

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

East Hazel Crest Annex

FINAL

July 2019

Prepared for:



Cook County
Department of Homeland Security and Emergency Management
69 W. Washington St., Suite 2600
Chicago, Illinois 60602

Toni Preckwinkle
President
Cook County Board of Commissioners

William Barnes
Executive Director
Cook County Department of Homeland
Security & Emergency Management

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Hazard Mitigation Point of Contact

Primary Point of Contact	Alternate Point of Contact
Patricia Lazuka, Village Administrator 1904 174th St Hazel Crest, IL 60429 708-798-0213 admin@easthazelcrest.com	Robert Mrjenovich, Police Sergeant 17223 Throop St Hazel Crest, IL 60429 708-798-2186 rmrjenovich@ehcpd.com

Jurisdiction Profile

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

- **Date of Incorporation:** 1918
- **Current Population:** The US Census 2018 population estimate was 1,511 for the Village of East Hazel Crest.
- **Population Growth:** East Hazel Crest has a flat rate of growth, with less than a 1 percent decrease over the past 6 years.
- **Location and Description:** The Village of East Hazel Crest is located in the South Suburbs of Chicago, about 20 miles south of downtown. The southern end of the Canadian National Markham Yard is located within the Village. East Hazel Crest is bordered by Harvey to the north, Homewood to the south, Hazel Crest to the west, and Thornton to the east. I-80/I-294 intersects as the Tri State Tollway through East Hazel Crest.
- **Brief History:** As south and southwest Cook County has exploded in growth in the past 30 years, East Hazel Crest has maintained its status as the smallest of the southern suburbs. Although it has several small industrial and commercial zones, East Hazel Crest is predominantly residential, with over 90 percent of its housing in single-family units. The whole village is roughly four hundred acres in an area several blocks wide south of and paralleling Interstate 80. Mostly east of the Canadian National Railroad, the village annexed an area west of the CN that includes a small commercial section and the subdivision of Bremerton Woods. East Hazel Crest was a part of Hazel Crest (east of the railroad line) when it was incorporated in 1911. When the IC raised its commuter and mainline tracks above grade level, residents felt even more isolated from most of Hazel Crest. In an effort to maintain their quiet, almost rural community, the residents voted for incorporation as their own village in 1918. For many years, Washington Park racetrack stood south of East Hazel Crest. It was one of the most famous tracks in the metropolitan area and attracted huge crowds. In the 1940s, the owners sought annexation to the village if it would change its name to Washington Park. However, the small, tight-knit community was not interested. Since its inception, the majority of the residents have worked in nearby industrial areas and the Markham rail yards. The community has become racially diverse over the past 20 years. In 1990, 31 percent of its population was a minority, rising to 48 percent in 2000.
- **Climate:** East Hazel Crest, IL, gets 37 inches of rain per year which is also the U.S. average. The Village's annual snowfall is 29 inches - comparatively, the average U.S. city gets 25 inches of snow per year. The number of days with any measurable precipitation is 110 and, on average, there are 192 sunny days per year in the Village. The July high is around 84 degrees and the January low is 14. 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:** East Hazel Crest is governed by a Village President and six Village Trustees. The Village operates 4 departments: Police Department, Fire Department, Public Works Department, and Water Department. This body will assume the responsibility for the adoption and implementation of this plan.

- **Development Trends:** Anticipated development levels in East Hazel Crest are low with the Village being landlocked and very few parcels available for development. Future development trends will focus on redevelopment. It is the goal of the Village of Hazel Crest to retain and create quality full-time permanent jobs by attracting private investment for office, industrial, warehouse, distribution, and related businesses, in addition to retail establishments and restaurants. There are incentives offered to businesses.

