

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

**Sauk Village Annex**

**FINAL**

July 2019

Prepared for:



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## Hazard Mitigation Point of Contact

<b>Primary Point of Contact</b>	<b>Alternate Point of Contact</b>
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## Jurisdiction Profile

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

- **Date of Incorporation:** 1957
- **Current Population:** 10,346 as of the 2018 U.S. Census population estimate.
- **Population Growth:** Based on data tracked by the United States Census Bureau, the population of Sauk Village has decreased slightly, by less than 1% since 2010.
- **Location and Description:** Sauk Village is in far south east Cook County approximately 20 miles south of the Chicago border. Sauk Village is bordered by Chicago Heights, Ford Heights, and Lynwood to the north; Steger and Crete to the south, South Chicago Heights to the west; and Dyer, Indiana to the east. Sauk Village is 3.4 square miles and is predominately a bedroom community. In recent years, a warehouse/small industry district was developed on the west side of IL 394 which runs through Sauk Village.
- **Brief History:** The area that is now Sauk Village was originally named Strassburg after a town in France. Many of the original settlers were from France and Germany and had moved west from the east coast. When the Calumet Expressway (now IL 394) was opened in the late 1950s, the area was seen as prime real estate and construction of homes began. The town was incorporated in 1957 as Sauk Village since there was already a Strassburg in southern Illinois. Over the years, more subdivisions were built and in the 1990s, Sauk Village began to see an influx of bigger businesses moving in.
- **Climate:** Sauk Village’s climate is warm during summer when temperatures tend to be in the 70s and very cold during winter when temperatures tend to be in the 20s. The warmest month of the year is July with an average maximum temperature of 83.70 degrees Fahrenheit, while the coldest month of the year is January with an average minimum temperature of 14.80 degrees Fahrenheit. Temperature variations between night and day tend to be fairly limited during summer with a difference that can reach 19 degrees Fahrenheit, and fairly limited during winter with an average difference of 15 degrees Fahrenheit. The annual average precipitation at Sauk Village is 38.65 inches. Rainfall is fairly evenly distributed throughout the year. The wettest month of the year is June with an average rainfall of 4.66 inches.
- **Governing Body Format:** Sauk Village is governed by an elected six-member Board of Trustees, Mayor, and Village Clerk. This body of Government will assume the responsibility for the adoption and implementation of this plan. The Village Board of Trustees hires the Village Manager/Administrator (according to ordinance re-establishing the position in 2011 and rescinded in 2012 not since re-established), Treasurer, Police Chief, Fire Chief, EMA Director, Public Works Superintendent, other Village Department Heads and members of Committees and Commissions with the “advice and consent” of the Village Board of Trustees. Sauk Village operates six departments including: Community Development, Finance Department, Fire Department, Police Department, Public Works Department, and Emergency Management Agency.

- **Development Trends:** The largest growth of the village came in the early 1990s when the village annexed nearly 1 square mile as a result of a major land grab with neighbors Steger and Ford Heights. The largest parcel annexed came in 1991 when 500 acres at the northwest corner of Sauk Trail and the Calumet Expressway was finally added to the village. Development would finally take off in 2004 when Sauk Village marketed the property to national developers. In November 2004 the company entered into a development agreement with the village. In March 2005, development on the first 100 acres began. In its master plan, the company planned to spend \$150 million to develop 5,000,000 square feet of warehouse and manufacturing space. Logistics Center Business Park currently occupies 325 acres and has a 496,260-square-foot distribution facility (expandable up to 1.2 million square feet). The 1990s saw completion of the Deer Creek Subdivision on Sauk Village’s far west boundary, the Carolina subdivision, and another modular home community that was completed in the early 2000s in the far northeast jurisdiction. Housing development stopped in 2005. The newest subdivision named Lincoln Meadows started with access from Steger Rd with plans to hook into the original Indian Hill subdivision at Yates and Jeffrey Avenues. Approximately 50 homes were built, but the project stopped short when the housing market turned sour in the mid-2000s. In 2018 Sauk Village closed on the sale of 32 acres of land the Village owned for 14 years. Sauk Village made \$1.35 million dollars on the deal. A Gas-N-Wash came to Sauk Village, a great addition to the community that will bring in over \$500,000 in revenue to the Village each year, which will provide the residents with a gas station, car wash, restaurant and about 80 new jobs. Economic Development has been a key component to the Strategic Plan for Progress and reiterates the commitment in our new Comprehensive Plan. Sauk Village has secured a \$350,000 grant for Phase 1 Engineering in the LogistiCenter. The study is critical for the expansion of the industrial park which will bring Sauk Village new business opportunities. The study will get underway in 2019 and will be completed by 2020.

