

East Hazel Crest

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
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Jurisdiction Profile

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

Date of Incorporation: 1918

Current Population: The 2021 U.S. Census estimate indicated the population was 1,262. ([City-Data](#))

Population Growth: The overall population has decreased 16.48 percent between 2018 and 2021.

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.

Changes in Community Priorities: There have been no significant changes in priority regarding the hazards that could potentially impact the community or changes in priority regarding resilience.

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 *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 integration 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 EMRS Preparing THIRA
Terrorism Plan	No	No	Yes	Yes	Cook County EMRS
Post-Disaster Recovery Plan	No	No	No	No	

Continuity of Operations Plan	No	No	Yes	No	Cook County EMRS
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
Other	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	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 EMRS
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?	Unknown
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

NFIP Participation Activities

Maintaining compliance under the NFIP is an important component of flood risk reduction. All planning partners that participate in the NFIP have identified actions to maintain their compliance and good standing. Cook County entered the NFIP on April 15, 1981. Structures permitted or built in the County before then are called “pre-FIRM” structures, and structures built afterwards are called “post-FIRM.” The insurance rate is different for the two types of structures. The effective date for the current countywide FIRM is August 19, 2008. This map is a DFIRM (digital flood insurance rate map). The communities in Cook County that participate in the NFIP are shown in **Table: NFIP Participating Communities in Cook County** in **Volume I** of the Cook County MJ-HMP.

The NFIP makes federally-backed flood insurance available to homeowners, renters, and business owners in participating communities. The communities in Cook County that participate in the NFIP and their "Policies in Force," "Total Coverage," and "Total Written Premiums" are shown in **Table: Cook County Flood Insurance Policies** in **Volume I** of the Cook County MJ-HMP.

Substantial Improvement Rule and the Substantial Damage Rule

The IDNR/OWR has developed a model ordinance for floodplain management, which has been adopted by most communities in Illinois. The ordinance includes the minimum requirements an NFIP participating jurisdiction must adopt and enforce, as well as additional higher regulatory requirements. The optional, higher regulatory standards include a minimum one foot of freeboard above the base flood elevation and cumulative tracking of damage repairs and improvements to establish substantial damage and substantial improvement compliance. Some jurisdictions have chosen to exceed the requirements of the model ordinance and have adopted more restrictive ordinances. This is most common in the communities in northeastern Illinois.

Existing Municipal Code:

Sec. 7-152 Definitions

Substantial damage means *damage* of any origin sustained by a structure whereby the cumulative percentage of *damage* "during the life of the building" equals or exceeds fifty (50) percent of the market value of the structure before the *damage* occurred regardless of actual repair work performed. Volunteer labor and materials must be included in this determination. The term includes repetitive loss buildings. See "Repetitive loss".

Substantial improvement means any reconstruction, rehabilitation, addition, or improvement of a structure taking place "during the life of the building" in which the cumulative percentage of

improvements equals or exceeds fifty (50) percent of the market value of the structure before the improvement or repair is started.

Substantial improvement is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the building. This term includes structures which have incurred repetitive loss or *substantial damage*, regardless of the actual work done. The term does not, however, include either:

- (1) Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, or
- (2) Any alteration of a "historic structure" listed on the national register of historic places or the state register of historic places, provided that the alteration will not preclude the structure's continued designation as a historic structure.

Sec. 7-154 Duties of the Public Works Superintendent or Village Engineer

(a) *Determining the floodplain designation.*

- (1) Check all new development sites to determine whether they are in a special *flood* hazard area (SFHA).
- (2) If they are in a SFHA, determine whether they are in a floodway, *flood* fringe or in a floodplain for which a detailed study has not been conducted and which drains more than one (1) square mile.
- (3) Check whether the development is potentially within an extended SFHA (with a drainage area less than one (1) square mile), indicating that the development would have adverse impacts regarding storage, conveyance, or inundation which would be the basis for the applicant being required to delineate the floodplain and floodway and be subject to the remaining sections of this article.

(b) *Professional engineer review.*

- (1) If the development site is within a floodway or in a floodplain for which a detailed study has not been conducted and which drains more than one (1) square mile, the permit shall be referred to a licensed professional engineer under the employ or contract of the village for review to ensure that the development meets sections 7-157 or 7-158.
- (2) In the case of an appropriate use, the professional engineer shall state in writing that the development meets the requirements of section 7-157.

(g) *Damage determinations.* Make damage determinations of all damaged buildings in the SFHA after a *flood* to determine substantially damaged structures which must comply with section 7-159.

Sec. 7-159 Permitting Requirements Applicable to all Floodplain Areas

In addition to the requirements found in sections 7-156, 7-157, and 7-158 for development in flood fringes, designated floodways, and SFHA or floodplains where no floodways have been identified, the following requirements shall be met:

(3) *Protecting buildings.*

a. All buildings located within a one hundred-year floodplain, also known as a SFHA, shall be protected from flood damage below the flood protection elevation. This building protection criteria applies to the following situations:

1. Construction or placement of a new building or alteration or addition to an existing building valued at more than one thousand dollars (\$1,000.00) or seventy (70) square feet.
2. Substantial improvements or structural alterations made to an existing building that increase the floor area by more than twenty (20) percent or equal or exceed the market value by fifty (50) percent. Alteration shall be figured cumulatively "during the life of the building." If substantially improved, the existing structure and the addition must meet the flood protection standards of this section.
3. Repairs made to a substantially damaged building. These repairs shall be figured cumulatively "during the life of the building" If substantially damaged the entire structure must meet the flood protection standards of this section.
4. Installing a manufactured home on a new site or a new manufactured home on an existing site (the building protection requirements do not apply to returning a manufactured home to the same site it lawfully occupied before it was removed to avoid *flood* damage).
5. Installing a travel trailer or recreational vehicle on a site for more than one hundred eighty (180) days per year; and
6. Repetitive loss to an existing building as defined in [section 7-152](#). This building protection requirement may be met by one of the following methods.

c. A residential or nonresidential building may be elevated in accordance with the following:

1. The building or improvements shall be elevated on crawl space, stilts, piles, walls, or other foundation that is permanently open to *flood* waters and not subject to damage by hydrostatic pressures of the base *flood* or one hundred-year frequency *flood*. Designs must either be certified by a licensed professional engineer or architect or the permanent openings, one (1) on each wall, shall be no more than one (1) foot above existing grade, and consists of a minimum of two (2) openings. The openings must have a total net area of not less than one (1) square inch for every one (1) square foot of enclosed area subject to *flooding* below the base *flood* elevation;
2. The foundation and supporting members shall be anchored and aligned in relation to *flood* flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice and floating debris;
3. All areas below the *flood* protection elevation shall be constructed of materials resistant to *flood* damage;
4. The lowest floor (including basement) and all electrical, heating, ventilating, plumbing, and air conditioning equipment and utility meters shall be located at or above the *flood* protection elevation;
5. Water and sewer pipes, electrical and telephone lines, submersible pumps, and other waterproofed service facilities may be located below the *flood* protection elevation provided they are waterproofed;

