High)	N/A
Cost Analysis (Low, Medium, High)	High
Actual Completion Date	TBD

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

<b>Action/Implementation Plan and Project Description:</b>	ID: Robbins 2 Contract: 14-253-5F / 17-IGA-02 Watershed: Little Cal River Location: Robbins, IL Creation of a naturalized wetland detention area along with channel improvements to resemble a park setting. The project will reduce flood damages for over 92 structures. The actual MWRD cost share will be determined based upon funding being sought from various local and regional agencies as well as grants.
--	--

**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
	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 R-6.2**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# R-6.2	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 R-6.5**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# R-6.5	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		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 R-6.8**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# R-6.8	Consider the development and implementation of a Capital Improvements Program (CIP) to increase the Village’s regulatory, financial and technical capability to implement mitigation actions.	
Status Description: Yes		O
<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		



### Completed Mitigation Actions

Robbins 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

ROBBINS EXISTING CONDITIONS	
2010 Population	5,337
Total Assessed Value of Structures and Contents	\$2,174,177,985
Area in 100-Year Floodplain	177.06 acres
Area in 500-Year Floodplain	192.37 acres
Number of Critical Facilities	20

HAZARD EXPOSURE IN ROBBINS						
	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	1,206	371	\$90,582,418	\$63,048,074	\$153,630,492	7.07%

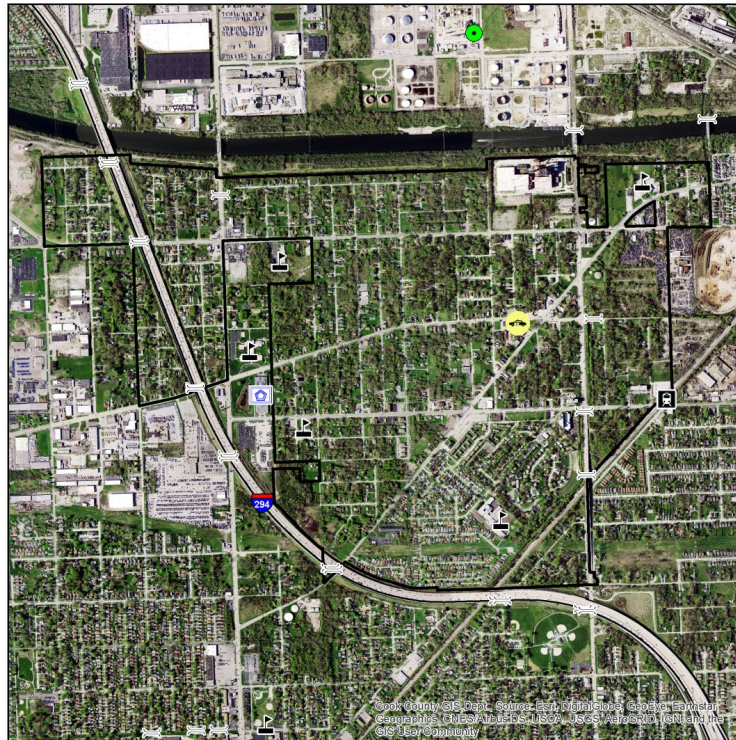
500-Year	1,248	384	\$92,568,238	\$64,040,985	<b>\$156,609,223</b>	7.20%
<b>Tornado</b>						
100-Year	—	—	\$305,404,485	\$238,229,802	<b>\$543,634,287</b>	25.00%
500-Year	—	—	\$964,943,346	\$865,377,940	<b>\$1,830,321,286</b>	84.18%

**ESTIMATED PROPERTY DAMAGE VALUES IN ROBBINS**

	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%
U. Salt Cr. #2	\$0	\$0	<b>\$0</b>	0.00%
Touhy	\$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	\$16,583,155	\$5,635,681	<b>\$22,218,836</b>	1.02%
<b>Flood</b>				
10-Year	\$2,394,507	\$1,203,827	<b>\$3,598,334</b>	0.17%
100-Year	\$5,550,042	\$2,650,971	<b>\$8,201,013</b>	0.38%
500-Year	\$10,309,473	\$5,029,661	<b>\$15,339,134</b>	0.71%

