

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

Wheeling Annex

FINAL

July 2019

Prepared for:



Cook County
Department of Homeland Security and Emergency Management
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Hazard Mitigation Point of Contact

Primary Point of Contact	Alternate Point of Contact
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Jurisdiction Profile

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

- Date of Incorporation: 1894
- Current Population: 38,878 as of the 2018 US Census population estimate, with 41,000 projected for 2019.
- Population Growth: The Village's population grew by 9.14% from 2000 to 2010, increasing by about 3,152 residents. A similar growth pattern is expected to occur between 2010 and 2020. The most anticipated population growth will occur in multifamily developments in the Village's remaining open land, as well as some existing residential subdivision redevelopment. The 2018 population estimates are on trend with continued population increase.
- Location and Description: The Village of Wheeling is a northwest suburb of Chicago in Cook County, located 29 miles northwest of the Chicago Loop. Suburbs adjacent to Wheeling include Riverwoods and Long Grove to the north, Prospect Heights and Arlington Heights to the south, Northbrook to the east, and Palatine to the west. Forest preserves border the entire eastern side of Wheeling, and interstate 294 runs parallel just on the opposite side of the forest preserves. The I-294/94 merge is three miles directly east of Wheeling and north of West Dundee Rd. The Chicago Executive Airport is located in Wheeling and Prospect Heights and is jointly managed by both villages. According to the U.S. Census Bureau, the Village of Wheeling has a total land area of 8.7 square miles.
- Brief History: In 1836, the stagecoach route was created between Chicago and Green Bay, Wisconsin. This route was known as the Des Plaines Valley Road (which today is known as Milwaukee Avenue). A settler known as Joseph Filkins built a tavern and hotel which eventually became the beginning of the Village of Wheeling. By 1840, an additional hotel was built, as well as a blacksmith shop, hardware store, and the community's first school. In 1886, the Wisconsin Central Railroad was constructed and a train station was added to the community. In order to maintain law and order over the growing community, the Village was officially incorporated in 1894. In 1925, a 40-acre grass and dirt airport opened on the Village's southeast side and became known as Gauthier's Flying Field. With further enhancements, including paved runways, the airport's name was changed to Palwaukee Airport in reference to the two nearby main streets; Palatine Road and Milwaukee Avenue. In the late 2000s, the name of the airport was once again changed to Chicago Executive Airport to reflect its transition to a corporate jet airport, as well as its status as the fourth busiest airport in Illinois. During Prohibition, the community was home to several speakeasies and gambling establishments rumored to be frequented by infamous Chicago gangsters. Following World War II, the community rapidly developed as a result of the influx of numerous manufacturing facilities and post-war construction of numerous single-family homes developments. Renewed growth occurred in the 1990s to bring Wheeling to its current population of 37,648. The community is serviced by the Metra commuter rail service which provides scheduled service to the City of Chicago.
- Climate: The Village's climate is typical of northeastern Illinois with mild summers and moderate winters with moderate accumulations of snow and ice. The average temperature in July is 72.9 °F and the average temperature in January is 22 °F. Annual precipitation is 36.8 inches of combined rain, snow, and ice.

- **Governing Body Format:** The Village of Wheeling operates under the Council-Manager form of government. Policy-making and legislative authority are vested in a governing board consisting of the Village President, Village Clerk, and six (6) Village Trustees. All members are elected at large on a non-partisan basis. Village Board members serve a four (4) year term with three (3) Village Trustees elected every two (2) years during open elections. The Village Board appoints a professional staff member to serve as the Village Manager who is responsible for overseeing the day to day operations of the Village. This body of government will assume the responsibility for the adoption and implementation of this plan. The Village provides a full range of community services including fire suppression and prevention, emergency medical treatment and transportation, police/law enforcement, design and maintenance of community infrastructure, economic development and planning, as well as senior and social services. Wheeling operates 10 Village departments including Community Development, Economic Development, Finance Department, Fire Department, Human Resources Department, Human Services, Information Technology, Police Department, Public Works Department, and Senior Services Division.
- **Development Trends:** Anticipated development levels for the Village of Wheeling are low to moderate consisting of both residential and light commercial development. Most new residential development will consist of multi-family structures of moderate height. The current comprehensive plan was adopted on July 28, 2003, with a recent update addressing an active transportation component on January 1, 2013. The Wheeling Town Center will be undergoing new construction and improvements. The Town Center will feature nearly 100,000 square feet of retail and restaurant space anchored by a CMX premium movie theater, as well as a 300-unit apartment complex with a six-level internal parking deck. CMX's build-out commitment to Wheeling represents an investment of over \$10 million.