6. The areas below the *flood* protection elevation may only be used for the parking of vehicles, building access or storage in an area other 02. [sic] than a basement and not later modified or occupied as habitable space;

7. In lieu of the above criteria, the design methods to comply with these requirements may be certified by licensed professional engineer or architect; and

8. Manufactured homes, and travel trailers to be installed on a site for more than one hundred eighty (180) days, shall be elevated to or above the *flood* protection elevation; and, shall be anchored to resist flotation, collapse, or lateral movement by being tied down in accordance with the rules and regulations for the Illinois Mobile Home Tie-Down Act issued pursuant to 77 Ill. Adm. Code, Part 870. In addition, all manufactured homes shall meet the following elevation requirements:

A. In the case of manufactured homes, placed or substantially improved (1) outside of a manufactured home park or subdivision; (2) in a new manufactured home park or subdivision; (3) in an expansion to an existing manufactured home park or subdivision; or (4) in an existing manufactured home park or subdivision on which a manufactured home has incurred substantial damage from a *flood*, the top of the lowest floor shall be elevated to or above the *flood* protection elevation.

B. In the case of manufactured homes placed or substantially improved in an existing manufactured home park or subdivision, the manufactured home shall be elevated so that either the top of the lowest floor is above the base *flood* elevation or the chassis is at least thirty-six (36) inches in height above grade and supported by reinforced piers or other foundations of equivalent strength, whichever is less.

f. Construction of new or substantially improved critical facilities shall be located outside the limits of the floodplain. Construction of new critical facilities shall be permissible within the floodplain if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor (including basement) elevated or structurally dry floodproofed to the five hundred-year flood frequency elevation or three (3) feet above the level of the one hundred-year flood frequency elevation whichever is greater. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities.

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

Opportunities to Expand and Improve Capabilities

At this time, the municipality did not include or identify any opportunities to expand and improve capabilities. Plans will be updated in the future should this change.

Plan Integration

The capability assessment describes opportunities to "link" or integrate the mitigation plan into other planning mechanisms. The process and mechanism to identify opportunities to integrate the Cook County MJ-HMP into other planning mechanisms will occur during the Annual Update Process and be reflected in the Jurisdictional Annual Report each year. Specific plan integration opportunities will include:

- The hazards, goals, and actions of the Hazard Mitigation Plan will be considered in the next update of the jurisdiction's land use plans, zoning, and subdivision codes.

Emergency Plan Integration:

Cook County EMRS is supporting communities to develop and update their respective Emergency Operations Plans, Continuity of Operations Plan/Continuity of Government Plan, and Recovery Plan in 2024. This is an ongoing countywide initiative and is being implemented in all municipalities.

Emergency Operations Plan (EOP)

An EOP template was created for all municipalities. The 2019 Cook County MJ-HMP and the hazards in the mitigation plan have been integrated into the Situation and Assumptions section of the EOP. Within that section, the natural hazards based on the 2019 MJ-HMP were added in the Initial Analysis and Assessment and Identification of Hazards section of the EOP. The hazards in the 2019 plan and the 2024 MJ-HMP did not change apart from adding wildfires for the Forest Preserve and unincorporated areas of the County. Future updates of the EOP will take into consideration any additional new natural hazards that are added to subsequent updates to the MJ-HMP.

Continuity of Operations Plan (COOP)

The Continuity of Operations Plan (COOP) for the municipality includes a Situation section that is based on the 2019 Cook County MJ-HMP jurisdictional annex, and specifically the hazards identified in the annex. The COOP-specific risk assessment is hazard-specific and based on likelihood of occurrence and severity of impact.

Recovery Plan

The goals of the Recovery Plan were developed to align with the 2019 Cook County MJ-HMP, and specifically prioritizes the responsibility of officials under this plan to save lives, protect property, relieve human suffering, sustain survivors, repair essential facilities, restore services, and protect the environment. The plan acknowledges that hazard mitigation is an important priority and consideration during the rebuilding process.

Jurisdiction-Specific Natural Hazard Event History

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

Federal Disasters Declared

Disaster Declaration Number	Date Declared	Event
DR-227	4/25/1967	Tornado
DR-351	9/4/1972	Flood
DR-373	4/26/1973	Flood
DR-509	6/18/1976	Severe Storm(s)
DR-643	6/30/1981	Severe Storm(s)
DR-776	10/7/1986	Flood
DR-798	8/21/1987	Flood
DR-997	7/9/1993	Flood
DR-1129	7/25/1996	Severe Storm(s)
DR-1188	9/17/1997	Severe Storm(s)
DR-1729	9/25/2007	Severe Storm(s)
DR-1800	10/3/2008	Severe Storm(s)
DR-1935	8/19/2010	Severe Storm(s)
DR-1960	3/17/2011	Snow
EM-3068	1/16/1979	Snow
EM-3134	1/8/1999	Snow
EM-3161	1/17/2001	Snow
EM-3230	9/7/2005	Hurricane – Katrina Evacuation
EM-3435	3/13/2020	Biological
DR-4116	5/10/2013	Flood
DR-4489	3/26/2020	Biological
DR-4728	8/15/2023	Severe Storm(s)
DR-4749	11/20/2023	Flood

State Disaster Declarations

Date Declared	Event
7/26/2010	Severe Storms, High Winds, Torrential Rain
1/31/2011	Winter Weather
4/25/2011 5/25/2011	High Wind, Tornadoes, Torrential Rain
4/18/2013 4/20/2013 4/21/2013 4/25/2013 4/30/2013	Severe Storms, Heavy Rainfall, Flooding, Straight-line Winds
1/6/2014	Heavy Snowfall, Frigid Temperatures

7/12/2017 7/14/2017	Thunderstorms, Heavy Rainfall, Flooding
1/29/2019	Winter Storm
2/6/2020	Severe Storms
3/12/2020 – present (reissued monthly)	COVID-19
2/16/2021	Winter Storms
2/1/2022	Winter Storms
8/1/2022 (reissued monthly through 10/28/2022)	Monkeypox

TABLE: NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster Number (if applicable)	Date	Preliminary Damage Assessment/ Event Narrative
Flash Flood	-	5/20/2014	\$20,000 in 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: Vulnerabilities and Impacts

Hazards that represent a county-wide risk are addressed in the Risk Assessment section of the 2024 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: Thunderstorms and wind events have occurred numerous times in East Hazel Crest. Minor storm issues with power lines etc., repaired immediately with minimal impact on the community. No specific locations are more prone than others identified.