## Capability Assessment

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

TABLE: LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
<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. SVC, Chapter 14, article II, 2/12/2013
Zonings	Yes	No	No	Yes	(65 ILCS 5/) Illinois Municipal Code. SVC, Chapter 82, 2/12/2013
Subdivisions	Yes	No	No	Yes	SVC, Chapter 82, Article 5, 2/12/2013
Stormwater Management	Yes	No	Yes	Yes	State regulates industrial activity from Construction sites 1 acre or larger under section 402 CWA. SVC, Chapter 26, Article III, 2/12/2013
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	Yes	No	No	No	SVC, Chapter 82, Article IV, section 82-98, 2/12/2013
Public Health and Safety	Yes	No	No	Yes	Fire- 1977/2005 Police-1977/2005 EMA- 1977/2005 Public Health- 1977/2005
Environmental Protection	Yes	No	No	No	SVC, Chapter 26,2/12/2013
<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>					N/A
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	Yes	No	Yes		Regional stormwater impacts are managed by MWRD. The Village lies within the Little Calumet River 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
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	Yes
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

**TABLE: ADMINISTRATIVE AND TECHNICAL CAPABILITY**

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	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	Village Finance Director
Surveyors	Yes	Robinson Engineering
Personnel skilled or trained in GIS applications	Yes	Cook County GIS Consortium
Scientist familiar with natural hazards in local area	No	Sauk Village EMA director and deputy fire chief
Emergency manager	Yes	Sauk Village EMA director and deputy fire chief
Grant writers		

**TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

What department is responsible for floodplain management in your jurisdiction?	Department of Public Works
Who is your jurisdiction’s floodplain administrator? (department/position)	Department of Public Works
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	2000
When was the most recent Community Assistance Visit or Community Assistance Contact?	2/1/1998

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- Robinson Engineering
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?	Unknown
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; Undecided

**TABLE: COMMUNITY CLASSIFICATIONS**

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection/ISO	Yes	4	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: 0
- Number of FEMA-Identified Severe Repetitive Loss Properties: 0
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties That Have Been Mitigated: 0

TABLE: NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster Number (if applicable)	Date	Preliminary Damage Assessment
Hail	-	7/7/2017	-
Winter Storms	-	1/2013 – 2/2013	Extreme frigid temperatures closed schools Provide warming stations during cold spells. We had almost 90 inches of snow during this winter season
High Winds	DR-4116	4/2013	Damage to several homes (roof, tree damage, flooding and power outages)
Flooding	-	8/2010	Major flooding throughout the region that affected homes and travel everywhere
Winter Storm	-	2009 - 2010	Extreme temperatures and snow which caused traveling difficulty, causing water main breaks throughout town
Lightning	-	Summer 2000s	Lightning strikes caused damage to several homes
High Wind	-	Early 1980s	New homes being built destroyed by major wind storm
Winter Storm Blizzard	-	1981 or 1982	Snow storm created difficulty to travel in town and throughout region

Winter Storm Blizzard	-	1978	Closed roads and made it hard to travel in town caused problems in responding to emergency calls
Winter Storm Blizzard	-	1967 - 1968	Extreme amount of snow that caused havoc and created problems where kids could not attend school and residents had to walk to stores store shelves became empty because delivery trucks could not get in town

**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:** The Village's elderly and Infrastructure are vulnerable to the impacts of flooding. The Village also lacks low areas and collection areas.