Capability Assessment

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

TABLE: LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	Yes	In accordance with Public Act 096-0704, Illinois has adopted the IBC as its state Building Code. CH 6-39 Adopted :7/24/2012 Building department head is retiring mid-year and after his replacement, we will be adopting the new code.
Zonings	Yes	No	No	No	(65 ILCS 5/) Illinois Municipal Code. CH 22 adopted: 7/24/2012
Subdivisions	No	No	No	No	
Stormwater Management	Yes	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	Cook County DPH	Yes	Adopted state code 12/13/01
Environmental Protection	No	No	No	No	State/Fed guidelines
Planning Documents					
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	No	No	Yes	No	Regional storm water 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	
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	No	Yes	Yes	Approved 01/22/2014
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

TABLE: FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
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

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	No	
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	
Emergency manager	Yes	Cook County DHSEM
Grant writers	No	

TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

What department is responsible for floodplain management in your jurisdiction?	Building
Who is your jurisdiction’s floodplain administrator? (department/position)	Village Administrator
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	N/A

When was the most recent Community Assistance Visit or Community Assistance Contact?	Have not had a Community Assistance Visit
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	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; Undecided

TABLE: COMMUNITY CLASSIFICATIONS

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	Unknown	Unknown
Public Protection/ISO	Yes	6	2008
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
Flash Flood	-	5/20/2014	20,000 property damage.
Severe Winter Weather	-	1/2014	-
Severe Weather (wind, rain)	DR-4116	4/26/2013	-
Severe Winter Weather	DR-1960	1/31/2011	-
Severe Winter Storm	-	12/11/2000	-
Severe Storms (rain), Road Flooding	DR-997	4/1993	-
Severe Winter Storm	N/A	1/16/1979	-

Jurisdiction-Specific Hazards and Impacts

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

Severe Weather: Thunderstorm winds have blown down trees and caused utility and residential damage in Dolton. No deaths have been recorded, to date.

Severe Winter Weather: These events can threaten life, property, and major utilities. Dolton continues to pursue mitigation actions to ensure utility service cannot be as easily impacted by things like high winds and ice accumulation.

Flood: The Village has experienced urban flooding along the Southern Corridor, Cornell area and 158th and Greenwood. In general, the entire neighborhood has experienced repetitive flooding, basement flooding, and difficulty for EMS responders and transportation of school children. Other vulnerable areas within the Village include 138th and Indiana, S.E. quadrant, and 144th and Indiana Ave.

Epidemic/Pandemic: Although these events are not extremely likely, Dolton continues to mitigate and prepare for this hazard.

Secondary Impacts from Mass Influx of Evacuees: Although these events are not extremely likely, Dolton continues to mitigate and prepare for this hazard. If a mass influx of evacuees were to occur at a time when no preparations had been made, it is highly likely that local resources would be stretched and other hazards (like disease outbreaks or civil disturbances) could swiftly emerge.

Hazard Risk Ranking

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

TABLE: HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Weather	54
2	Severe Winter Weather	54
3	Earthquake	32
4	Tornado	27
5	Flood	16
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)
Action E2.1—Adopt current building codes.						
Ongoing	All	3, 10	Village	Low	General Fund	Short-term
Action E2.2—Evaluate floodplain area.						
Removed	Flooding	3	Village	\$37,000; Medium	General Fund	Removed
Action E2.3—Continue with mutual aid agreements.						
Ongoing	All	1, 8	Fire Department, Police Department, Department of Public Works	Low	General Fund	Ongoing
Action E2.4—Clear storm drains.						