Flooding: No substantial events to report.

Severe Winter Weather: East Hazel Crest Village Hall and Public Safety building do not have sufficient backup generator capabilities. These could also be used for shelter for residents but without sufficient generator cannot be used for this purpose.

Indicator	Number	Percent
Families in poverty	224.1	18.0%
People with disabilities	171	13.8%
People over 65 years	220	17.7%
People under 5 years	109	8.7%
Black	774	59.0%
Native American	0	0%
Hispanic	229	17.5%

Households with no car	112	18.3%
Mobile homes	0	0%

Data are from the U.S. Census Bureau, American Community Survey. See methods for more information.

The community evaluated whether vulnerability, and subsequently the potential impacts, in hazard-prone areas had increased, decreased, or remained the same for each natural hazard identified in this Hazard Mitigation Plan. Climate change, infrastructure expansion, and economic shifts that can affect vulnerability were considered. For example, if planned development is in an identified hazard area or is not built to the updated building codes, it may increase the community's vulnerability to future hazards and disasters. On the other hand, if development occurred with mitigation practices in place, the vulnerability may have remained the same or decreased. Additionally, shifting demographics were taken into consideration when assessing development trends.

Jurisdiction-Specific Climate Change Vulnerability and Impacts

The table below outlines if climate change, as assessed by the local planning team, has increased or decreased the municipality's vulnerability/exposure, and thereby the potential impacts, to each natural hazard over the past five (5) years (**Current Vulnerability**), and the effect of climate change in the future probability of occurrence and impacts (**Future Vulnerability**) from each natural hazard.

Hazard	Vulnerability
Current Vulnerability	
Dam and Levee Failure	Not Applicable
Drought	Remained the Same
Earthquake	Remained the Same
Flood (Riverine, Urban, Shoreline)	Remained the Same
Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Winds)	Remained the Same
Severe Winter Weather (Ice Storms, Heavy Snow, Blizzards, Extreme Cold)	Remained the Same
Tornado	Remained the Same
Wildfire (Wildfire Smoke)	Remained the Same

Hazard	Vulnerability
Future Vulnerability	
Dam and Levee Failure	Not Applicable
Drought	No Change is Anticipated
Earthquake	No Change is Anticipated
Flood (Riverine, Urban, Shoreline)	No Change is Anticipated
Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Winds)	Increase
Severe Winter Weather (Ice Storms, Heavy Snow, Blizzards, Extreme Cold)	Increase
Tornado	No Change is Anticipated
Wildfire (Wildfire Smoke)	No Change is Anticipated

Jurisdiction-Specific Changes (or Expected Changes) in Development Trends in Hazard-Prone Areas

The table below outlines if development, as assessed by the local planning team, over the past five (5) years (**Current Vulnerability**) has increased or decreased the jurisdiction's

vulnerability/exposure, and thereby the potential impacts, to these natural hazards, and the anticipated effects changes in development may have on the future probability of occurrence and impacts (**Future Vulnerability**) from these natural hazards.

Hazard	Vulnerability
Current Vulnerability	
Dam and Levee Failure	Not Applicable
Drought	Remained the Same
Earthquake	Remained the Same
Flood (Riverine, Urban, Shoreline)	Remained the Same
Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Winds)	Remained the Same
Severe Winter Weather (Ice Storms, Heavy Snow, Blizzards, Extreme Cold)	Remained the Same
Tornado	Remained the Same
Wildfire (Wildfire Smoke)	Remained the Same

Hazard	Vulnerability
Future Vulnerability	
Dam and Levee Failure	Not Applicable
Drought	No Change is Anticipated
Earthquake	No Change is Anticipated
Flood (Riverine, Urban, Shoreline)	No Change is Anticipated
Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Winds)	No Change is Anticipated
Severe Winter Weather (Ice Storms, Heavy Snow, Blizzards, Extreme Cold)	No Change is Anticipated
Tornado	No Change is Anticipated
Wildfire (Wildfire Smoke)	No Change is Anticipated

Our community does not anticipate future major assets may be exposed or vulnerable to any of the natural hazards identified in this Hazard Mitigation Plan. Any new assets (e.g., new construction in hazard prone areas) will be constructed to adhere to the latest building codes and standards, and mitigation to protect them from identified and anticipated hazards, especially those that are expected to increase due to climate change.

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
1	Severe Weather
2	Severe Winter Weather
3	Earthquake

4	Tornado
5	Flood
6	Drought
7	Dam Failure

New Mitigation Actions

The following are new mitigation actions created during the 2024 update.

Action E2.20

Mitigation Action #20: Backup power system for Public Safety building sufficient to supply emergency power during storms or outages for heating and cooling stations for shelter of residents.					
Lead Agency/Department Organization: Village Administration	Supporting Agencies/ Organizations:	Estimated Cost: High	Potential Funding Source: General Fund Hazard Mitigation Grant Program (HMGP) Building Resilient Infrastructure and Communities (BRIC)	Estimated Projected Completion Date: Long-term	Hazard(s) Mitigated: Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Winds) Severe Winter Weather (Ice Storm, Heavy Snow, Blizzards, Extreme Cold)
Year Initiated	2027				
Applicable Jurisdiction	Village of East Hazel Crest				
Applicable Goal	1,2,3				
Applicable Objective	1,2,5,12				
Cost Analysis (Low, Medium, High)	High				
Priority and Level of Importance (Low, Medium, High)	Medium				
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	High				

Action/Implementation Plan and Project Description:	Backup power system for Public Safety building sufficient to supply emergency power during storms or outages for heating and cooling stations for shelter of residents.
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	N

Action E2.21

Mitigation Action #21: Improve storm water conveyance from ditches along residential roadways to divert water away from residences by enclosing runoff into storm sewer system.					
Lead Agency/Department Organization: Robinson Engineering	Supporting Agencies/Organizations: Village Administration	Estimated Cost: High	Potential Funding Source: General Fund Hazard Mitigation Grant Program (HMGP) Building Resilient Infrastructure and Communities (BRIC)	Estimated Projected Completion Date: Long-term	Hazard(s) Mitigated: Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Winds)
Year Initiated		2028			
Applicable Jurisdiction		Village of East Hazel Crest			
Applicable Goal		1,2,3			
Applicable Objective		1,2,8			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		High			

Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	High
Action/Implementation Plan and Project Description:	Improve storm water conveyance from ditches along residential roadways to divert water away from residences by enclosing runoff into storm sewer system.
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	N

Ongoing Mitigation Actions

During the 2024 update, these "ongoing" mitigation actions and projects were modified and/or amended, as needed.

