

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

**Blue Island Annex**

**FINAL**

July 2019

Prepared for:



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## Hazard Mitigation Point of Contact

Primary Point of Contact	Alternate Point of Contact
Mayor Domingo F. Vargas 708-597-8602 <a href="mailto:dvargas@cityofblueisland.org">dvargas@cityofblueisland.org</a>	Erik Alvarez (Robinson), City Engineer 708-225-8217 and 773-551-7559 <a href="mailto:ealvarez@reld.com">ealvarez@reld.com</a>

## Jurisdiction Profile

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

- **Date of Incorporation:** 1872
- **Current Population:** The US Census estimated the 2016 population to be 23,401.
- **Population Growth:** Based on data from the US Census the City of Blue Island has seen a slight decline in population from 2010 to 2016 with a decrease of 1.27 percent.
- **Location and Description:** Blue Island enjoys a unique position in the south suburbs, possessing uncommon assets and considerable potential for future investment and growth along Chicago’s southwestern border. With an extensive network of major roadways (I-57, Tri-State Tollway, Dixie Highway) and convenient public transit connections to and from the greater Chicago region (via six Metra stations, Pace Bus service, and the nearby CTA), Blue Island is well-matched to the needs of businesses and employees alike. Excellent health care and recreational facilities, walkable neighborhoods, and a diverse housing stock are other key assets that make Blue Island a great place to live, work, and raise a family.
- **Brief History:** The city of Blue Island, Illinois, sits on a glacial bluff that rises out of the prairie south of Chicago. The thickly wooded crown of the ridge appeared to float in a sea of blue wildflowers, giving the town its name. Blue Island is one of the oldest communities in Cook County. In 1835, the settlement was a stop along the Vincennes Trail, an old Indian trail connecting Fort Dearborn with Vincennes, Indiana. The community experienced an early flurry of activity in the 1840s during the construction of a feeder canal (now the Calumet Sag Channel), which is now an integral part of the Illinois & Michigan Canal National Heritage Corridor, established in 1984 by Congress. In the 1860s, brick factories and railroads bolstered employment and growth in the city. During the famous 1894 Pullman Strike, riotous railroad workers and brick makers toppled cars and jeered at strikebreakers, prompting a federal injunction and suppression of the strike nationwide. On July 4, 1894, the Fifteenth U.S. Infantry arrived in Blue Island and imposed martial law. The troops were stationed outside the local Rock Island Depot, which still stands in Blue Island today. The Old Western Historic District in Blue Island contains the home of the town’s first settler, Stephen Jones, and one of the first hardware stores in the city, still in business after 100 years.
- **Climate:** Blue Island, IL, gets 36 inches of rain and 39 inches of snow per year. The US average is 37 inches of rain and 25 inches of snow per year. The number of days with any measurable precipitation is 121. On average, there are 189 sunny days per year in Blue Island, IL. The July high is around 85 degrees and the January low is 17. The comfort index, which is based on humidity during the hot months, is a 46 out of 100, where higher is more comfortable. The US average on the comfort index is 44.
- **Governing Body Format:** The City of Blue Island is governed by a 14-member City Council. This body of Government is responsible for the adoption and implementation of this plan. The City consist of three divisions which Division of Constituent Services, Division of Municipal Services and Division of Public Safety each charged with the management and over site of additional city departments. The Division of Constituent Services is responsible for the Departments

of Finance, Risk Management, Senior Citizens, Planning and Marketing. The Division of Municipal Services is responsible for the Departments of Water, Public Works, Building and Golf. The Division of Public Safety is responsible for the Departments of Police, Fire/Emergency Management, 911, Inspections, Housing Courts and Parking Courts.