Ongoing	Flooding	3	Department of Public Works	Low	General Fund	Ongoing
Action E2.5 —Remove hazardous dead trees.						
Ongoing	All Severe Weather	2, 3, 13	Department of Public Works	\$120,000; Medium	General Fund	Short-term
Action E2.6 —Check for leaks in water supply system.						
Ongoing	Drought	2, 3	Department of Public Works	Low	Water Fund	Short-term
Action E2.7 —Provide residents mitigation information.						
Ongoing	All	6, 13	Village	Low	General Fund	Short-term
Action E2.8 —Update Village Hall electrical system to add generator for E.O.C.						
Ongoing	All Hazards	1, 2, 5	Village	\$100,000; High	General Fund	Long-term
Action E2.9 —Support retrofitting, purchase etc. of structures with repetitive losses.						
Removed	All	7, 13	Village	High	FEMA Hazard Mitigation Grants	Removed
Action E2.10 —Support the countywide actions identified in this plan.						
Ongoing	All	All	Village	Low	General Fund	Short- and Long-term
Action E2.11 —Actively participate in plan maintenance.						
Ongoing	All	3, 4, 6	DHSEM, Village	Low	General Fund	Short-term
Action E2.12 —Consider participation in incentive-based programs.						
Ongoing	All	3, 4, 5, 6, 7, 9, 10, 11, 13	Village	Low	General Fund	Long-term
Action E2.13 —Maintain good standing under the National Flood Insurance Program.						
Removed	Flooding	4, 6, 9	Village	Low	General Fund	Removed
Action E2.14 —Implement a program to record high water marks.						

Removed	Flooding, Severe Weather	3, 6, 9	Village	Medium	General Fund; FEMA Grant Funds (Public Assistance)	Removed
Action E2.15 — Integrate the hazard mitigation plan into other plans.						
Ongoing	All	3, 4, 6, 10, 13	Robinson Engineering	Low	General Fund	Short-term
Action E2.16 — Consider implementation of Capital Improvements Program (CIP).						
Ongoing	All	1, 2, 7	Public Works	High	CIP component of general fund (if implemented)	Long-term
Action E2.17 — Install storm sewer piping in the area near the retention reservoir.						
Ongoing	Flood	9	Unknown	Unknown	Unknown	Ongoing
(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	Medium	Low	Yes	No	Yes	Medium
2	1	Low	Low	Yes	No	Yes	Medium
3	2	Medium	Low	Yes	No	Yes	Medium
4	1	Medium	Low	Yes	No	Yes	High
5	3	High	High	Yes	No	No	Medium
6	2	Medium	Low	Yes	No	Yes	Medium
7	2	Low	Low	Yes	No	Yes	Medium
8	3	Medium	High	No	No	No	Low
9	2	High	High	Yes	Yes	No	Medium

10	13	Medium	Low	Yes	No	Yes	High
11	3	Medium	Low	Yes	Yes	Yes	High
12	9	Medium	Low	Yes	No	Yes	Medium
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	3	High	High	Yes	No	No	Medium
17	1	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

(a) See Chapter 1 for explanation of priorities.

New Mitigation Actions

East Hazel Crest has no new actions at this time.

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 E2.1

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.1	Adopt current building codes	
Status Description: Yes	Adopted current international Building Codes. Process will be ongoing with revisions as necessary to keep updated.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.3

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.3	Continue with mutual aid agreements	
Status Description: Yes	Ongoing. Will always be ongoing as we keep agreements updated.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.4

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.4	Clear storm drains	
Status Description: Yes	Continuous work to keep all drains clear to prevent storm water accumulation.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.5

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.5	Remove hazardous dead trees	
Status Description: Yes	Removed large number of dead trees within the village posing threats to property. Approximately 70% removed to date.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.6

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.6	Check for leaks in water supply system	
Status Description: Yes	Had water system lines sound and visually tested. Large leaks were located and repaired. Will test again in the future. The Sewers were tested in 2018.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.7

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.7	Provide residents mitigation information	
Status Description: Yes	Information provided to residents in Village newsletters on a regular basis.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.8

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.8	Update Village Hall electrical system to add generator for E.O.C.	
Status Description: Yes	Wiring upgraded and new equipment installed to prepare for the future addition of a generator. Currently seeking options for funding at this time.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.10

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.10	Support the county wide actions identified in this plan.	
Status Description: Yes	Continuing	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.11

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.11	Actively participate in plan maintenance	
Status Description: Yes	Currently updating information.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.12

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# E2.12	Consider participation in incentive based programs	
Status Description: Yes	Exploring Storm Ready at this time.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.15

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
#E2.15	Integrate hazard mitigation plan into other plans	
Status Description: Yes	Currently being implemented into other plans	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.16

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
#E2.16	Consider implementation of Capital Improvements Program (CIP)	
Status Description: Yes	Ongoing	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action E2.17

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
#E2.17	Install storm sewer piping in the area near the retention reservoir	
Status Description: Yes	Will be installing new sewer along roadway in the future to create a more efficient and safer storm water conveyance. In planning stages now for future implementation.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

Completed Mitigation Actions

East Hazel Crest has no completed actions at this time.