Action E2.1

Mitigation Action #1: Adopt current building codes					
Lead Agency/Department Organization: Village Administration	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: General Fund	Estimated Projected Completion Date: Short-term	Hazard(s) Mitigated: All
Year Initiated	2014				
Applicable Jurisdiction	Village of East Hazel Crest				
Applicable Goal	1				
Applicable Objective	3,10				
Cost Analysis (Low, Medium, High)	Low				
Priority and Level of Importance (Low, Medium, High)	Medium				

Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium
Action/Implementation Plan and Project Description:	Adopted current International Building Codes. Process will be ongoing with revisions as necessary to keep updated.
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	O

Action E2.3

Mitigation Action #3: Continue with Mutual Aid Agreements					
Lead Agency/Department Organization: Village Administration	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: Fire Department, Police Department, Department of PW	Estimated Projected Completion Date: Ongoing	Hazard(s) Mitigated: All
Year Initiated	2014				
Applicable Jurisdiction	Village of East Hazel Crest				
Applicable Goal	1,4,5				
Applicable Objective	1,8				
Cost Analysis (Low, Medium, High)	Low				
Priority and Level of Importance (Low, Medium, High)	Medium				
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium				

Action/Implementation Plan and Project Description:	
Actual Completion Date or Ongoing Indefinite	Ongoing
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	O

Action E2.4

Mitigation Action #4: Clear Storm Drains					
Lead Agency/Department Organization: Department of Public Works	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: General Fund	Estimated Projected Completion Date: Ongoing	Hazard(s) Mitigated: Flooding
Year Initiated	2014				
Applicable Jurisdiction	Village of East Hazel Crest				
Applicable Goal	1,2,3				
Applicable Objective	3				
Cost Analysis (Low, Medium, High)	Low				
Priority and Level of Importance (Low, Medium, High)	High				
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium				
Action/Implementation Plan and Project Description:	Continuous work to keep all drains clear to prevent storm water accumulation.				
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed;	O				

R = Want Removed from Annex; **X** = No Action Taken/Delayed

Action E2.5

Mitigation Action #5: Remove hazardous dead trees					
Lead Agency/Department Organization: Department of Public Works	Supporting Agencies/ Organizations:	Estimated Cost: \$120,000	Potential Funding Source: General Fund	Estimated Projected Completion Date: Short-term	Hazard(s) Mitigated: Severe Weather
Year Initiated		2014			
Applicable Jurisdiction		Village of East Hazel Crest			
Applicable Goal		1,2,3			
Applicable Objective		2,3,13			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		Removed large number of dead trees within the village posing threats to property. Approximately 70% removed to date. Numerous dead trees have been removed, but we will still be removing more as funds are available.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed		O			

Action E2.6

Mitigation Action #6: Check for leaks in water supply system.					
Lead Agency/Department Organization: Department of Public Works	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: Water Fund	Estimated Projected Completion Date: Short-Term	Hazard(s) Mitigated: Drought
Year Initiated		2014			
Applicable Jurisdiction		Village of East Hazel Crest			
Applicable Goal		1,2,3			
Applicable Objective		2,3			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		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. New main has been installed in the 17200 through 17400 blocks of Lathrop Ave. Will continue as funds are available.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed		O			

Action E2.7

Mitigation Action #7: Provide residents mitigation information
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Lead Agency/Department Organization: Village Administration	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: General Fund	Estimated Projected Completion Date: Short-term	Hazard(s) Mitigated: All
Year Initiated		2014			
Applicable Jurisdiction		Village of East Hazel Crest			
Applicable Goal		5,6			
Applicable Objective		6,13			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Low			
Action/Implementation Plan and Project Description:		Information provided to residents in Village newsletters on a regular basis.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed		O			

Action E2.8

Mitigation Action #8: Update Village Hall electrical system to add generator for EOC					
Lead Agency/Department Organization: Village Administration	Supporting Agencies/ Organizations:	Estimated Cost: \$100,000	Potential Funding Source: General Fund	Estimated Projected Completion Date: Long-term	Hazard(s) Mitigated: All
Year Initiated		2014			
Applicable Jurisdiction		Village of East Hazel Crest			

Applicable Goal	1,2,3,5
Applicable Objective	1,2,5
Cost Analysis (Low, Medium, High)	High
Priority and Level of Importance (Low, Medium, High)	Low
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium
Action/Implementation Plan and Project Description:	Project stalled due to lack of funds, but remains an important future project.
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	X

Action E2.10

Mitigation Action #10: Support the countywide actions identified in this plan.					
Lead Agency/Department Organization: Village Administration	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: General Fund	Estimated Projected Completion Date: Short- and Long-term	Hazard(s) Mitigated: All
Year Initiated	2014				
Applicable Jurisdiction	Village of East Hazel Crest				
Applicable Goal	1,2,3,4,5,6				
Applicable Objective	All				
Cost Analysis (Low, Medium, High)	Low				
Priority and Level of Importance (Low, Medium, High)	High				

Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium
Action/Implementation Plan and Project Description:	
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	O

Action E2.11

Mitigation Action #11: Actively participate in plan maintenance.					
Lead Agency/Department Organization: Village Administration; EMRS	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: General Fund	Estimated Projected Completion Date: Short-term	Hazard(s) Mitigated: All
Year Initiated	2014				
Applicable Jurisdiction	Village of East Hazel Crest				
Applicable Goal	1,5				
Applicable Objective	3,4,6				
Cost Analysis (Low, Medium, High)	Low				
Priority and Level of Importance (Low, Medium, High)	High				
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium				
Action/Implementation Plan and Project Description:					
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority	O				

Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	
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Action E2.12

Mitigation Action #12: Consider participation in incentive-based programs					
Lead Agency/Department Organization: Village Administration	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: General Fund	Estimated Projected Completion Date: Long-term	Hazard(s) Mitigated: All
Year Initiated	2014				
Applicable Jurisdiction	Village of East Hazel Crest				
Applicable Goal	1,5				
Applicable Objective	3,4,5,6,7,9,10,11,13				
Cost Analysis (Low, Medium, High)	Low				
Priority and Level of Importance (Low, Medium, High)	Medium				
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium				
Action/Implementation Plan and Project Description:	Exploring Storm Ready at this time.				
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	O				