- **Development Trends:** Blue Island’s residential parcels make up a majority of the land cover in the community. Single-family parcels cover 28 percent of the total land while two- to three-story multi-family units contribute an additional 9 percent. Out of the total housing units in the community, 46 percent consist of single-family units while the remaining 54 percent consists of multi-family units. A majority (27 percent) of multi-family buildings contain more than five units. A majority of the housing stock is well-maintained and consists of a mix of both aging and new construction. Also, the layout of neighborhoods such that single-family neighborhoods are interspersed with multi-family buildings has resulted in a positive residential character, allowing a variety of housing price points and types to co-exist. According to the 2007-2010 American Community Survey, a majority of housing units (92.1 percent) in Blue Island are valued at less than \$250,000. Compared to the Chicago region, this is a significantly high number. The significant number of affordable homes makes Blue Island a desirable destination for home buyers looking for options close to the City with convenient access to transit. Housing affordability and character differs significantly on either side of the Calumet-Sag Channel. The area north of the Calumet-Sag Channel contains several historic and well maintained neighborhoods within the Uptown District and north of 127th Street. In contrast, although newer home developments and attractive residential units exist south of the Channel, there are large areas that appear to need better maintenance and large vacant properties that detract from the overall neighborhood character. Mobile homes are present in small pockets to the south and east in Blue Island. According to the Homes for a Changing Region report, high vacancy rates, large percentage of economically distressed homes, and overcrowding are the three major issues faced by the City’s housing stock. Due in part to the national foreclosure crisis, vacant units nearly doubled in Blue Island in the past decade from 503 in 2000 to 920 in 2009. This represents an 83 percent increase over the period. Blue Island offers incentives to businesses and has available properties as of 2019.

## 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	Ordinance No. 12 168 adopted 2012
Zonings	Yes	No	No	Yes	Ordinance No. 2151 adopted 1971 and amended over time. Ordinance No. 12-185 adopted 2012
Subdivisions	Yes	No	No	No	Ordinance No. 1767 adopted 1956
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	(765ILCS 77/) Residential Real Property Disclosure Act
Growth Management	Yes	No	No	No	Comprehensive Plan- June 26, 2012

Site Plan Review	Yes	No	No	No	Ordinance No. 2151 adopted 1971 and amended over time. Ordinance No. 12185 adopted 2012
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	Yes	No	No	No	City of Blue Island Transit-Oriented Development Plan (1999) City of Blue Island Comprehensive Plan (2012) South COD Plan (2011)
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>					Yes, Comp plan includes land use and environment elements.
Floodplain or Basin Plan	Yes	No	No	No	Ordinance No. 89-189 adopted 1989
Stormwater Plan	No	No	MWRD	No	Regional stormwater impacts are managed by MWRD. The Village lies within the Calumet-Sag 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	Green River Pattern Book (2009)

Economic Development Plan	Yes	No	Yes	Yes	Blue Island Plan for Economic Development (2005). Calumet River Corridor Economic Development Vision and Strategy (2007)
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	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No



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	Department of Building and Planning, Building and Planning Commissioner, Supervisor of Buildings, City Engineer.
Engineers or professionals trained in building or infrastructure construction practices	Yes	City Engineer
Planners or engineers with an understanding of natural hazards	No	N/A
Staff with training in benefit/cost analysis	No	N/A
Surveyors	No	N/A
Personnel skilled or trained in GIS applications	Yes	Cook County GIS Consortium, Department of Building and Planning, Building and Planning Commissioner, Supervisor of Buildings
Scientist familiar with natural hazards in local area		N/A
Emergency manager	Yes	Cook County DHSEM
Grant writers	Yes	Department of Building and Planning, Building and Planning Commissioner, Supervisor of Building, Supervisor of Planning.

TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your jurisdiction?	Building and Planning Department
Who is your jurisdiction’s floodplain administrator? (department/position)	Building Official
Are any certified floodplain managers on staff in your jurisdiction?	No

What is the date of adoption of your flood damage prevention ordinance?	Ordinance No. 89-189 adopted 1989
When was the most recent Community Assistance Visit or Community Assistance Contact?	01/12/1999
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? (If no, please state why)	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	Yes
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, The city is interested in joining

<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	Yes	Unknown	N/A
Public Protection/ISO	Yes	Class 4	2014
StormReady	Yes	Gold (Countywide)	2014
Tree City USA	Yes	N/A	2013

## 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: N/A

<b>TABLE: NATURAL HAZARD EVENTS</b>			
<b>Type of Event</b>	<b>FEMA Disaster Number (if applicable)</b>	<b>Date</b>	<b>Preliminary Damage Assessment</b>
Flood	-	9/3/2018	-
Severe Storms	-	7/24/2016	-
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 Storms	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.