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	2018 IBC with local amendments Ord. 5247 (2019)
Zonings	Yes	No	No	Yes	Wheeling Municipal Code Ord. 4719 (2012)
Subdivisions	Yes	No	No	No	Ord. 3954 (2005)
Stormwater Management	Yes	No	Yes	Yes	4322 (2008) Last site visit was 2012
Post Disaster Recovery	No	No	No	No	
Real Estate Disclosure	No	No	Yes	Yes	(765 ILCS 77/) Residential Real Property Disclosure Act.
Growth Management	No	No	No	No	
Site Plan Review	Yes	No	No	No	Ord. 4719 (2012)
Public Health and Safety	Yes	No	Yes	No	Cook County Board of Health and local health inspectors.
Environmental Protection	No	No	No	No	
Planning Documents					
General or Comprehensive Plan	Yes	No	No	No	Ord. 3761 (2003)
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>					Yes
Floodplain or Basin Plan	Yes	No	No	No	In progress
Stormwater Plan	Yes	No	Yes	No	MWRD Watershed Plan/Village Plan

Capital Improvement Plan	Yes	No	No	No	Res 18-177 (2018)
<i>What types of capital facilities does the plan address?</i>					Utilities & Facilities
<i>How often is the plan revised/updated?</i>					Annually
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	No	No	Yes	Yes	Cook County DHSEM
Threat and Hazard Identification and Risk Assessment	No	No	Yes	No	Cook County DHSEM Preparing THIRA
Terrorism Plan	No	No	Yes	Yes	Cook County DHSEM
Post-Disaster Recovery Plan	No	No	No	No	
Continuity of Operations Plan	No	No	Yes	No	Cook County DHSEM
Public Health Plans	No	No	Yes	No	Cook County DPH

TABLE: FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
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	No
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	Yes
Other (Storm Water Management Fee)	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	Community Development – Director, Village Planner, Assistant Village Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Public Work (Water & Sewer Operations) – Director, Superintendent, and Foreman
Planners or engineers with an understanding of natural hazards	Yes	Community Development – Village Engineer
Staff with training in benefit/cost analysis	Yes	Community Development – Director/Village Planner
Surveyors	No	
Personnel skilled or trained in GIS applications	Yes	Cook County GIS Consortium/Village GIS Staff
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Cook County DHSEM/Village of Wheeling
Grant writers	Yes	Provided within each Village department

TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your jurisdiction?	Community Development
Who is your jurisdiction’s floodplain administrator? (department/position)	Community Development, Village Engineer
Are there any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	Ord. 4322 04/21/2008
When was the most recent Community Assistance Visit or Community Assistance Contact?	1/18/2012 - pending review in 2019
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	None identified
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 - CFM Certification
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?	Yes

TABLE: COMMUNITY CLASSIFICATIONS			
	Participating?	Classification	Date Classified
Community Rating System	Yes	6	2015
Building Code Effectiveness Grading Schedule	Yes	Unknown	N/A
Public Protection/ISO	Yes	2	2017
StormReady	Yes	Gold (Countywide)	2014
Tree City USA (Growth Award Community)	Yes	29 years	1990

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: 15
- Number of FEMA-Identified Severe Repetitive Loss Properties: 1
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties That Have Been Mitigated: 2

TABLE: NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster Number (if applicable)	Date	Preliminary Damage Assessment
High Wind	-	2/24/2019	-
High Wind, Heavy Snow, and Ice Storm	-	2/11/2019 - 2/12/2019	-
Extreme Cold	-	1/31/2019	-
Extreme Cold	-	1/30/2019	-
Heavy Snow	-	1/19/2019	-
Heavy Snow	-	11/27/2018	-
High Wind	-	10/20/2018	-
Heavy Rain	-	8/7/2018	-
Extreme Heat	-	6/29/2018 - 7/1/2018	-
Extreme Heat	-	6/16/2018 - 6/18/2018	-
Flash Flood	-	6/8/2018	-
Extreme Heat	-	5/27/2018	-
Heavy Rain	-	5/2/2018	-
High Wind	-	4/14/2018	-
Extreme Cold	-	1/8/2018	-
High Wind	-	12/5/2017	-
Heavy Rain	-	10/14/2017 - 10/15/2017	-
Extreme Heat	-	9/20/2017 - 9/27/2017	-
Heavy Rain	-	7/12/2017 - 7/13/2017	-
Heavy Rain	-	4/29/2017 - 4/30/2017	-
Heavy Snow	-	3/12/2017 - 3/15/2017	-

High Wind	-	3/8/2017	-
High Wind	-	1/10/2017	-
Heavy Snow	-	12/12/2016	-
Heavy Rain	-	6/23/2016	-
Heavy Rain	-	5/26/2016	-
High Wind	-	4/2/2016	-
High Wind	-	3/16/2016	-
High Wind	-	2/19/2016	-
High Wind	-	11/28/2015	-
Heavy Snow	-	11/22/2015	-
Heavy Snow	-	1/31/2015	-
High Wind	-	11/1/2014	-
Severe Weather	-	9/5/2014	-
High Wind	-	6/21/2014	-
Hail	-	4/12/2014	-

Jurisdiction-Specific Hazards and Impacts

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

Flood*: The Village has experienced flooding at the Dunhurst East (Southeast of Dundee Road and Elmhurst Road) and Meadowbrook (Wolf Road) Subdivisions. Multiple areas in the Village suffer from repeated flooding. Potential buyouts or infrastructure projects to address the flooding in the rep. loss areas represent future mitigation projects/opportunities.