<b>Tornado</b>				
100-Year	\$30,540,448	\$23,822,980	<b>\$54,363,429</b>	2.50%
500-Year	\$140,881,729	\$126,345,179	<b>\$267,226,908</b>	12.29%

# Hazard Mapping

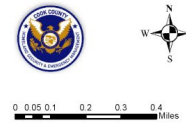


## VILLAGE OF ROBBINS

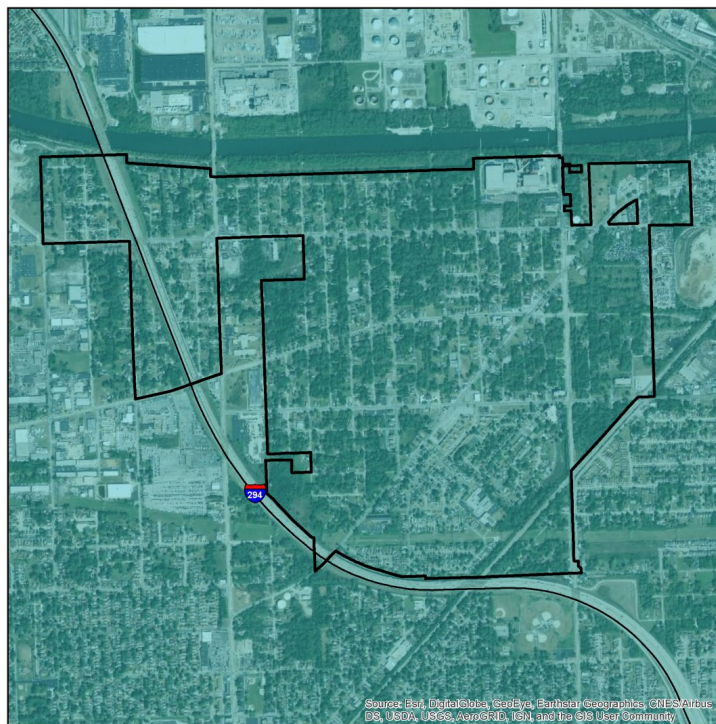
### CRITICAL INFRASTRUCTURE

- 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



Cook County GIS Data Sources: Esri, DeLorme, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



## VILLAGE OF ROBBINS

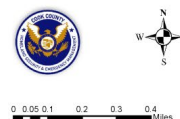
### PEAK GROUND ACCELERATION FOR A 100 YEAR EARTHQUAKE EVENT

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

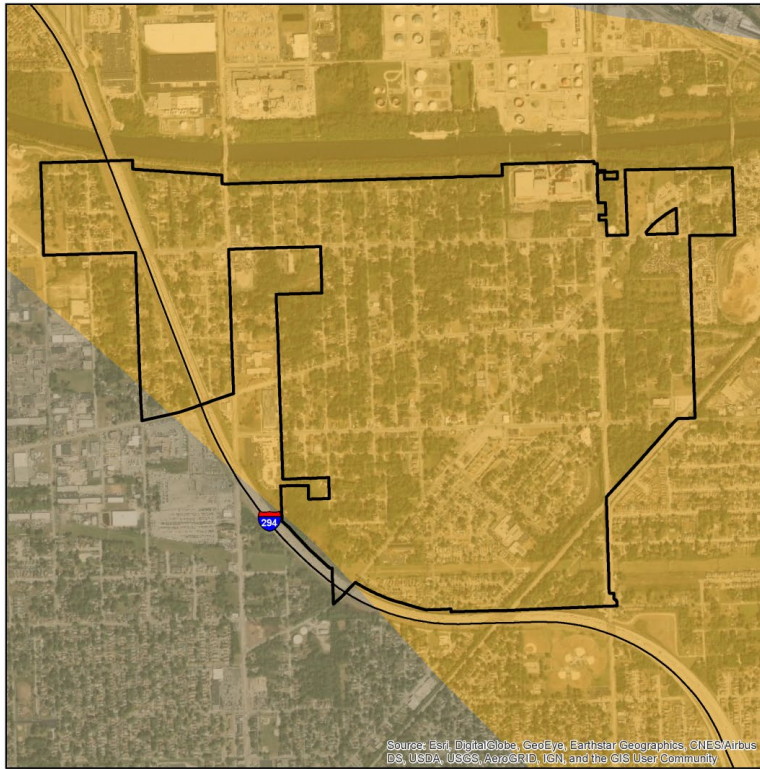
Data provided by the USGS Earthquake Hazards Program and Cook County