**Extreme Heat:** The elderly and children are vulnerable to extreme heat. Moreover, the Village lacks adequate power sources (alternative supplies, generators, lack backup systems, cooling centers, and staffing).

**High Winds:** The elderly is vulnerable to high winds. The Village lacks adequate power sources (alternative supplies, generators)

**Snow:** The elderly is vulnerable to the impacts of snow. The Village does not have enough warming shelters and warming shelter supplies (alternative power sources, bedding, and evacuation).

**Blizzards:** The elderly are vulnerable to the impacts of blizzards. The Village does not have enough warming shelters and warming shelter supplies (alternative power sources, bedding, and evacuation).

**Extreme Cold:** The elderly is vulnerable to the impacts of extreme cold. The Village does not have enough warming shelters and warming shelter supplies (alternative power sources, bedding, and evacuation).

**Ice Storms:** The elderly is vulnerable to the impacts of ice storms. The Village does not have enough warming shelters and warming shelter supplies (alternative power sources, bedding, and evacuation).

**Tornado:** The Village requires more power sources and alternative sources (generators), as well as evacuation planning, and shelter for evacuees to minimize the impacts of tornadoes.

## 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	51
2	Severe Winter Weather	51
3	Tornado	42
4	Earthquake	32
5	Flood	12
6	Drought	6
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 S1.1</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.						
Ongoing	All	7, 13	Sauk Village	High	FEMA Hazard Mitigation Grants	Long-term (depending on funding)
<b>Action S1.2</b> —Continue to support the countywide actions identified in this plan.						
Ongoing	All	All	Sauk Village	Low	General Fund	Short-and long-term
<b>Action S1.3</b> —Actively participate in the plan maintenance strategy identified in this plan.						
Ongoing	All	3, 4, 6	DHSEM, Sauk Village	Low	General Fund	Short-term
<b>Action S1.4</b> —Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.						

Ongoing	All	3, 4, 5, 6, 7, 9, 10, 11, 13	Sauk Village	Low	General Fund	Long-term
<b>Action S1.5</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	Sauk Village	Low	General Fund	Short-term and ongoing
<b>Action S1.6</b> —Where feasible, implement a program to record high water marks following high-water events.						
Ongoing	Flooding, Severe Weather	3, 6, 9	Sauk Village	Medium	General Fund; FEMA Grant Funds (Public Assistance)	Long-term
<b>Action S1.7</b> —Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.						
Ongoing	All	3, 4, 6, 10, 13	Robinson Engineering	Low	General Fund	Short-term
<b>Action S1.8</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 S1.9</b> —Repair and replace old water system equipment and install air strippers to eliminate contaminants.						
Completed	All	1, 2, 7	Public Works	\$5 million; High	Loan	Completed
<b>Action S1.10</b> —Back up Generator Systems						
New	Drought, Earthquake, Flood, Extreme Heat, High Wind, Snow,	1, 2	Sauk Village Safety Committee	Under investigation ; High	Grants, Fundraisers, Donations	Short-term

	Blizzard, Extreme Cold, Ice Storms, Tornado, Widespread Power Outage, Secondary Impacts from Mass Influx of Evacuees, Hazardous Materials Release					
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**Action S1.11**—Utilize green infrastructure to address urbanized flood-prone areas

New	Flood, Snow	3, 13	TBD	High	Grants	TBD
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(a) Ongoing indicates continuation of an action that is already in place. Short-term indicates implementation within five years. Long-term indicates implementation after five years.

**TABLE: MITIGATION STRATEGY PRIORITY SCHEDULE**

Action Number	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	No	Medium



10	2	High	High	Yes	Yes	Unknown	High
11	2	Medium	High	No	Yes	Yes	Medium

(a) See Chapter 1 for explanation of priorities.