Extreme Heat: The Village's seven (7) nursing homes leave the community vulnerable to extreme heat.

High Winds: The community has experienced high winds at the Chicago Executive Airport (Milwaukee Avenue and Palatine Road).

Extreme Cold: Similar to the impacts of extreme heat, the community is especially vulnerable to extreme cold because of its seven (7) nursing homes.

**The intersection of Wayne Pl/Bridget Pl intersection and Lakeside Circle once suffered from repeated flooding. These intersections have been dealt with through the installation of larger storm drains. Flooding should no longer be an issue.*

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	51
2	Severe Winter Weather	48
3	Flood	45
4	Tornado	39
5	Earthquake	36
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 W3.1—Corrugated Metal Arch Storm Line Replacement						
Completed	Flood, Severe Weather	1, 2, 9	Village of Wheeling	\$1.5 million; Low	Village of Wheeling	Completed
Action W3.2—Replace Jeffrey Avenue Bridge.						
Completed	Flood, Severe Weather	1, 2	Village of Wheeling	\$1.18 million; Low	Highway Bridge Replacement & Rehabilitation, Village of Wheeling	Completed
Action W3.3—Develop Stormwater Master Community Plan.						
Completed	Flood, Severe Weather	1, 3, 9	Village of Wheeling	\$130,000; Low	Village of Wheeling, Grants	Completed
Action W3.4—Complete Acquisition of Fox Point Mobile Home Park (Repetitive Loss Mitigation).						
Completed	Flood, Severe Weather	1, 3, 7	Village of Wheeling	\$5.5 million; High	Highway Bridge Replacement & Rehabilitation,	Completed

					Village of Wheeling	
Action W3.5 —Harden glass on all Village critical buildings.						
Ongoing	Severe Weather, Tornado, Earthquake	1, 4, 5	Village of Wheeling	\$1.5million; Medium	Highway Bridge Replacement & Rehabilitation, Village of Wheeling	2016/2017, Short-term
Action W3.6 —Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.						
Ongoing	All	7, 13	Village of Wheeling	High	FEMA Hazard Mitigation Grants	Long-term (depending on funding)
Action W3.7 —Continue to Support the County-wide Actions Identified in the Plan.						
Ongoing	All	All	Village of Wheeling	Low	General Fund	Short- and Long-term
Action W3.8 —Actively participate in the plan maintenance strategy identified in this plan.						
Ongoing	All	3, 4, 6	DHSEM, Village of Wheeling	Low	General Fund	Short-term
Action W3.9 —Continue to Maintain/Enhance the Village's Classification Under the CRS Program.						
Ongoing	All	3, 4, 5, 6, 7, 9, 10, 11, 13	Village of Wheeling	Low	General Fund	Long-term
Action W3.10 —Maintain Good Standing Under the National Flood Insurance Program.						
Ongoing	Flooding	4, 6, 9	Village of Wheeling	Low	General Fund	Short-term and Ongoing
Action W3.11 —Implement a Program to Record High Water Marks Following High Water Events.						
Ongoing	Flooding, Severe Weather	3, 6, 9	Village of Wheeling	Medium	General Fund; FEMA Grant Funds (Public Assistance)	Long-term
Action W3.12 —Integrate the HMP into Other Plans, Programs, or Resources that Dictate Land Use or Redevelopment.						
Ongoing	All	3, 4, 6, 10, 13	Community Development	Low	General Fund	Short-term
Action W3.13 —Develop Storm Water Modeling Program of the Dunhurst Subdivision to Analyze the Options for Further Flood Mitigation.						