***Flooding/Flash Flooding:*** The City of Blue Island has experienced multiple incidences of urban and flash flooding. Most of Blue Island is located in either moderate or high urban flooding susceptibility zones. During past incidences, flooding has been reported in places like the left lane of Interstate 57 near mile marker 351. Flooding in numerous structures along the Cal-Sag Channel has prompted the City to invest in mitigation of this hazard.

***Thunderstorm Wind:*** Blue Island has experienced numerous thunderstorm wind events throughout the village. Impacts have included damage to property (particularly in the industrial areas of the village), trees, and power lines.

## 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	Tornado	42
4	Earthquake	30
5	Flood	18
6	Drought	4
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 B9.1</b> —SCADA (supervisory control and data acquisition) system upgrades and installation of new water meters.						
Ongoing	Drought	1, 2, 4, 7, 9	Water Department, Public Works	\$4,000,000; Medium	Local, CDBG	Short-term
<b>Action B9.2</b> —Construction of new pump station, reservoirs, valves and water mains.						
Ongoing	Drought, Flood	1, 2, 4, 7, 9	Water Department, Public Works	\$40,000,000; High	Local, CDBG, EPA	Long-term
<b>Action B9.3</b> —HTH Inspections for seismic integrity.						
Removed	Earthquake	1, 2, 6	Local	\$100,000; Medium	Local	Removed

<b>Action B9.4</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	1, 2, 4, 7, 9	Water Department, Public Works, Engineering	High	Local, FEMA Hazard Mitigation Grants	Long-term
<b>Action B9.5</b> —Comprehensive study of drought vulnerability.						
Ongoing	Drought	3, 4, 6, 8	Water Department, Public Works, Engineering	\$45,000; Medium	Local	Short-term
<b>Action B9.6</b> —GIS mapping of critical infrastructure.						
Completed	All	3, 4, 5, 6, 7, 9, 10, 12	Planning Engineering	Medium	Local, CDBG	Completed
<b>Action B9.7</b> —Flood impact study.						
Ongoing	Flood	1, 4, 6, 10	Engineering	\$90,000; Medium	MWRD, Flood Prevention Program	Short-term
<b>Action B9.8</b> —Installation of separate storm sewer system to replace current combined-sewer service within the City.						
Ongoing	Flood, Severe Weather	1, 2, 9	Water Department	\$50,000,000; High	MWRD Phase II. CDBG-DR, FEMA Mitigation Grants	Long-term
<b>Action B9.9</b> —Perform a Community Risk Assessment critical facilities and infrastructure.						
Ongoing	All	3, 4, 5, 6, 8, 10, 11	Planning, Engineering	\$50,000	Local, DHSEM	Short-term
<b>Action B9.10</b> —Update the City's flood damage prevention ordinance. Consider adoption of IDNR model ordinance for the Cook County region.						
Ongoing	Flood	2, 3, 10, 13	Building and Planning	Low	Local	Short-term
<b>Action B9.11</b> —Continue to support the countywide actions identified in this plan.						

Completed	All	All	City of Blue Island	Low	General Fund	Completed
<b>Action B9.12</b> —Actively participate in the plan maintenance strategy identified in this plan.						
Completed	All	3, 4, 6	DHSEM, City of Blue Island	Low	General Fund	Completed
<b>Action B9.13</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 and adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.						
Completed	Flooding	4, 6, 9	Building and Planning Department	Low	General Fund	Completed
<b>Action B9.14</b> —Where feasible, implement a program to record high water marks following high-water events.						
Completed	Flooding, Severe Weather	3, 6, 9	City of Blue Island	Medium	General Fund; FEMA Grant Funds (Public Assistance)	Completed
<b>Action B9.15</b> —Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.						
Completed	All	3, 4, 6, 10, 13	Planning, Engineering	Low	General Fund	Completed
<b>Action B9.16</b> —Hold bi-annual meeting to discuss and update hazard mitigation plan.						
New	All	3, 4, 5, 8, 10, 11	City of Blue Island	\$2,500 per year; Low	Local Municipal Funds	Ongoing
<b>Action B9.17</b> —Flood Control for the Washing Street Area.						
New	Flood	2, 9	MWRD	Unknown	Local and Regional Agencies, Grants	Unknown
(a) Ongoing indicates continuation of an action that is already in place. Short-term indicates implementation within five years. Long-term indicates implementation after five years.						