Future Needs to Better Understand Risk/Vulnerability

No needs have been identified at this time.

Additional Comments

East Hazel Crest is a very small community approximately 4 blocks wide by a mile and a half long.

The Village has a small area of flood plain in the southwest corner of the village. It is currently being worked on in cooperation with FEMA for removal from flood plain status.

Within the last 10 years, the Cook County Highway Department and the Village of East Hazel Crest have completed structural projects to alleviate the only area of flooding we had. The roadway and adjacent area of 171st St from Ashland Ave to Wood St was completely rebuilt including upgrading the storm sewer system to ensure it can operate up to its increased capacity. This project has removed our one flood prone area completely and has not had any flooding activity during any of the severe weather incidents we have encountered since the project's completion in 2010.

Our water supply holding reservoir, pump system and monitoring system were upgraded approximately 8 years ago. The new system allows constant monitoring of the entire system for leaks.

The village is landlocked with only a few residential lots (under 20) in the village that are available for new construction including vacant properties that may be torn down. There is no industrial property that is available for new construction.

HAZUS-MH Risk Assessment Results

EAST HAZEL CREST EXISTING CONDITIONS	
2010 Population	1,543
Total Assessed Value of Structures and Contents	\$705,187,991
Area in 100-Year Floodplain	14.95 acres
Area in 500-Year Floodplain	14.95 acres
Number of Critical Facilities	9

HAZARD EXPOSURE IN EAST HAZEL CREST						
	Number Exposed		Value Exposed to Hazard		Total	% of Total Assessed Value Exposed
	Population	Buildings	Structure	Contents		
Dam Failure						
Buffalo Creek	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #2	0	0	\$0	\$0	\$0	0.00%
Touhy	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #3	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #4	0	0	\$0	\$0	\$0	0.00%
Flood						
100-Year	3	1	\$13,598	\$13,598	\$27,196	0.0%

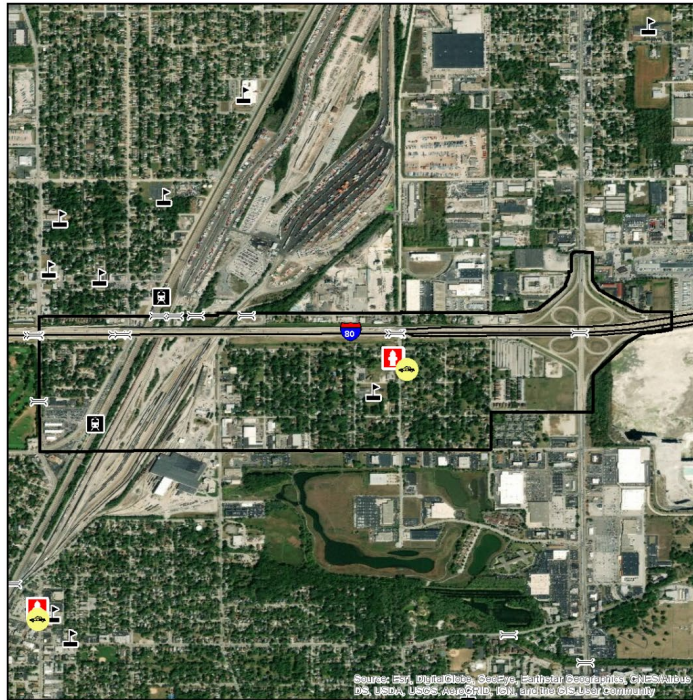
500-Year	3	1	\$13,598	\$13,598	\$27,196	0.0%
Tornado						
100-Year	—	—	\$123,811,954	\$93,410,427	\$217,222,381	30.80%
500-Year	—	—	\$369,910,706	\$328,511,921	\$698,422,626	99.04%