Ongoing	Flooding, Severe Weather	2, 3	Village of Wheeling	TBD	TBD	2019/2020
Action W3.14 —Implementation of Storm Water Credit Allocation Program (I.E. Heritage Lake Utilization by Developers).						
Completed	Flooding, Severe Weather	1, 11	Village of Wheeling	TBD	TBD	2018
Action W3.15 —Storm Water Diversion - Northside of Dundee Road to Heritage Lake.						
Completed	Flooding, Severe Weather	2, 7, 13	Village of Wheeling	TBD	TBD	2018
Action W3.16 —Remapping of Buffalo Creek Floodplain.						
Ongoing	Flooding	1, 3, 4	Village of Wheeling	TBD	TBD	2019
Action W3.17 —Implement Drainage Improvements in East Dunhurst subdivision, East Chester subdivision, and North Wheeling Road						
New	Flooding	7, 9	Village of Wheeling	\$3,936,404; High	Grants and Local Funding	2022
Action W3.18 —Implement Wheeling Park District – Chamber Park Rain Garden						
New	Flooding	13	MWRD	\$160,000	MWRD	TBD
(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	3	Medium	Low	Yes	No	Yes	Medium
2	2	Medium	Low	Yes	No	Yes	Medium
3	3	Medium	Low	Yes	No	Yes	Medium
4	3	High	High	Yes	Yes	No	Low
5	3	Medium	Low	Yes	Yes	No	High
6	2	High	High	Yes	Yes	No	Medium
7	13	Medium	Low	Yes	No	Yes	High
8	3	Medium	Low	Yes	Yes	Yes	High
9	9	Medium	Low	Yes	No	Yes	Medium
10	3	Medium	Low	Yes	No	Yes	High
11	3	Medium	Medium	Yes	Yes	No	Medium
12	5	Medium	Low	Yes	No	Yes	High

13	2	TBD	TBD	TBD	Yes	TBD	TBD
14	2	TBD	TBD	TBD	TBD	TBD	TBD
15	3	TBD	TBD	TBD	Yes	TBD	TBD
16	3	TBD	TBD	TBD	Yes	TBD	TBD
17	2	Medium	High	Yes	Yes	TBD	High
18	1	High	Low	Yes	Yes	TBD	High

(a) See Chapter 1 for explanation of priorities.

New Mitigation Actions

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

Mitigation Action	Implement Drainage Improvements in East Dunhurst subdivision, East Chester subdivision, and North Wheeling Road
Year Initiated	2019
Applicable Jurisdiction	Village of Wheeling
Lead Agency/Organization	Village of Wheeling
Supporting Agencies/Organizations	
Applicable Goal	Develop and implement sustainable, cost-effective, and environmentally sound risk-reduction (mitigation) projects. Protect the lives, health, safety, and property of the citizens of Cook County from the impacts of natural hazards. Protect public services and critical facilities, including infrastructure, from loss of use during natural hazard events.
Applicable Objective	Retrofit, purchase, or relocate structures in high hazard areas, including those known to be repetitively damaged. Provide or improve flood protection on a watershed basis with flood control structures and drainage maintenance plans.
Potential Funding Source	Grants and Local Funding
Estimated Cost	\$3,936,404
Benefits (loss avoided)	Reduce property loss due to flooding
Projected Completion Date	2022
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	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.
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).
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Upgrade storm sewer systems in affected areas with enhanced engineering and redundancy of routing of ground water to reduce flooding and impact to private properties.

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

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

Mitigation Action	Implement Wheeling Park District – Chamber Park Rain Garden
Year Initiated	
Applicable Jurisdiction	Village of Wheeling
Lead Agency/Organization	MWRD
Supporting Agencies/Organizations	Village of Wheeling
Applicable Goal	Develop and implement sustainable, cost-effective, and environmentally sound risk-reduction (mitigation) projects.
Applicable Objective	Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	N/A
Estimated Cost	\$160,000; MWRD Contribution: \$61,000
Benefits (loss avoided)	N/A
Projected Completion Date	TBD
Priority and Level of Importance (Low, Medium, High)	High
Benefit Analysis (Low, Medium, High)	High
Cost Analysis (Low, Medium, High)	Low
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	ID: Wheeling PD Contract: 18-IGA-19 Watershed: Lower Des Plaines Location: Wheeling, IL Construction of a rain garden as part of the Chamber Park parking lot reconstruction in Wheeling. The MWRD provided funding for 38.1% of the total \$160,000 construction cost. Project provides 41,732 gallons of design retention capacity. The Park District is to provide long term maintenance per the intergovernmental agreement.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2018	New	
2019	Ongoing	Substantially completed in 2018
2020		
2021		
2022		
2023		

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

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.