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

(a) See Chapter 1 for explanation of priorities.

## New Mitigation Actions

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

**Action B - 9.16**

<b>Mitigation Action</b>	Hold bi-annual meeting to discuss and update hazard mitigation plan.
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	City of Blue Island
<b>Lead Agency/Organization</b>	City of Blue Island
<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> <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>• Integrate hazard mitigation policies into land use plans in the planning area.</li> <li>• Develop, improve, and protect systems that provide early warnings, emergency response communications, and evacuation procedures.</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> <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 Municipal Funds
<b>Estimated Cost</b>	\$2,500 per year (estimated staff cost)

<b>Benefits (loss avoided)</b>	These bi-annual meetings will allow the City to update and maintain the existing HMP, as well as create new ideas to improve the communities overall resiliency.
<b>Projected Completion Date</b>	Ongoing 2019 start
<b>Priority and Level of Importance (Low, Medium, High)</b>	High Priority
<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>	Low-The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.
<b>Actual Completion Date</b>	Ongoing

<b>Recommended Mitigation Action/Implementation Plan and Project Description</b>	
<b>Action/Implementation Plan and Project Description:</b>	Blue Island will hold bi-annual mitigation planning meeting to discuss plan updates, implementation, and develop new ideas for incorporation into the existing plans.

<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>	
X	All Hazards
	Dam/Levee Failure
	Drought
	Earthquake
	Flood
	Extreme Heat
	Lightning
	Hail
	Fog
	High Wind
	Snow
	Blizzard

	Extreme Cold
	Ice Storms
	Tornado
	Epidemic or pandemic
	Nuclear Power Plant Incident
	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

**Action B - 9.17**

<b>Mitigation Action</b>	Flood Control for the Washing Street Area
<b>Year Initiated</b>	2019
<b>Applicable Jurisdiction</b>	City of Blue Island
<b>Lead Agency/Organization</b>	MWRD
<b>Supporting Agencies/Organizations</b>	City of Blue Island
<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>• Increase the resilience of (or protect and maintain) infrastructure and critical facilities.</li> <li>• Provide or improve flood protection on a watershed basis with flood control structures and drainage maintenance plans.</li> </ul>
<b>Potential Funding Source</b>	Local and Regional Agencies, Grants
<b>Estimated Cost</b>	TBD
<b>Benefits (loss avoided)</b>	Unknown
<b>Projected Completion Date</b>	Unknown
<b>Priority and Level of Importance (Low, Medium, High)</b>	Unknown
<b>Benefit Analysis (Low, Medium, High)</b>	Unknown
<b>Cost Analysis (Low, Medium, High)</b>	Unknown
<b>Actual Completion Date</b>	Unknown

<b>Recommended Mitigation Action/Implementation Plan and Project Description</b>	
<b>Action/Implementation Plan and Project Description:</b>	ID: Blue Island 1 Contract: 14-260-5F Watershed: Cal-Sag Channel Location: Blue Island, IL Stormwater storage and conveyance improvements to address flooding of approximately 45 structures.