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



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

### VILLAGE OF ROBBINS

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

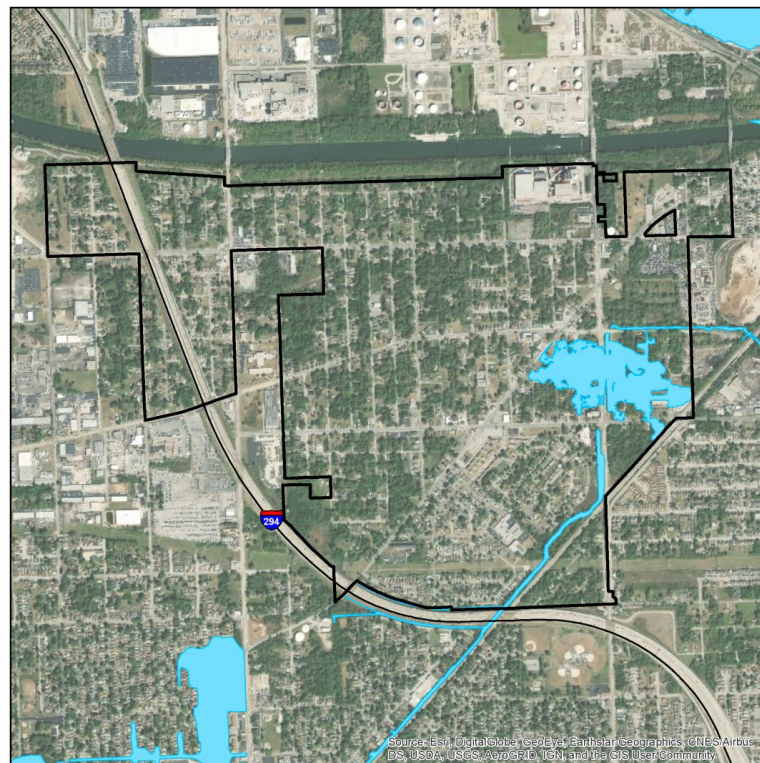
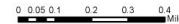
**TYPE**

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

### VILLAGE OF ROBBINS

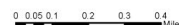
#### COOK COUNTY MWRDGC 100-YEAR INUNDATION AREA