Action E2.15

Mitigation Action #15: Integrate the hazard mitigation plan into other plans					
Lead Agency/Department Organization: Robinson Engineering	Supporting Agencies/ Organizations:	Estimated Cost: Low	Potential Funding Source: General Fund	Estimated Projected Completion Date: Short-term	Hazard(s) Mitigated: All
Year Initiated		2014			
Applicable Jurisdiction		Village of East Hazel Crest			
Applicable Goal		1,5			
Applicable Objective		3,4,6,10,13			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		Currently being implemented into other plans			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed		O			

Action E2.16

Mitigation Action #16: Consider implementation of Capital Improvements Program (CIP)					
Lead Agency/Department Organization: Public Works	Supporting Agencies/ Organizations:	Estimated Cost: High	Potential Funding Source:	Estimated Projected Completion Date:	Hazard(s) Mitigated: All

			CIP component of the general fund (if implemented)	Long-term	
Year Initiated	2014				
Applicable Jurisdiction	Village of East Hazel Crest				
Applicable Goal	1,5				
Applicable Objective	1,2,7				
Cost Analysis (Low, Medium, High)	High				
Priority and Level of Importance (Low, Medium, High)	Medium				
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	High				
Action/Implementation Plan and Project Description:					
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	O				

Action E2.18

Mitigation Action #18: Improve Lathrop Ave storm sewer in response to lack of closed ditch drainage which can cause flooding affecting roadway safety and emergency vehicle access during storm events exceeding ditch capacity.					
Lead Agency/Department Organization: East Hazel Crest Police Department	Supporting Agencies/ Organizations: Army Corp of Engineers (ACOE) East Hazel Crest Police Department	Estimated Cost: 1.36 Million	Potential Funding Source: Grant (Army Corp of Engineers)	Estimated Projected Completion Date: 2025	Hazard(s) Mitigated: Flooding
Year Initiated	2023				

Applicable Jurisdiction	Village of East Hazel Crest
Applicable Goal	1,2,3
Applicable Objective	1,2,3
Cost Analysis (Low, Medium, High)	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).
Priority and Level of Importance (Low, Medium, High)	Medium
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Increase storm water conveyance away from new development and reduce chance of flooding roadway when water capacity is exceeded allowing safer travel on the roadway and continued vehicular access during extreme storm events. 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.
Action/Implementation Plan and Project Description:	The project will include installing 1,423 linear feet of box culvert with appurtenances to increase and contain the flow of storm water away from new development also reducing the hazard of the open deep water flow during a storm.
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed	I

Action E2.19

Mitigation Action #19: Remove and replace existing storm water lift station at Lathrop Ave retention area.					
Lead Agency/Department Organization: East Hazel Crest Police Department	Supporting Agencies/ Organizations:	Estimated Cost: \$900,000	Potential Funding Source:	Estimated Projected Completion Date:	Hazard(s) Mitigated: Flooding

	Wind Creek Casino (Developer)		Wind Creek Casino (Developer)	2025	
Year Initiated		2023			
Applicable Jurisdiction		Village of East Hazel Crest			
Applicable Goal		1,2,3			
Applicable Objective		1,2,3			
Cost Analysis (Low, Medium, High)		Medium—The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		The improved lift station will aid in the prevention of flooding in the area east of Lathrop Ave High—Project will provide an immediate reduction of risk exposure for life and property.			
Action/Implementation Plan and Project Description:		The improved lift station will aid in the prevention of flooding in the new development east of Lathrop Ave.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: N = New; I = In Progress Toward Completion; O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed		I			

Completed Actions

Completed Mitigation Actions - An archive of all identified and completed projects, including completed actions since 2014.

Completed Action Items
Install storm sewer piping in the area near the retention reservoir

Future Needs to Better Understand Risk/Vulnerability

Receiving training to better understand the mitigation grant application process. Continuation of ongoing mitigation projects as funds allow.

Additional Comments

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

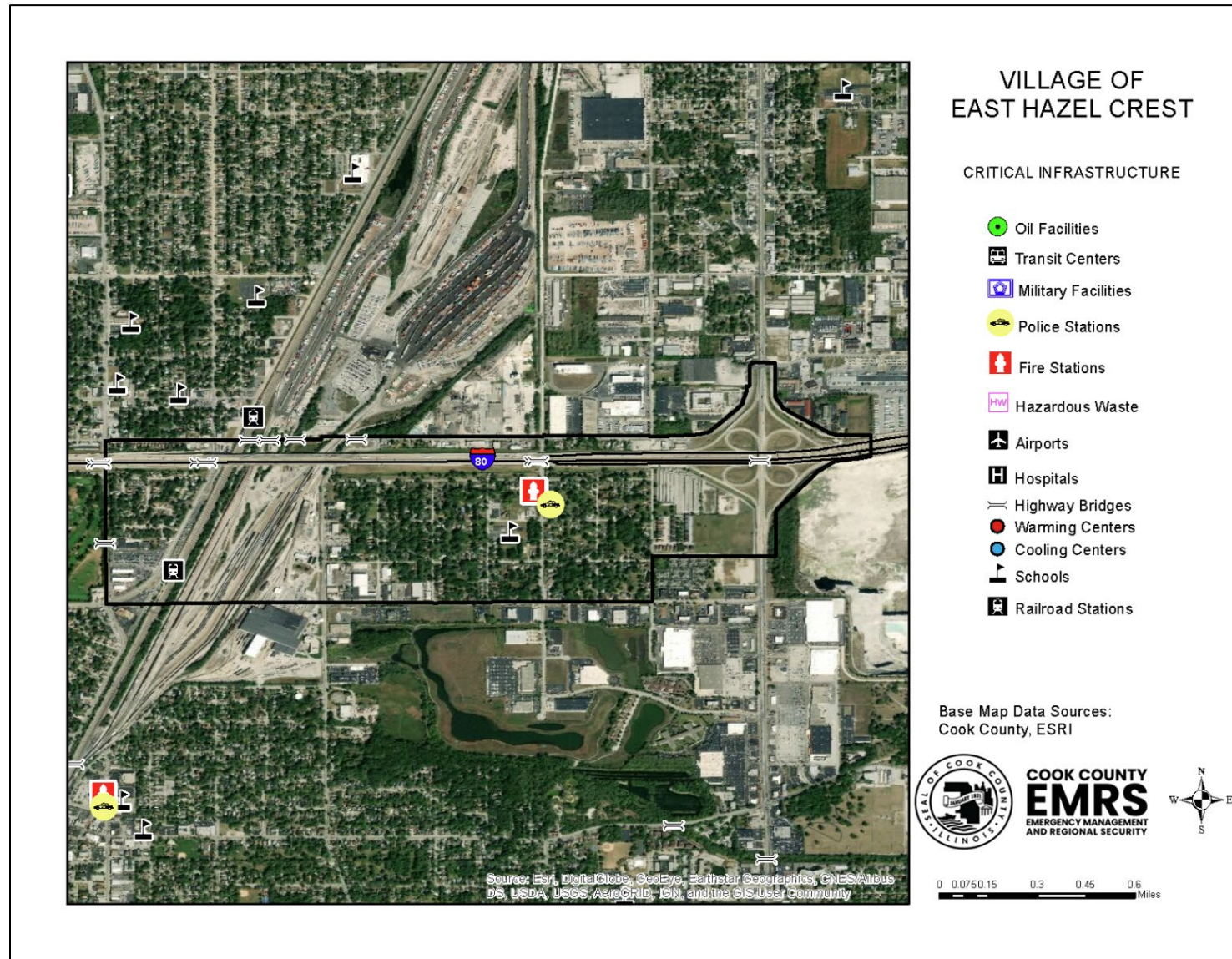
The Village has a small area of flood plain in the southwest corner of the village. It is currently being worked on in cooperation with FEMA for removal from flood plain status.