<b>Mitigation Action and Project Maintenance</b>		
<b>Year</b>	<b>Status</b>	<b>Comments</b>

<b>2019</b>	New	MWRD and the City are investigating additional flood control alternatives in order to ensure that the most effective solution is selected.
<b>2020</b>		
<b>2021</b>		
<b>2022</b>		
<b>2023</b>		

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

### Ongoing Mitigation Actions

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



**Action B - 9.1**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.1	SCADA (supervisory control and data acquisition) system upgrades and installation of new water meters	
Status Description: Yes	The City's SCADA system is currently under review for proposed upgrades. A committee has been formed to facilitate upgrading the City's water infrastructure and detailed plans and are under construction.	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 B - 9.2**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.2	Construction of new pump station, reservoirs, valves and water mains	
Status Description: Yes	The City is planning maintenance to the Vincennes Road pump station, and upgrades at both the Vincennes and Highland pump stations currently under construction.	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 B - 9.4**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.4	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: Yes	The City has acquired a property in a flood prone area and is proposing to use the area for flooding mitigation if funding becomes available. The City has applied for partnership funding with the MWRD.	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 B - 9.5**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.5	Comprehensive study of drought vulnerability	
Status Description: No	No action was taken on this step in the past year. Work will begin on this when funding becomes 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 B - 9.7**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.7	Flood impact study	
Status Description: Action Taken?	MWRD is studying the area near 119th Street and Washington.	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 B - 9.8**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.8	Installation of separate storm sewer system to replace current combined-sewer service within the City	
Status Description: Action Taken?	MWRD is studying the area near 119th Street and Washington.	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 B - 9.9**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.9	Perform a Community Risk Assessment critical facilities and infrastructure	
Status Description: Action Taken?	No action was taken on this step in the past year. Work will begin on this when funding becomes 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 B - 9.10**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B— 9.10	Update the City’s flood damage prevention ordinance. Consider adoption of IDNR model ordinance for the Cook County region.	
Status Description: Yes	The City follows the MWRD, FEMA and the IDNR model ordinance.	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		

### Completed Mitigation Actions

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

**Action B - 9.6**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.6	GIS mapping of critical infrastructure	
Status Description: Yes	The GIS maps are being updated as needed.	C
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 B - 9.11**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.11	Continue to support the countywide actions identified in this plan.	
Status Description: Yes	The City follows the MWRD, FEMA and the IDNR model ordinance.	C
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 B - 9.12**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.12	Actively participate in the plan maintenance strategy identified in this plan.	
Status Description: Yes	The City abides to all County/FEMA rules and regulations.	C
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 B - 9.13**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.13	Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.	
Status Description: Yes	The City abides to all FEMA rules and regulations	C
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 B - 9.14**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.14	Where feasible, implement a program to record high water marks following high-water events.	
Status Description: Yes		C
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 B - 9.15**

<b>TABLE: ACTION PLAN MATRIX</b>		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B—9.15	Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.	
Status Description: Yes		C
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		



## Future Needs to Better Understand Risk/Vulnerability

The City has begun to schedule bi-annual meetings to discuss and plan any future needs as they relate to Hazard Mitigation

## Additional Comments

No additional comments at this time.

## HAZUS-MH Risk Assessment Results

BLUE ISLAND EXISTING CONDITIONS	
2010 Population	23,706
Total Assessed Value of Structures and Contents	\$6,669,110,685
Area in 100-Year Floodplain	168.00 acres
Area in 500-Year Floodplain	175.00 acres
Number of Critical Facilities	58