## New Mitigation Actions

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

**Action S-1.10**

<b>Mitigation Action</b>	Back up Generator Systems
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Sauk Village Illinois
<b>Lead Agency/Organization</b>	Sauk Village Safety Committee
<b>Supporting Agencies/Organizations</b>	EMA, Fire, Police, Public Works
<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>• Increase the resilience of (or protect and maintain) infrastructure and critical facilities.</li> </ul>
<b>Potential Funding Source</b>	Grants, fundraisers, donations
<b>Estimated Cost</b>	Under investigation
<b>Benefits (loss avoided)</b>	N/A
<b>Projected Completion Date</b>	Unknown
<b>Priority and Level of Importance (Low, Medium, High)</b>	High
<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>	
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**Recommended Mitigation Action/Implementation Plan and Project Description**

<b>Action/Implementation Plan and Project Description:</b>	
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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
X	Drought
X	Earthquake
X	Flood
X	Extreme Heat
	Lightning
	Hail
	Fog
X	High Wind
X	Snow
X	Blizzard
X	Extreme Cold
X	Ice Storms
X	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
X	Widespread Power Outage
	Coastal Erosion
X	Secondary Impacts from Mass Influx of Evacuees
X	Hazardous Materials Release

**Action S-1.11**

<b>Mitigation Action</b>	Utilize green infrastructure to address urbanized flood-prone area
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	Village of Sauk Village
<b>Lead Agency/Organization</b>	TBD
<b>Supporting Agencies/Organizations</b>	TBD
<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>• Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change.</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>	Grants
<b>Estimated Cost</b>	TBD
<b>Benefits (loss avoided)</b>	Stormwater management and green infrastructure will help reduce flooding events, particularly street and basement flooding issues, while also improving water quality.
<b>Projected Completion Date</b>	TBD
<b>Priority and Level of Importance (Low, Medium, High)</b>	Medium
<b>Benefit Analysis (Low, Medium, High)</b>	Medium—Project will have a long-term impact on the reduction of risk exposure for life and

	property, or project will provide an immediate reduction in the risk exposure for property.
<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>	<p>While much of Sauk Village’s residential and commercial areas were built with some stormwater management infrastructure, many areas no longer meet the best practices. As a result, some areas may not have the green or grey infrastructure in place to handle significant rainfall events. Retrofitting existing development in Sauk Village can help reduce flooding events while also improving water quality. Stormwater management and green infrastructure can be incorporated at schools, churches, single-family, roadway and parkway redevelopments, especially those located in priority areas with higher risk of flooding.</p> <p>The following conceptual plans, as described in the Village’s 2019 Comprehensive Plan, can serve as pilot projects to be replicated elsewhere in Sauk Village and could be phased over several years depending on funding sources and partnership agreements:</p> <ol style="list-style-type: none"> <li>1. SCHOOL AND CHURCH CONCEPT PLAN. Three schools and five churches are located within the priority areas. Though Wagoner Elementary School was chosen to illustrate the concept, other schools and the local churches could consider how their campuses could be improved with these strategies. The Village should consider partnering with the Community Consolidated School District 168 and the local churches to implement regional stormwater management and green infrastructure projects on their properties. Through these partnerships green infrastructure projects could be incorporated into their capital improvement plans. In addition, grant proposals to redesign their green space, playgrounds, or athletic fields could incorporate stormwater management best practices. The school district could also apply for stormwater funds, such as MWRD’s Green Infrastructure Fund, and note the additional educational benefits for students. Public rights-of-way (ROW) offer opportunities for the installation of green infrastructure practices such as permeable pavers, bioswales, and bioretention basins. Sauk Village should implement these practices in the parkways and other public ROWs during reconstruction or repair of streets, sidewalks, and storm sewers.</li> <li>2. RESIDENTIAL CONCEPT PLAN. A single-family residential neighborhood block located south of 223rd Street between Brookwood Drive and Murphy Avenue that has flooding issues was selected as an example. A conceptual plan developed for this area includes expanding the existing detention basin, along</li> </ol>
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	<p>with the installation of bioswales that will minimize the amount of runoff being discharged to the pond.</p> <p>3. PARKWAY CONCEPT PLAN. 223rd Street is a transportation corridor with a significant large parkway in its ROW. A conceptual plan was developed for 223rd Street that incorporates bioswales to retain stormwater runoff from the roadway and reduce flow discharges to the storm sewer system and Lansing Ditch.</p> <p>4. PARKLAND CONCEPT PLAN. Park and undeveloped land adjacent to streams could be utilized for the installation of green infrastructure and dry detention basins that provide stormwater storage during high peak flow events. These areas could have multiple uses as they could serve as athletic/recreational fields most of the time and as off-line detention basins during storm events. Murphy Park, located by 224th Street and Theisen Avenue, is at the downstream end of a residential neighborhood with moderate road slopes that drain mainly to the park. A conceptual design for this park shows the use of permeable pavement to reduce stormwater discharges and adds surface detention storage to control stormwater volumes being discharged to the Lansing Ditch. Sauk Village should encourage private property owners to incorporate green infrastructure practices such as planting native trees and installing rain barrels, rain gardens, or bioswales in their yards. The Village could also create a voluntary cost sharing program that provides technical and financial assistance, as well as to help pay for private improvements that enhance drainage and mitigate flooding.</p>
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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
X	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 Release