- 100-year Inundation Area

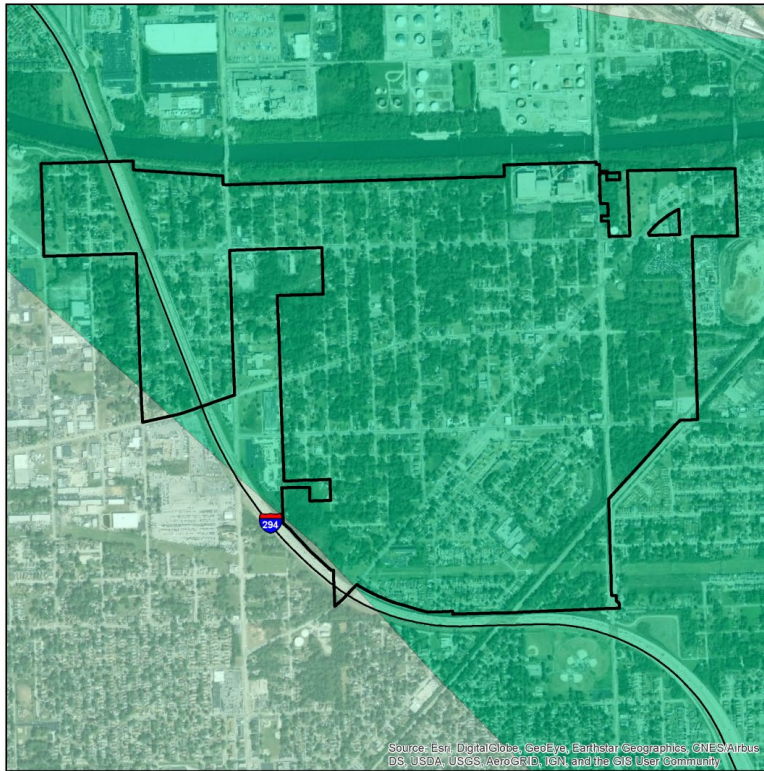
MWRDGC Data provided by Metropolitan Water Reclamation District of Greater Chicago and Cook County.

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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>.







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

### VILLAGE OF ROBBINS

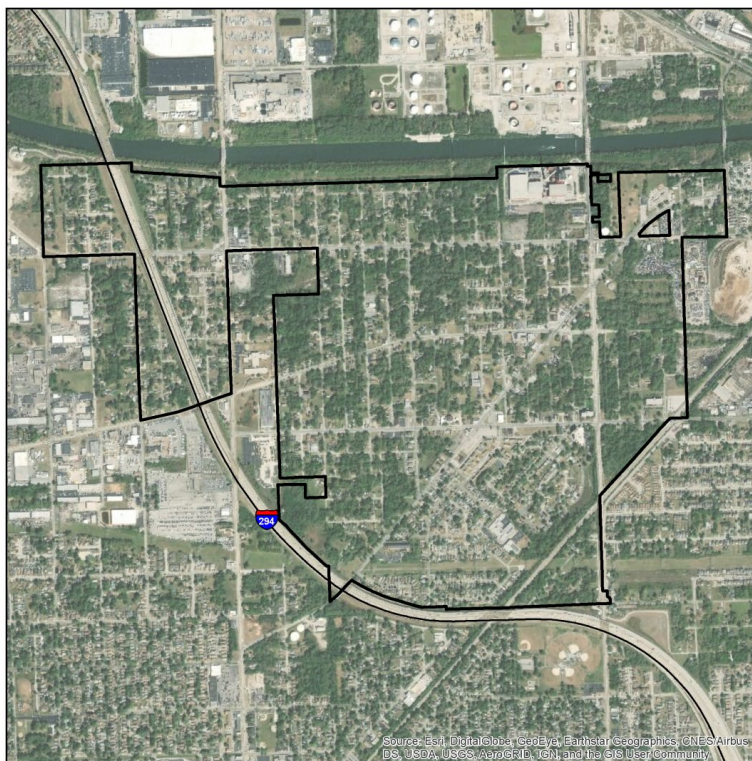
#### LIQUEFACTION SUSCEPTIBILITY

- LIQUEFACTION SUSCEPTIBILITY**
- high
  - low
  - very low

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 II work. The USGS Geologic Investigation Series I-2789 Map of Surficial Deposits and Materials in the Eastern and Central United States (East of 100 degrees West Longitude) by David S. Fullerton, Charles A. Bush and Jean N. Henneill (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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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### VILLAGE OF ROBBINS

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

**Magnitude**

- 4 (100 year event)
- 5 (500 year event)

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