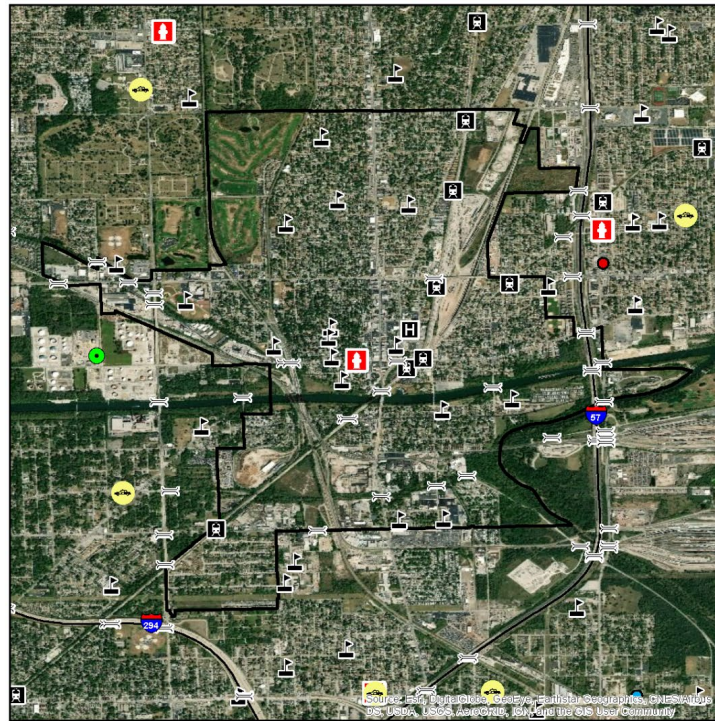
HAZARD EXPOSURE IN BLUE ISLAND						
	Number Exposed		Value Exposed to Hazard			% of Total Assessed Value Exposed
	Population	Buildings	Structure	Contents	Total	
<b>Dam Failure</b>						
Buffalo Creek	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #2	0	0	\$0	\$0	\$0	0.00%
Touhy	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #3	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #4	0	0	\$0	\$0	\$0	0.00%
<b>Flood</b>						
100-Year	13	4	\$988,481	\$519,956	\$1,508,437	0.02%

500-Year	13	4	\$988,481	\$519,956	<b>\$1,508,437</b>	0.02%
<b>Tornado</b>						
100-Year	—	—	\$656,460,936	\$542,146,276	<b>\$1,198,607,212</b>	17.97%
500-Year	—	—	\$1,046,970,914	\$852,928,834	<b>\$1,899,899,748</b>	28.49%

<b>ESTIMATED PROPERTY DAMAGE VALUES IN BLUE ISLAND</b>				
	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	\$35,923,881	\$10,945,279	<b>\$46,869,160</b>	0.70%
<b>Flood</b>				
10-Year	\$0	\$0	<b>\$0</b>	0.00%
100-Year	\$16,012	\$11,730	<b>\$27,741</b>	>0.01%
500-Year	\$17,349	\$15,900	<b>\$33,249</b>	>0.01%

<b>Tornado</b>				
100-Year	\$65,646,094	\$54,214,628	<b>\$119,860,721</b>	1.80%
500-Year	\$152,857,753	\$124,527,610	<b>\$277,385,363</b>	4.16%

# Hazard Mapping



## CITY OF BLUE ISLAND

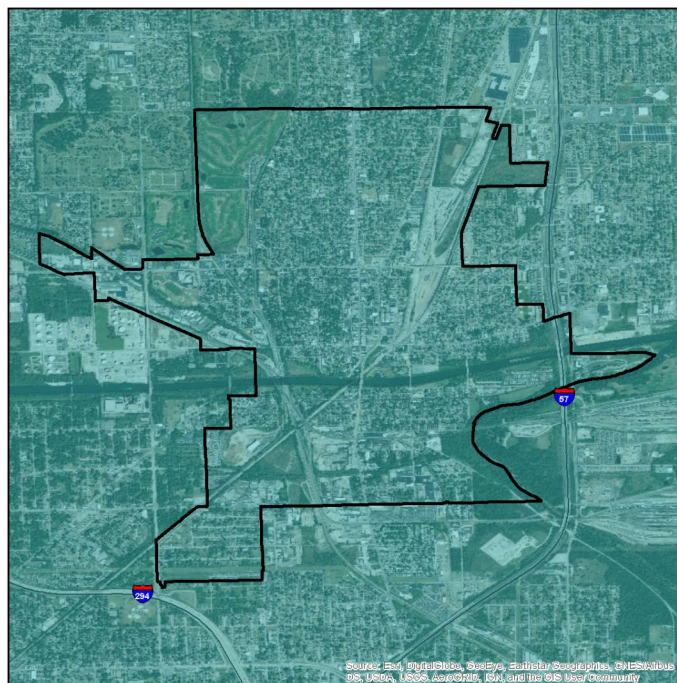
### CRITICAL INFRASTRUCTURE

- 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 0.15 0.3 0.6 0.9 1.2 Miles