### 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 S-1.1**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.1	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	To be considered when funding is available.	X
Completion status legend: <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		

**Action S-1.2**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.2	Continue to support the countywide actions identified in this plan.	
Status Description: Yes	Transmittal of required information to keep the plan updated.	O
Completion status legend: <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		

**Action S-1.3**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.3	Actively participate in the plan maintenance strategy identified in this plan.	
Status Description: Yes	Transmittal of required information to keep the plan updated.	O
Completion status legend: <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		

**Action S-1.4**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.4	Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.	
Status Description: No	To be considered in the future.	X
Completion status legend: <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		

**Action S-1.5**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.5	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	For proposed new developments, Sauk Village ensured that developments would not be located in floodplain areas to minimize the risk of losses during flooding events.	O
<p>Completion status legend:  <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 S-1.6**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.6	Where feasible, implement a program to record high water marks following high-water events.	
Status Description: No	To be considered in the future.	X
<p>Completion status legend:  <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 S-1.7**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.7	Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.	
Status Description: No	A new comprehensive plan is in the process of being prepared for the Village. The hazard mitigation plan will be integrated into this plan.	X
Completion status legend: <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		

**Action S-1.8**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.8	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: No	Sauk Village is beginning to plan for the development of CIPs for the Village's infrastructure.	X
Completion status legend: <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

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

**Action S-1.9**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# S—1.9	Repair and replace old water system equipment and install air strippers to eliminate contaminants.	
Status Description: Yes	Project completed. New equipment with a 20-year design life installed, and safe water reliably being supplied. Remove from action plan.	C
<p style="text-align: center;">Completion status legend:</p> <p style="text-align: center;"><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>		

## 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

SAUK VILLAGE EXISTING CONDITIONS	
2010 Population	10,506
Total Assessed Value of Structures and Contents	\$1,280,272,937
Area in 100-Year Floodplain	435.62 acres
Area in 500-Year Floodplain	476.71 acres
Number of Critical Facilities	35

HAZARD EXPOSURE IN SAUK VILLAGE						
	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	<b>\$0</b>	0.00%
U. Salt Cr. #2	0	0	\$0	\$0	<b>\$0</b>	0.00%
Touhy	0	0	\$0	\$0	<b>\$0</b>	0.00%
U. Salt Cr. #3	0	0	\$0	\$0	<b>\$0</b>	0.00%
U. Salt Cr. #4	0	0	\$0	\$0	<b>\$0</b>	0.00%
<b>Flood</b>						
100-Year	23	7	\$2,551,152	\$1,344,392	<b>\$3,895,544</b>	0.30%