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.5	Harden Glass on all Village Buildings.	
Status Description: No	Incomplete, insufficient funding. Apply for FEMA PDA Grant in 2019.	X
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.6	Support Retrofitting, Purchase, or Relocation of Structures in Flood-prone Areas.	
Status Description: Yes	Implemented when opportunities arise (Ex. High Tech Automotive – flood proofing project completed in 2017).	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.7	Continue to Support the County-wide Actions Identified in the Plan.	
Status Description: Yes	Continued involvement in the HMP process.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.8	Actively Participate in the Plan Maintenance Strategy Identified in the Plan.	
Status Description: Yes	Continued involvement in the HMP process.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.9	Continue to Maintain/Enhance the Village's Classification Under the CRS Program.	
Status Description: Yes	Re-adopted in 2019. Community Re-assessment pending. Repetitive loss documentation annually submitted.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.10	Maintain Good Standing Under the National Flood Insurance Program.	
Status Description: Yes	Documentation required by FEMA and ISO are maintained current. All renovations and new construction managed in accordance with all requirements of the program.	O
Completion status legend:		
N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.11	Implement a Program to Record High Water Marks Following High Water Events.	
Status Description: Yes	Program implemented in 2015 and ongoing, as needed.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.12	Integrate the HMP into Other Plans, Programs, or Resources that Dictate Land Use or Redevelopment.	
Status Description: Yes	Completed and integrated into the Village's land use planning/development process, as needed. Incorporated into the Village's ordinances and codes.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.13	Develop Storm Water Modeling Program of the Dunhurst Subdivision to Analyze the Options for Further Flood Mitigation.	
Status Description: Yes	RFP released in 2018. Completion of storm water modeling planned for 2019/2020. Re-issued RFP 2019.	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.16	Remapping of Buffalo Creek Floodplain.	
Status Description: Yes	Project currently underway. Remapping results anticipated in 2019.	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

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

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.1	Corrugated Metal Arch Storm Line Replacement.	
Status Description: Yes	Completed in 2015.	C
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.2	Replacement of Jeffery Avenue Bridge Structure (Removal of Creek Flow Impediment).	
Status Description: Yes	Completed in 2015.	C
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.3	Develop Stormwater Master Community Plan.	
Status Description: Yes	Completed in 2016.	C
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.4	Complete Acquisition of Fox Point Mobile Home Park (Repetitive Loss Mitigation)	
Status Description: Yes	Completed in 2018.	C
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.14	Implementation of Storm Water Credit Allocation Program (I.E. Heritage Lake Utilization by Developers).	
Status Description: Yes	Completed in 2018.	C
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# W-3.15	Storm Water Diversion - Northside of Dundee Road to Heritage Lake.	
Status Description: Yes	Completed in 2018.	C
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

Future Needs to Better Understand Risk/Vulnerability

No needs have been identified at this time.

Additional Comments

No additional comments at this time.