## CITY OF BLUE ISLAND

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

Mercalli Scale, Potential Shaking  
II-III Weak

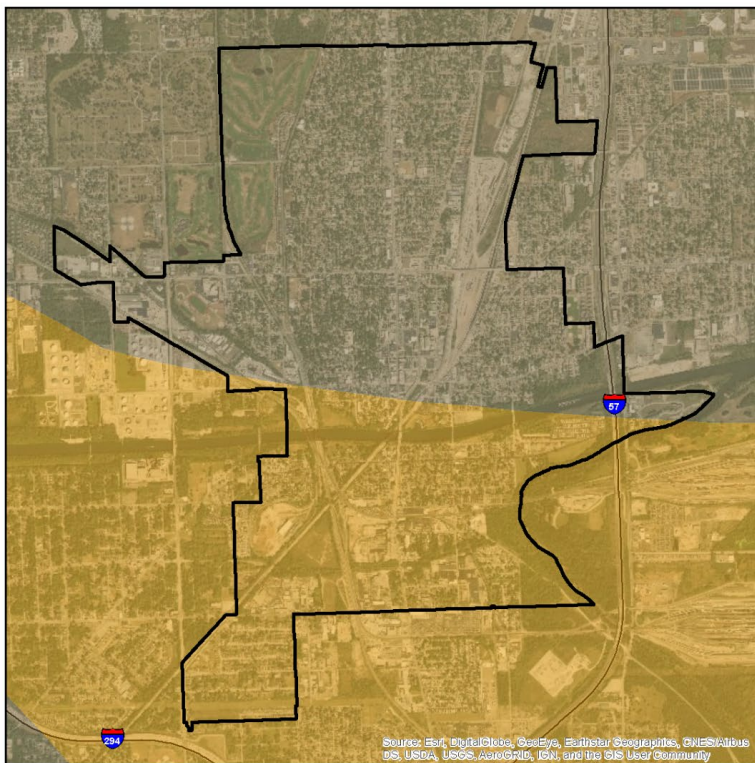
Data provided by the USGS Earthquake Hazards Program and Cook County.

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 10-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 0.15 0.3 0.6 0.9 1.2 Miles



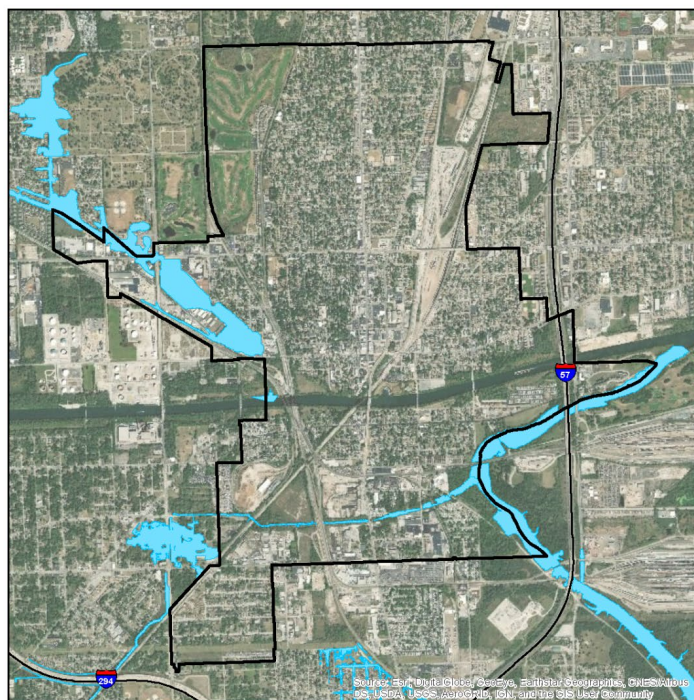
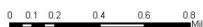
**CITY OF  
BLUE ISLAND**  
NATIONAL EARTHQUAKE HAZARD  
REDUCTION PROGRAM (NEHRP)  
SOIL CLASSIFICATION

- 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. Perrelli (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 z 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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**CITY OF  
BLUE ISLAND**  
COOK COUNTY MWRDGC  
100-YEAR INUNDATION AREA