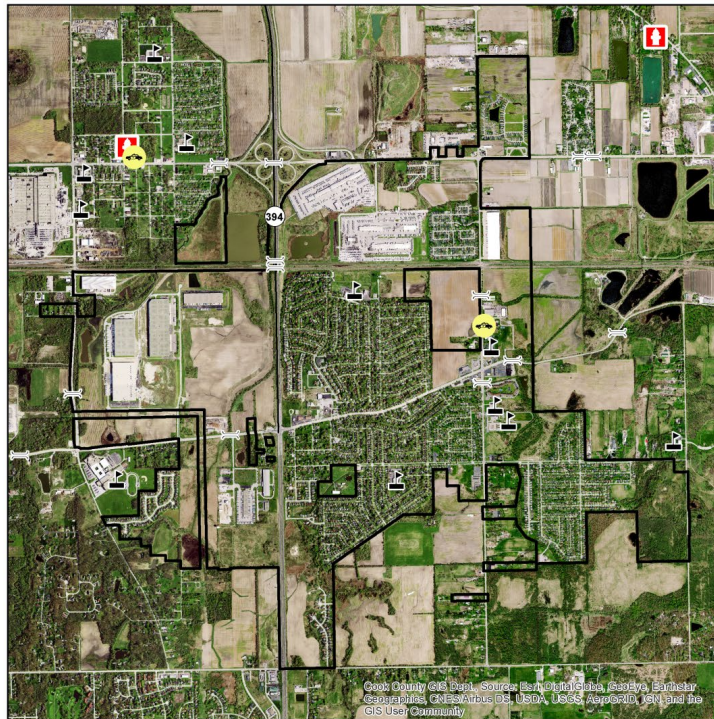
500-Year	0	0	\$4,103,285	\$2,120,459	<b>\$6,223,744</b>	0.49%
<b>Tornado</b>						
100-Year	—	—	\$319,300,608	\$186,879,259	<b>\$506,179,867</b>	39.54%
500-Year	—	—	\$358,912,057	\$211,132,347	<b>\$570,044,404</b>	44.53%

**ESTIMATED PROPERTY DAMAGE VALUES IN SAUK VILLAGE**

	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	\$1,947,778	\$506,887	<b>\$2,454,665</b>	0.19%
<b>Flood</b>				
10-Year	\$0	\$0	<b>\$0</b>	0.00%
100-Year	\$53,488	\$19,065	<b>\$72,553</b>	0.01%
500-Year	\$214,684	\$94,936	<b>\$309,620</b>	0.02%

<b>Tornado</b>				
100-Year	\$31,930,061	\$18,687,926	<b>\$50,617,987</b>	3.95%
500-Year	\$52,401,160	\$30,825,323	<b>\$83,226,483</b>	6.50%

# Hazard Mapping



## VILLAGE OF SAUK VILLAGE

### CRITICAL INFRASTRUCTURE

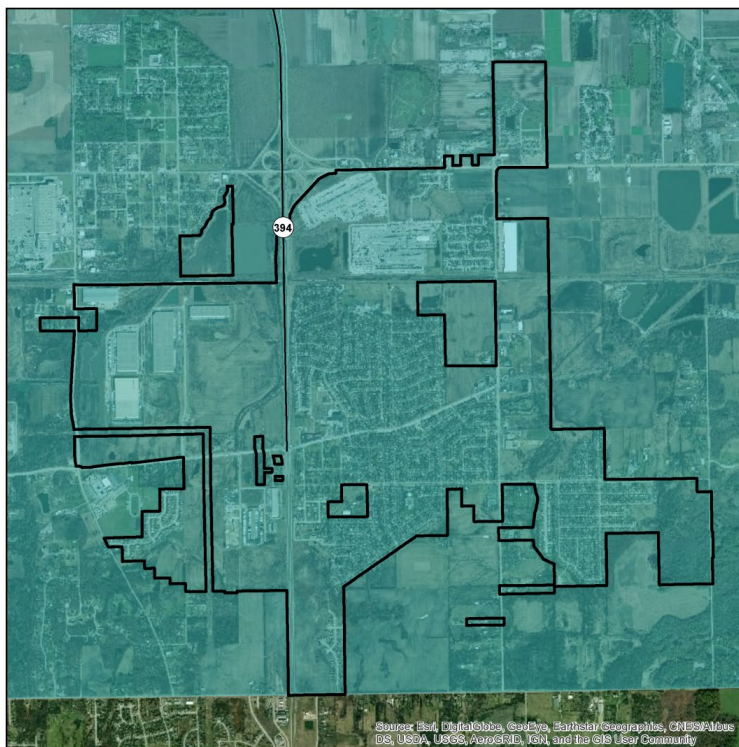
- Oil Facilities
- Transit Centers
- Military Facilities
- Police Stations
- Fire Stations
- Hazardous Waste
- Airports
- Hospitals
- Highway Bridges
- Warming Centers
- Cooling Centers
- Schools
- Railroad Stations