HAZUS-MH Risk Assessment Results

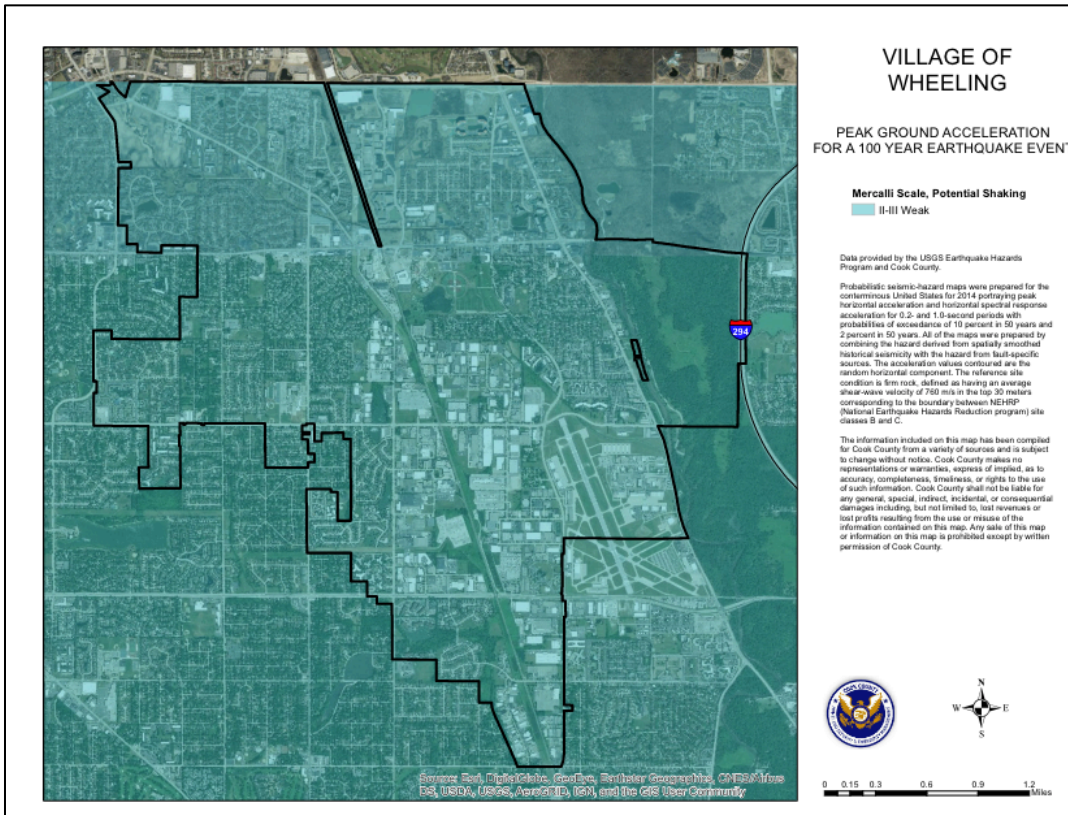
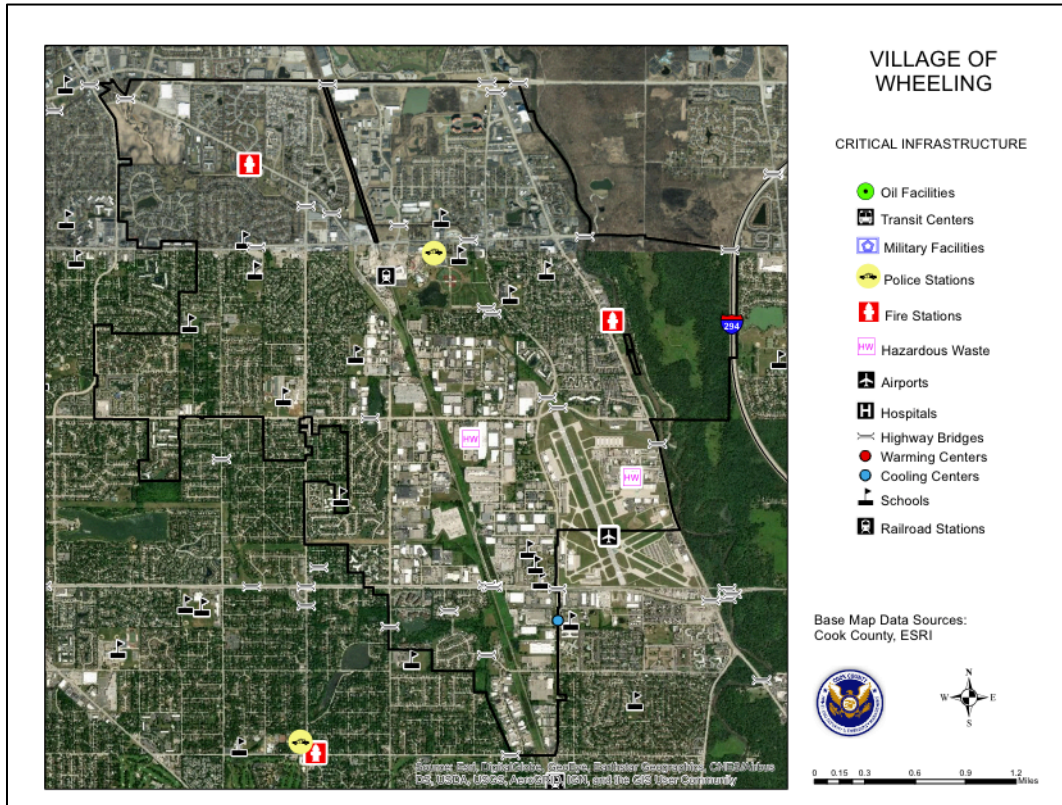
WHEELING EXISTING CONDITIONS	
2010 Population	37,648
Total Assessed Value of Structures and Contents	\$5,120,706,736
Area in 100-Year Floodplain	1,232.27 acres
Area in 500-Year Floodplain	1,791.04 acres
Number of Critical Facilities	109

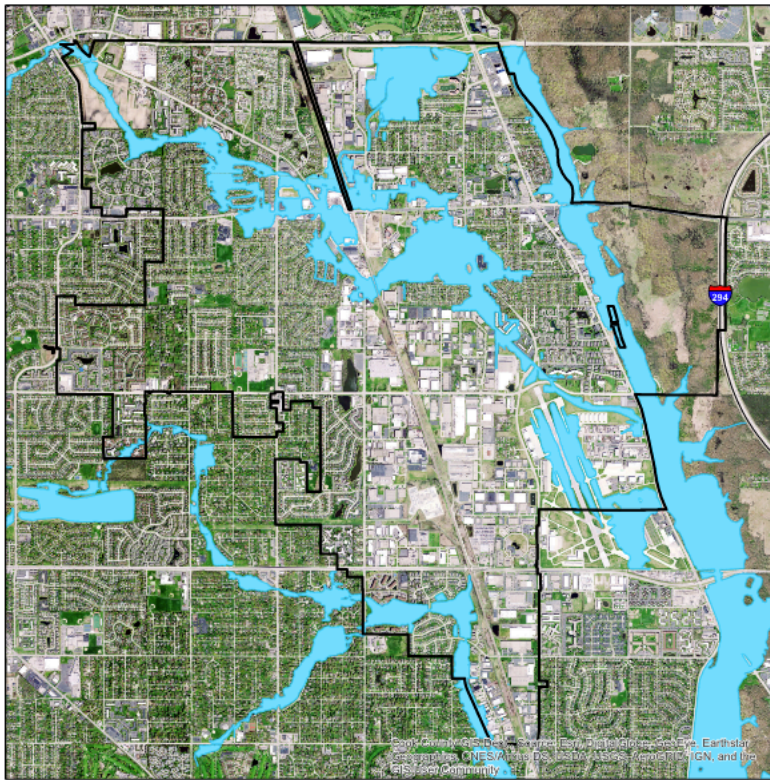
HAZARD EXPOSURE IN WHEELING						
	Number Exposed		Value Exposed to Hazard			% of Total Assessed Value Exposed
	Population	Buildings	Structure	Contents	Total	
Dam Failure						
Buffalo Creek	8,304	2,555	\$996,040,000	\$711,629,000	\$1,707,669,000	33.35%
U. Salt Cr. #2	0	0	\$0	\$0	\$0	0.00%
Touhy	0	0	\$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	2,893	890	\$432,910,625	\$351,673,715	\$784,584,340	15.32%
500-Year	5,775	1,777	\$727,587,034	\$574,846,001	\$1,302,433,035	25.43%
Tornado						
100-Year	—	—	\$775,353,926	\$584,485,042	\$1,359,838,968	26.56%
500-Year	—	—	\$948,212,754	\$819,906,622	\$1,768,119,376	34.53%