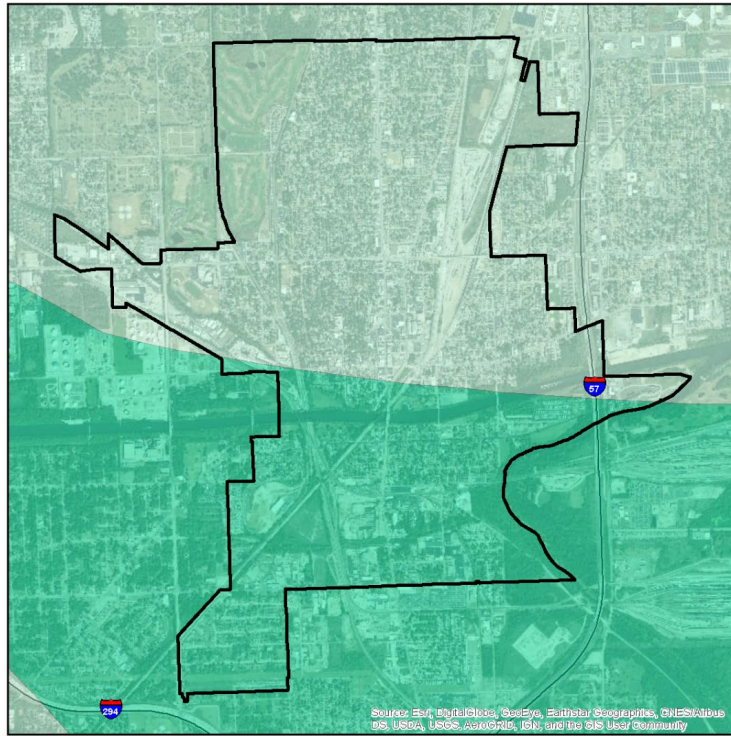
- 100-year Inundation Area

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>.





**CITY OF  
BLUE ISLAND**

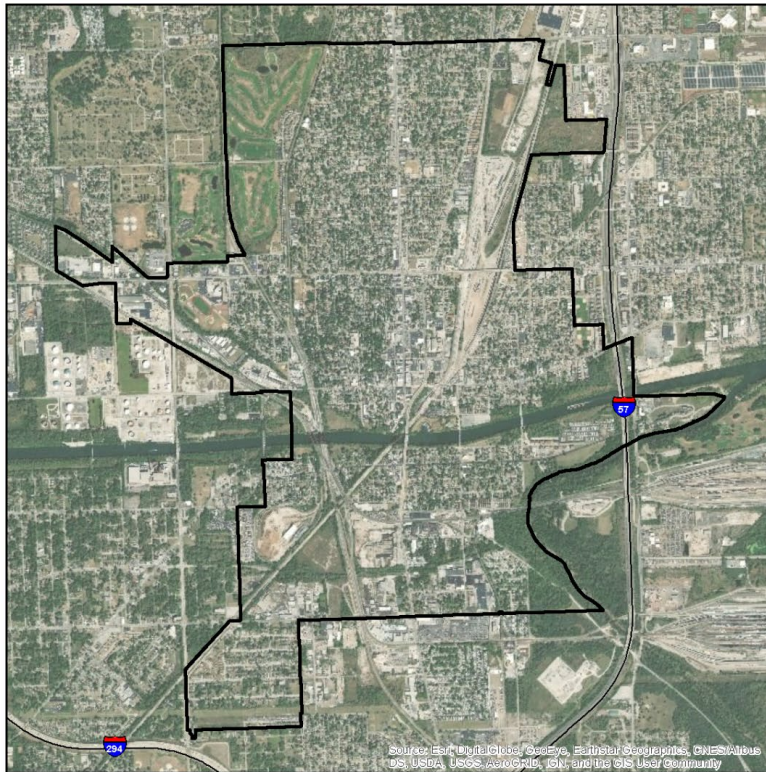
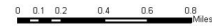
**LIQUEFACTION SUSCEPTIBILITY**

- 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 102 degrees West Longitude) by David S. Fullerton, Charles A. Bush, and Jean H. Feneel (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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**CITY OF  
BLUE ISLAND**

**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.