ESTIMATED PROPERTY DAMAGE VALUES IN EAST HAZEL CREST

	Estimated Damage Associated with Hazard			% of Total Assessed Value Damaged
	Building	Contents	Total	
Dam Failure				
Buffalo Creek	\$0	\$0	\$0	0.00%
U. Salt Cr. #2	\$0	\$0	\$0	0.00%
Touhy	\$0	\$0	\$0	0.00%
U. Salt Cr. #3	\$0	\$0	\$0	0.00%
U. Salt Cr. #4	\$0	\$0	\$0	0.00%
Earthquake				
1909 Historical Event	\$3,001,487	\$837,031	\$3,838,518	0.54%
Flood				
10-Year	\$0	\$0	\$0	0.00%
100-Year	\$0	\$0	\$0	0.00%
500-Year	\$0	\$0	\$0	0.00%

Tornado				
100-Year	\$12,381,195	\$9,341,043	\$21,722,238	3.08%
500-Year	\$54,006,963	\$47,962,740	\$101,969,703	14.46%

Hazard Mapping

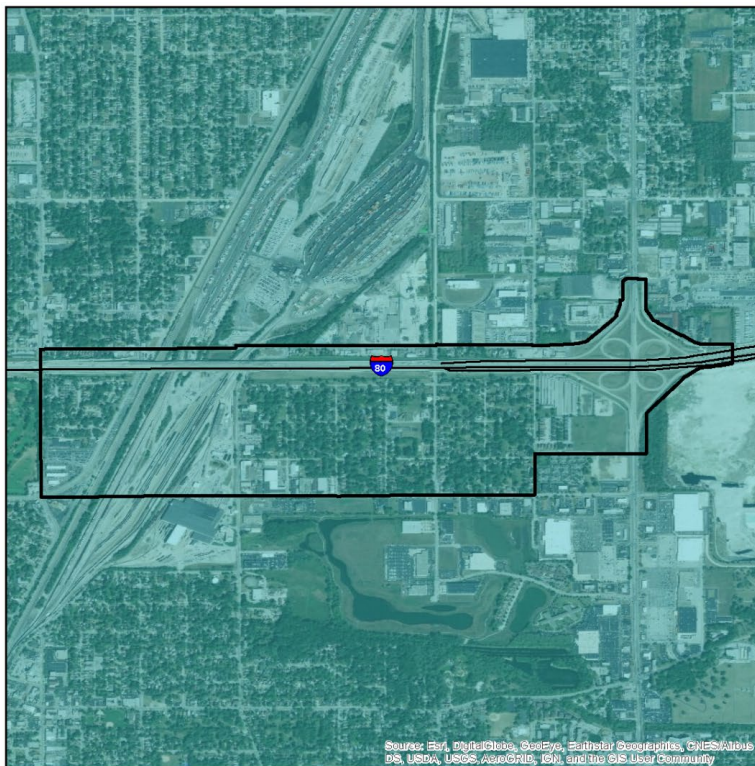
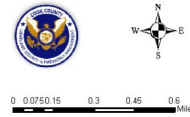