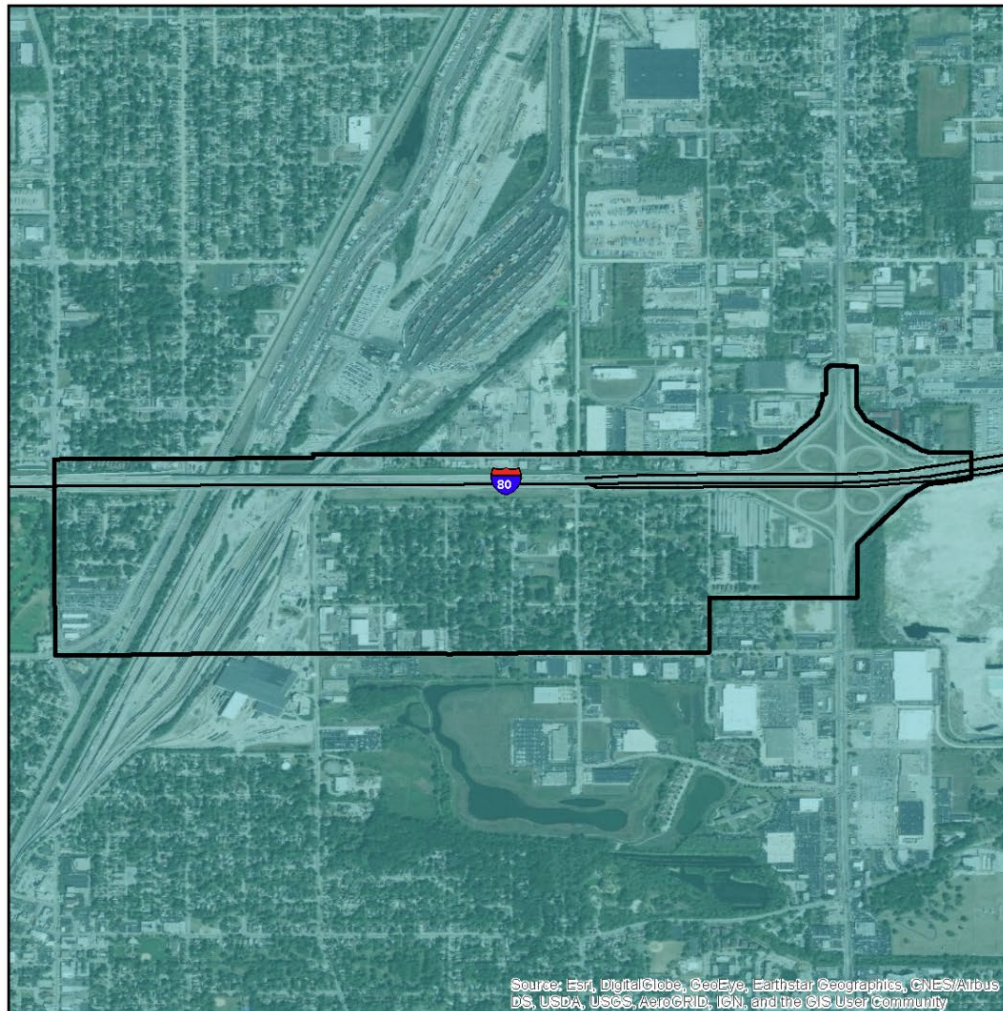
Within the last 10 years, the Cook County Highway Department and the Village of East Hazel Crest have completed structural projects to alleviate the only area of flooding we had. The roadway and adjacent area of 171st St from Ashland Ave to Wood St was completely rebuilt including upgrading the storm 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.

Hazard Mapping





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 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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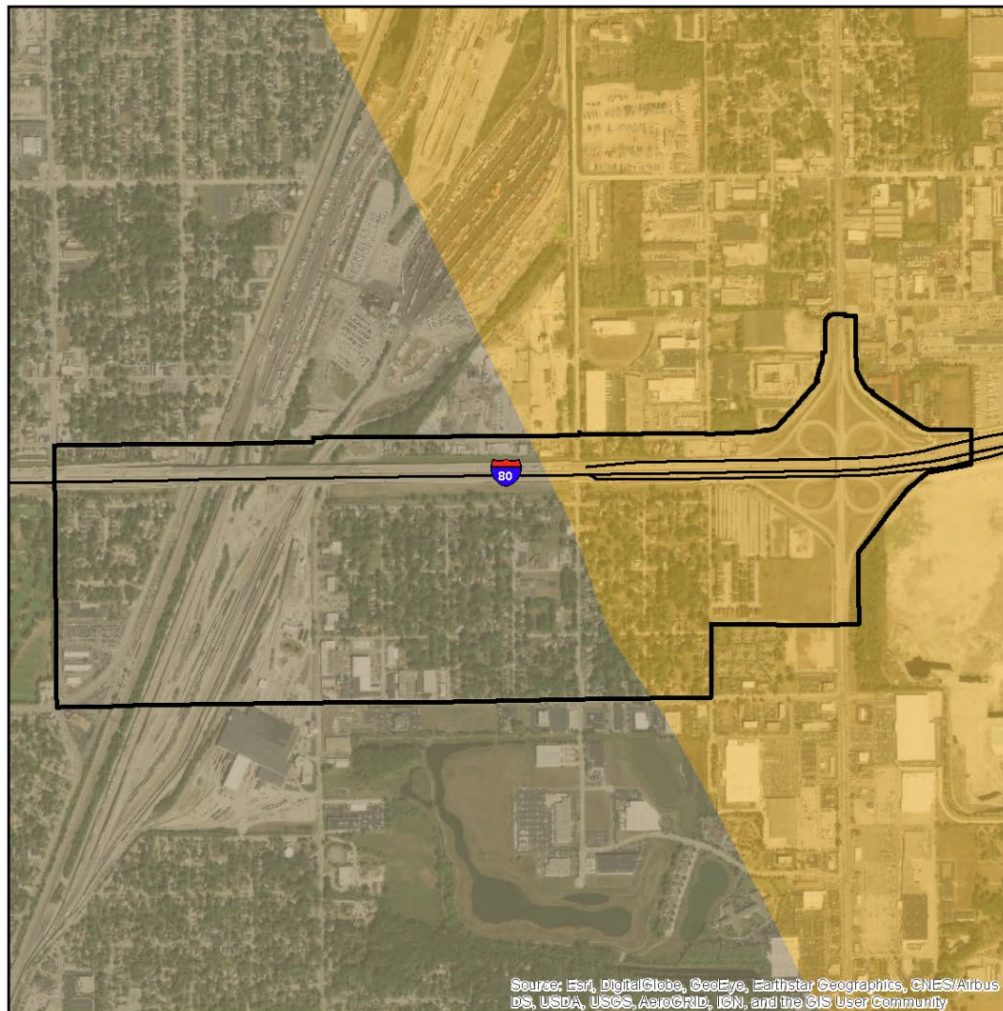