Base Map Data Sources:  
Cook County, ESRI



0 0.125 0.25 0.5 0.75 1 Miles

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



## VILLAGE OF SAUK VILLAGE

### 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.

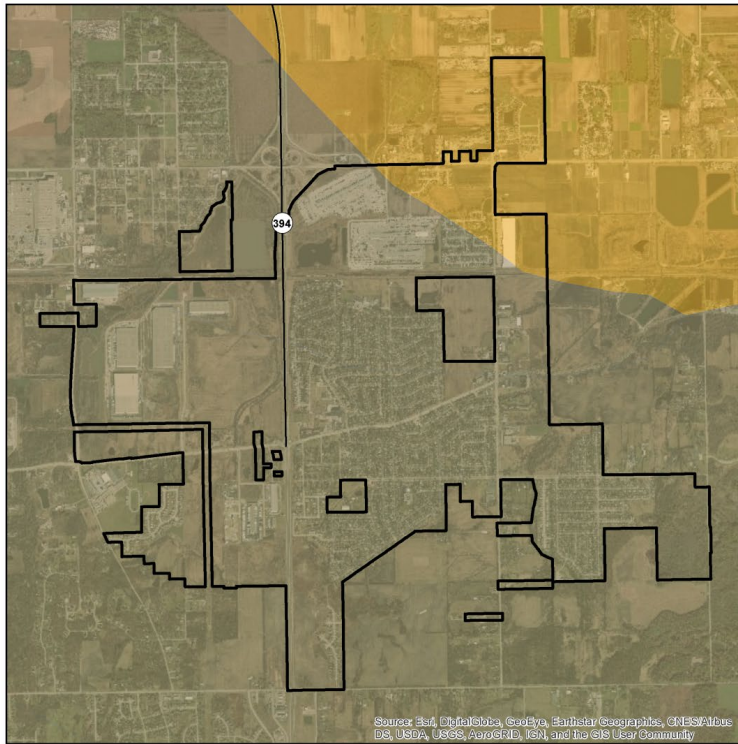
Probabilistic seismic-hazard maps were prepared for the conterminous United States for 2014 portraying peak horizontal acceleration and horizontal spectral response acceleration for 0.2- and 1.0-second periods with probabilities of exceedance of 10 percent in 50 years and 2 percent in 50 years. All of 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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0 0.125 0.25 0.5 0.75 1 Miles