VILLAGE OF EAST HAZEL CREST

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



VILLAGE OF EAST HAZEL CREST

PEAK GROUND ACCELERATION FOR A 100 YEAR EARTHQUAKE EVENT

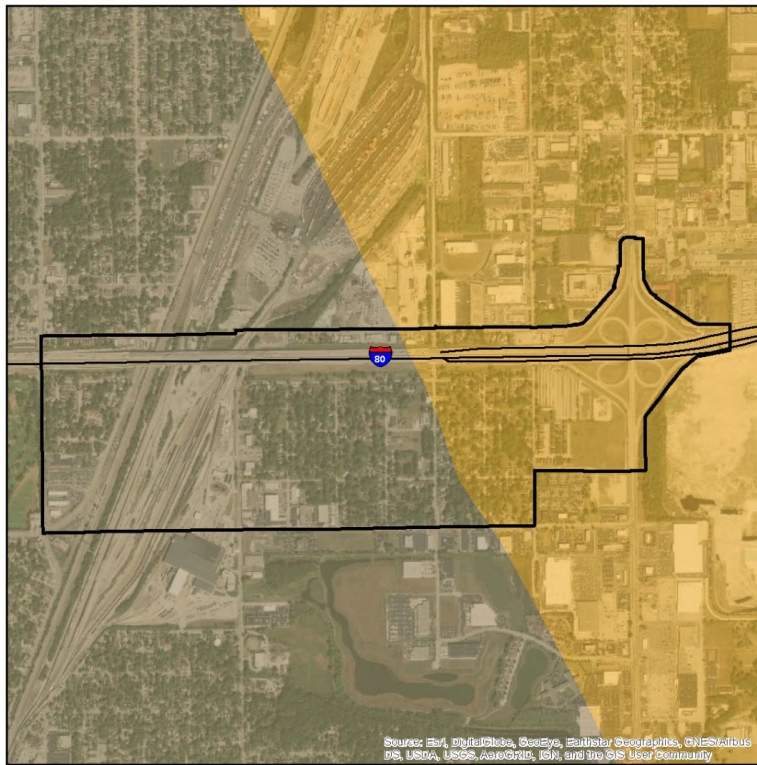
Mercalli Scale, Potential Shaking
II-III Weak

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 100 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 Hazard Reduction Program) site classes B and C.

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NATIONAL EARTHQUAKE HAZARD REDUCTION PROGRAM (NEHRP) SOIL CLASSIFICATION

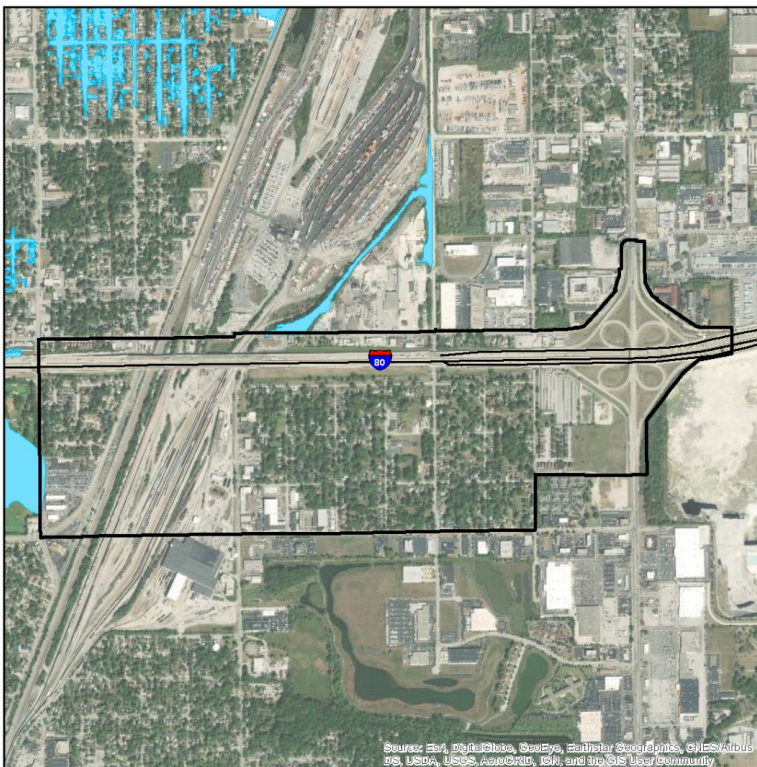
TYPE

- 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 H. 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 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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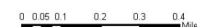
COOK COUNTY MWRDGC 100-YEAR INUNDATION AREA