ESTIMATED PROPERTY DAMAGE VALUES IN WHEELING				
	Estimated Damage Associated with Hazard			% of Total Assessed Value Damaged
	Building	Contents	Total	
Dam Failure				
Buffalo Creek	\$12,190,000	\$25,006,000	\$37,196,000	0.73%
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	\$12,952,866	\$03,262,527	\$16,215,393	0.32%
Flood				
10-Year	\$4,523,573	\$3,716,002	\$8,239,575	0.16%
100-Year	\$18,856,156	\$18,523,373	\$37,379,529	0.73%
500-Year	\$50,892,642	\$56,588,916	\$107,481,558	2.10%
Tornado				
100-Year	\$77,535,393	\$58,448,504	\$135,983,897	2.66%
500-Year	\$138,439,062	\$119,706,367	\$258,145,429	5.04%

Hazard Mapping





VILLAGE OF WHEELING

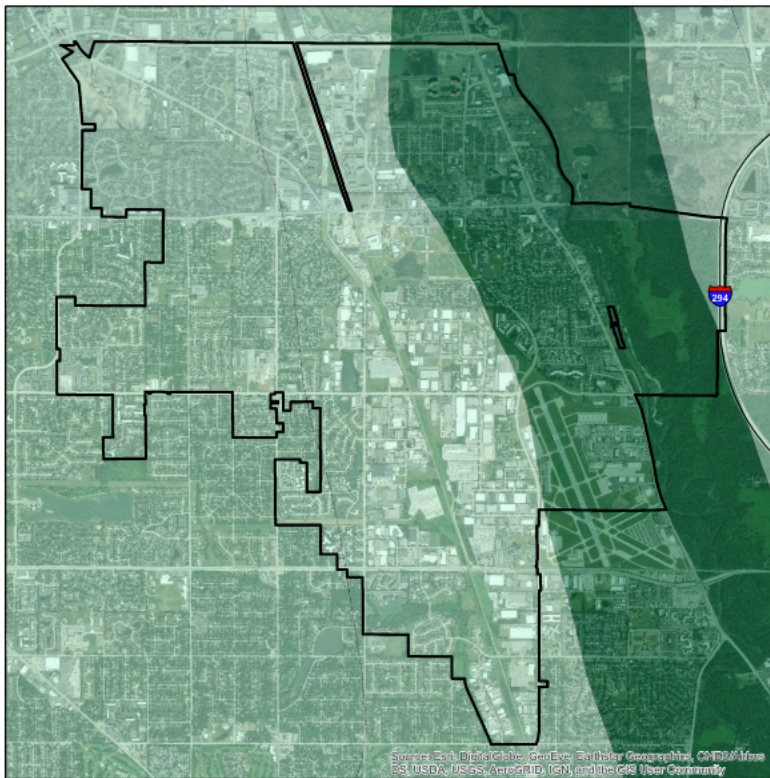
COOK COUNTY MWRDGC 100-YEAR INUNDATION AREA

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>.