COOK COUNTY
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AND REGIONAL SECURITY



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

0 0.075 0.15 0.3 0.45 0.6 Miles



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

VILLAGE OF EAST HAZEL CREST

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. Pennell (2003) was the base map used for this work. Each State Geological Survey produced its own state map version of the Soil Site Class and Liquefaction Susceptibility maps. The procedures outlined in the NEHRP provisions (Building Seismic Safety Council, 2004) and the 2003 International Building Codes (International Code Council, 2002) were followed to produce the soil site class maps. CUSEC State Geologists used the entire column of soils material down to bedrock and did not include any bedrock in the calculation of the average shear wave velocity for the column, since it is the soil column and the difference in shear wave velocity of the soils in comparison to the bedrock which influences much of the amplification.

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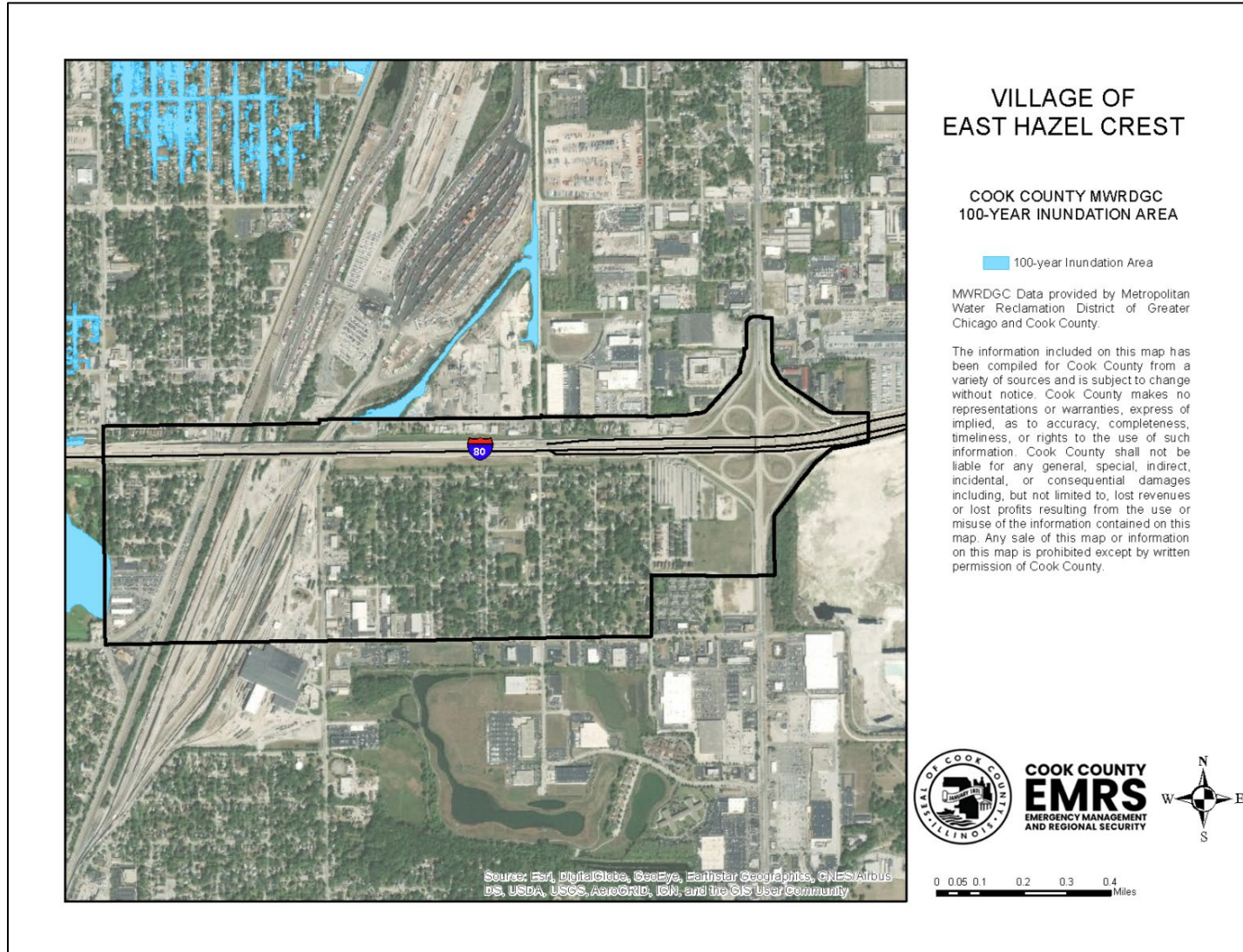