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



**VILLAGE OF SAUK VILLAGE**  
**NATIONAL EARTHQUAKE HAZARD REDUCTION PROGRAM (NEHRP) SOIL CLASSIFICATION**

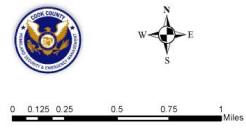
**TYPE**

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

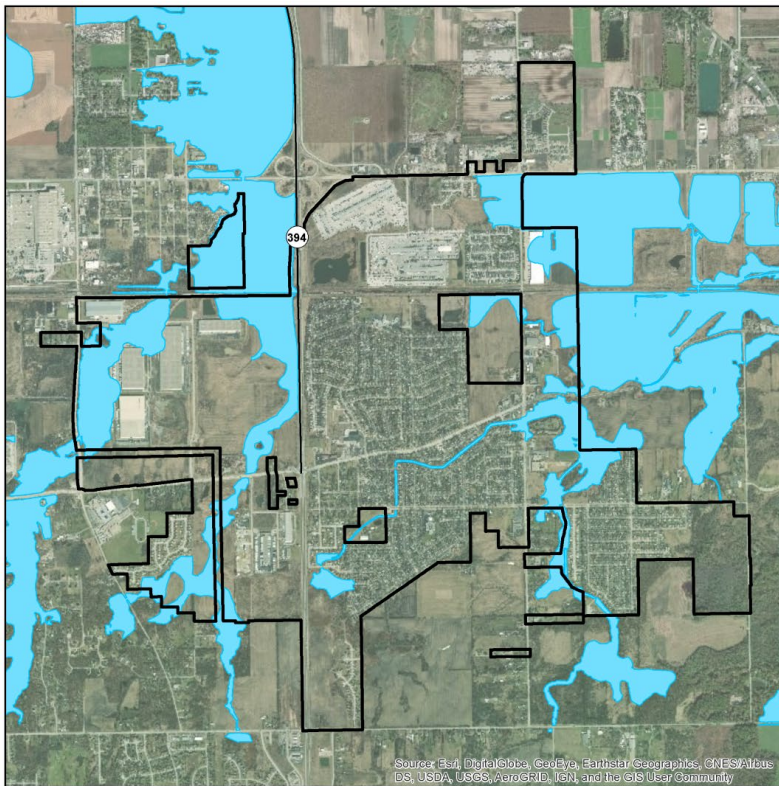
Data provided by the Illinois State Geological Survey and Cook County.

The Central United States Earthquake Consortium (CIUSEC) 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 1-2788 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. CIUSEC 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



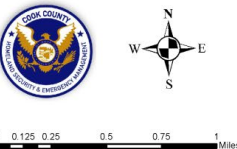
**VILLAGE OF SAUK VILLAGE**  
**COOK COUNTY MWRDGC 100-YEAR INUNDATION AREA**

100-year Inundation Area

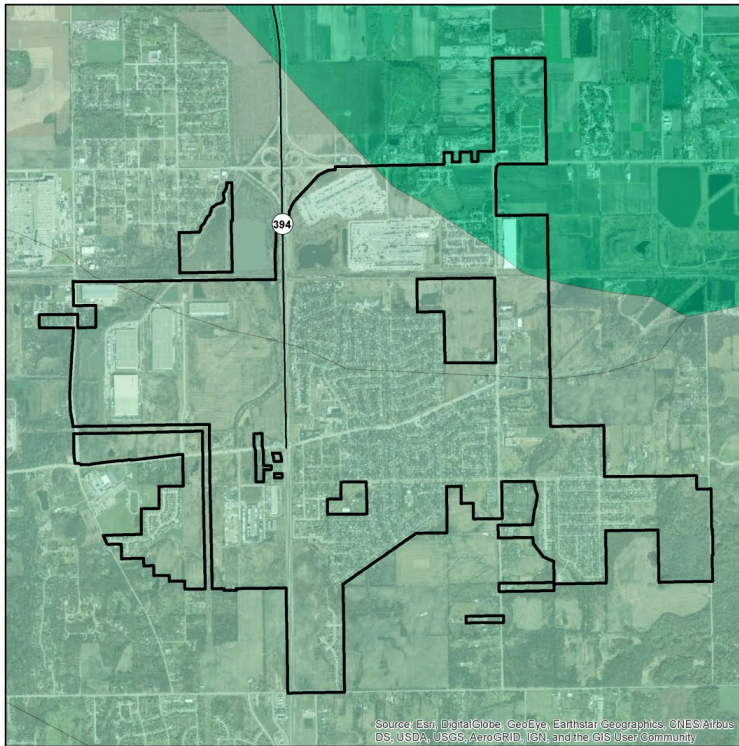
MWRDGC Data provided by Metropolitan Water Reclamation District of Greater Chicago and Cook County.

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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 SAUK VILLAGE

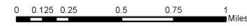
LIQUEFACTION SUSCEPTIBILITY

- 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-2755 Map of Surficial Deposits and Materials in the Eastern and Central United State (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, 2003) 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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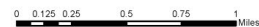
VILLAGE OF SAUK VILLAGE

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.



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