VILLAGE OF WHEELING

LIQUEFACTION SUSCEPTIBILITY

LIQUEFACTION SUSCEPTIBILITY

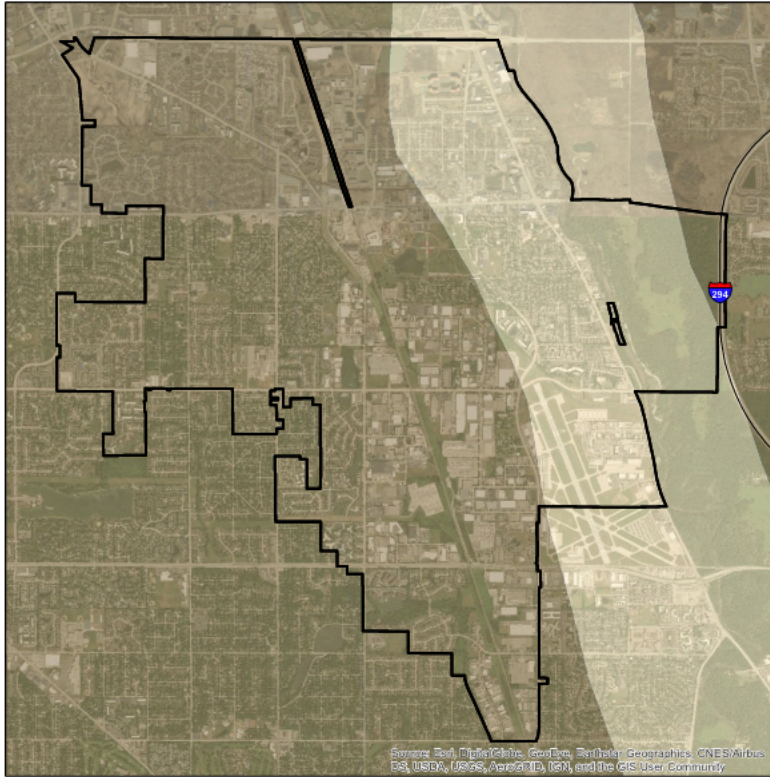
high
low
very low

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

The Central United States Earthquake Consortium (CUSEC) State Geologists produced a regional Soil Site Class map (NEHRP Soil Profile Type Map), a Liquefaction Susceptibility Map and a Soil Response Map for the 8 states to be used in the FEMA New Madrid Catastrophic Planning Initiative Phase II work. The USGS Geologic Investigation Series I-2789 Map of Surficial Deposits and Materials in the Eastern and Central United States (East of 102 degrees West Longitude) by David S. Fullerton, Charles A. Bush and Jean N. Perret (2003) was the base map used for this work. Each State Geological Survey produced its own state map version of the Soil Site Class and Liquefaction Susceptibility maps. The procedures outlined in the NEHRP provisions (Building Seismic Safety Council, 2004) and the 2003 International Building Codes (International Code Council, 2003) were followed to produce the soil site class maps. CUSEC State Geologists used the entire column of soils material down to bedrock and did not include any bedrock in the calculation of the average shear wave velocity for the column, since it is the soil column and the difference in shear wave velocity of the soils in comparison to the bedrock which influences much of the amplification.

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

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

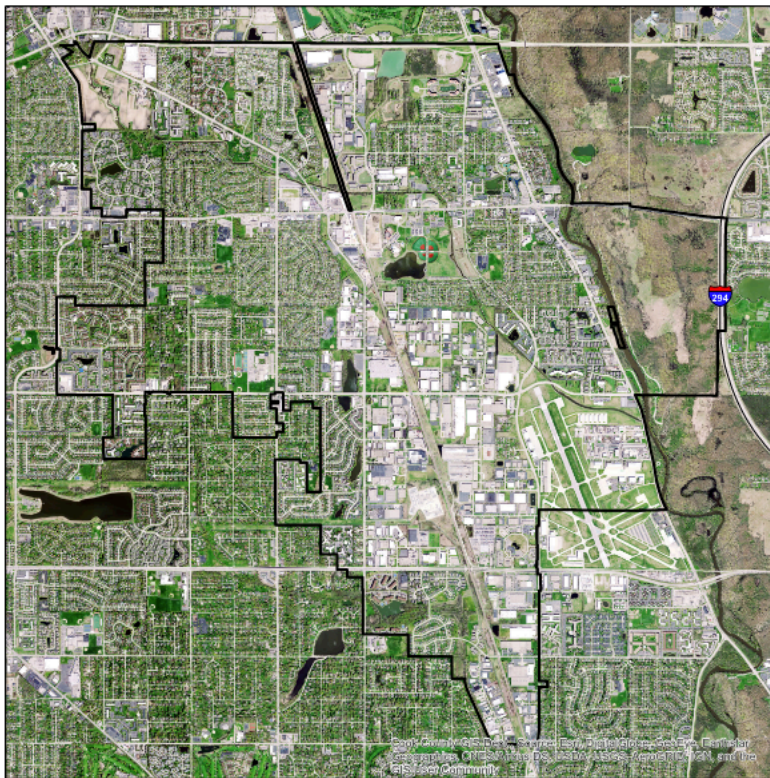
Data provided by the Illinois State Geological Survey and Cook County.

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



VILLAGE OF WHEELING
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