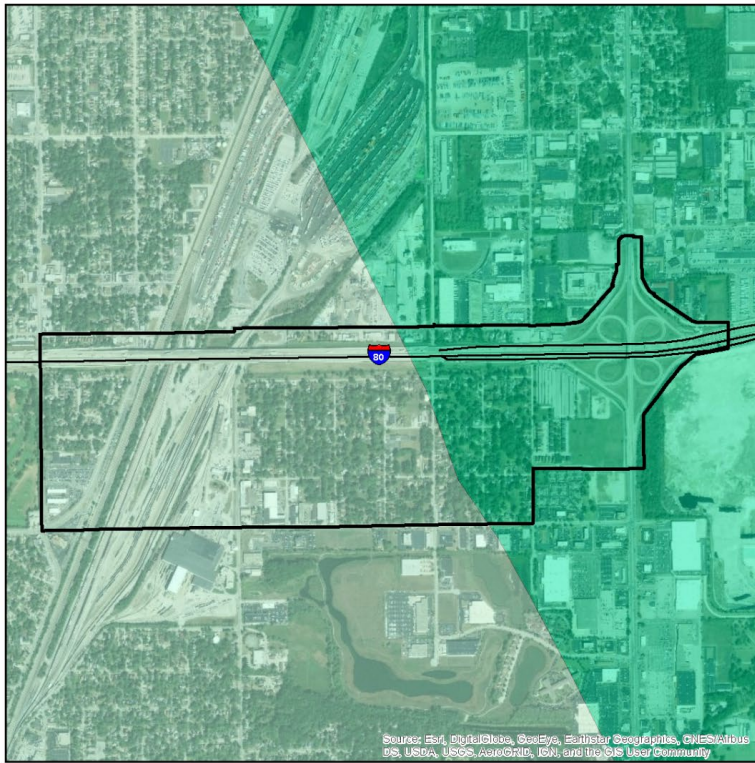
- 100-year Inundation Area

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>.





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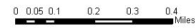
LIQUEFACTION SUSCEPTIBILITY



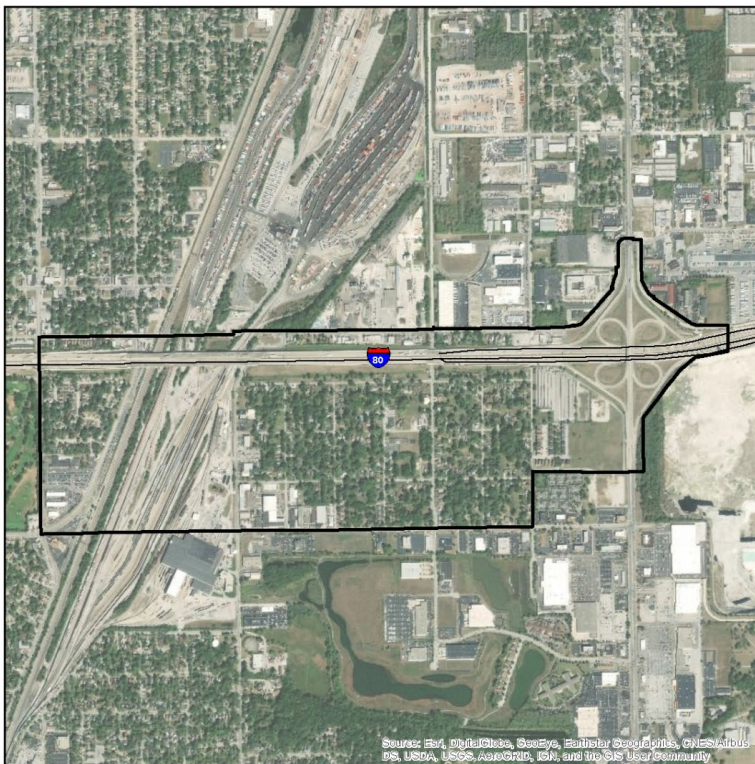
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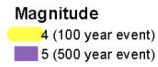


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



VILLAGE OF EAST HAZEL CREST

100- AND 500- YEAR TORNADO EVENTS



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



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