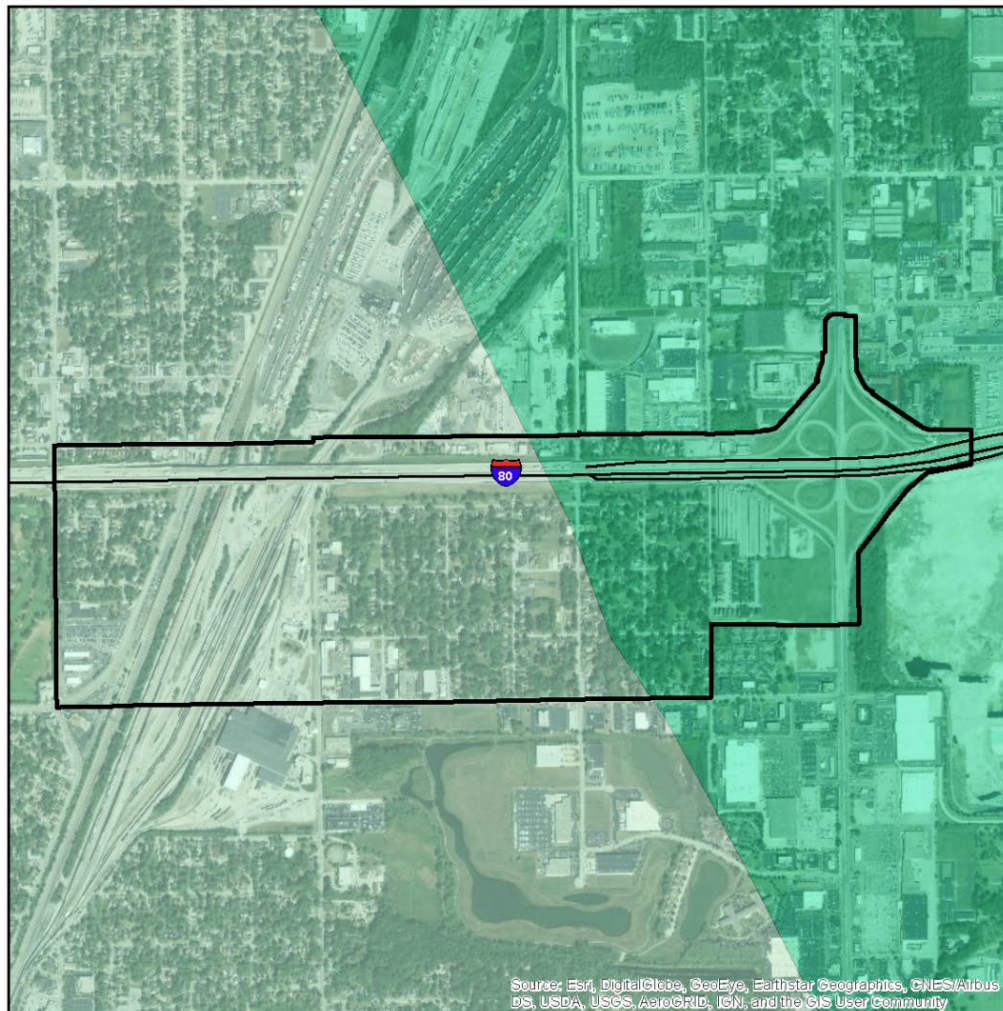
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0 0.05 0.1 0.2 0.3 0.4
Miles

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 EAST HAZEL CREST

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 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, 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.

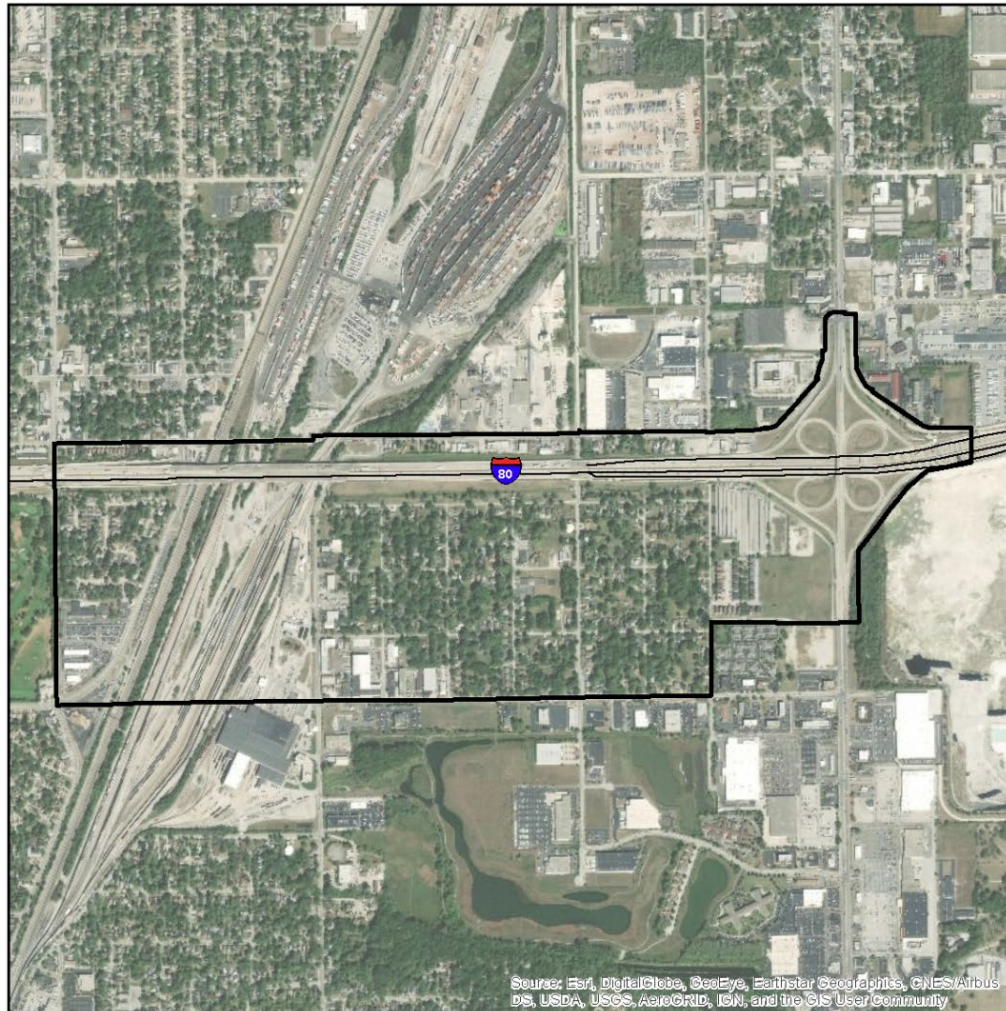
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0 0.05 0.1 0.2 0.3 0.4
Miles



VILLAGE OF EAST HAZEL CREST

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.

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



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0 0.05 0.1 0.2 0.3 0.4 Miles