

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

Berkeley Annex

FINAL

July 2019

Prepared for:



Cook County
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Hazard Mitigation Point of Contact

Primary Point of Contact	Alternate Point of Contact
Rudy Espiritu, Village Administrator 5819 Electric Avenue Berkeley, IL 60163 Telephone: 708-234-2619 Email Address: respiritu@berkeley.il.us	Michael N Kuryla III, Fire Chief 5819 Electric Avenue Berkeley, IL 60163 Telephone: 708-234-2642 Email Address: mkuryla@berkeley.il.us

Jurisdiction Profile

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

- **Date of Incorporation:** 1924
- **Current Population:** The US Census 2016 estimated population was 5,148.
- **Population Growth:** Berkeley has a stable population with a built out community. The population change from 2010 to 2016 was -1.13 percent.
- **Location and Description:** The Village of Berkeley is a suburb of Chicago in Cook County located 15 miles west of downtown Chicago. The neighboring towns that border Berkeley include: Northlake to the north, Hillside to the south, Bellwood to the east, and Elmhurst to the west. Located just one-half block from both the Tri-State and Eisenhower expressways, Berkeley is easily accessible to neighboring towns and connecting interstate highways. The Village of Berkeley is located on Cook County's western border. With Interstates 290 and 294 forming its western and part of its southern boundary, and the Union Pacific Railroad and the large Proviso classification yard to the north. Berkeley is also located just seven miles from Chicago's O'Hare International Airport and is the home to major corporations including World Dryer, Vanee Foods, and Preferred Meals. Berkeley is also adjacent to the Union Pacific Proviso Rail yard (Global II), which is one of the world's largest intermodal transportation facilities. The Village of Berkeley has a total land area of 1.40 square miles.
- **Brief History:** Berkeley has ready access to the metropolitan region. Yet the transportation corridors that make Berkeley accessible to distant places also serve to separate the Village from its nearest neighbors (Elmhurst, Bellwood and Hillside) creating a small-town atmosphere. The 1902 completion of the Chicago, Aurora & Elgin Railroad (interurban) gave the area its first passenger rail service at a stop called Berkeley. Subdivision in 1908 and again in 1914–1915 brought residential construction and new residents, many of whom were English, to the area. At the initiative of these newcomers, the Village of Berkeley was incorporated in 1924. Although Berkeley is abundant with various types of business and industries, it continues to remain a predominantly residential community. Berkeley holds onto the small town feel of community, rich with diversity, history, and tradition.
- **Climate:** Berkeley's climate is similar to that of the City of Chicago. As such, the climate is classified as humid continental with all four seasons distinctly represented: wet springs; hot, and often humid summers; pleasant autumns; and cold winters. Annual precipitation is average, and reaches its lowest points in the months of January and February, and peaks in the months of May and June.
- **Governing Body Format:** The Village of Berkeley has the strong Village President form of Government retaining the Trustee-Village Form with the election of a Village President (Mayor) and six Trustees, all of whom are elected on an at-large basis (not representing specific wards or districts) for four-year terms. This body will assume the responsibility for the adoption and implementation of this plan. The Village operates 5 departments including: Administration, Building & Code Enforcement, Fire Department, Police Department, and Public Works.

- **Development Trends:** Berkeley is an almost entirely built out community with minimal residential and commercial redevelopment occurring on an annual basis.

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	Municipal Code 05-52 adopted: 2005
Zonings	Yes	No	No	Yes	(65 ILCS 5/) Illinois Municipal Code. Municipal Code 08-15 adopted: 2008
Subdivisions	Yes	No	No	No	Chapter 16 Village of Berkeley (VOB) 1960
Stormwater Management	No	No	Yes	Yes	State regulates industrial activity from Construction sites 1 acre or larger under section 402 CWA. MS4. MWRD
Post Disaster Recovery	No	No	No	No	
Real Estate Disclosure	Yes	No	Yes	Yes	(765 ILCS 77/) Residential Real Property Disclosure Act.

					Municipal Code 12-0, Adopted: 2012
Growth Management	Yes	No	No	No	February 2010 Comprehensive Plan
Site Plan Review	Yes	No	No	No	Municipal Code 05-52 adopted: 2005
Public Health and Safety	No	No	Yes	Yes	Cook County Board of Health. Municipal Code 08-15 adopted: 2008
Environmental Protection	Yes	No	No	No	NPDES
Planning Documents					
General or Comprehensive Plan	Yes	No	No	No	February 2010 Comprehensive Plan
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>					Plan includes land use and sustainable development elements
Floodplain or Basin Plan	Yes	No	Yes	No	MWRD
Stormwater Plan	No	No	Yes	No	MWRD-Lower Des Plains River Detailed Watershed Plan
Capital Improvement Plan	Yes	No	No	No	
<i>What types of capital facilities does the plan address?</i>					Projects Infrastructure
<i>How often is the plan revised/updated?</i>					6-year CIP, reviewed and updated annually
Habitat Conservation Plan	No	No	No	No	

Economic Development Plan	Yes	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	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Home Rule

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	Civil Tech
Engineers or professionals trained in building or infrastructure construction practices	Yes	Civil Tech
Planners or engineers with an understanding of natural hazards	Yes	Don Morris, Civil Tech, Baxter & Woodman
Staff with training in benefit/cost analysis	Yes	Finance, Public Works, Police Dept., Fire Dept., Building Dept.
Surveyors	Yes	Civil Tech
Personnel skilled or trained in GIS applications	Yes	Cook County GIS Consortium
Scientist familiar with natural hazards in local area	No	N/A
Emergency manager	Yes	Fire Chief
Grant writers	Yes	Contract for service

TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

What department is responsible for floodplain management in your jurisdiction?	Admin, Public Works
Who is your jurisdiction’s floodplain administrator? (department/position)	Admin
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	National Flood Insurance
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, N	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?	No
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

TABLE: COMMUNITY CLASSIFICATIONS

	Participating?	Classification	Date Classified
Community Rating System	No	--	--
Building Code Effectiveness Grading Schedule	Yes	Unknown	--
Public Protection/ISO	Yes	Unknown	--
StormReady	Yes	Gold (Countywide)	2014
Tree City USA	Yes	VOB	--

Jurisdiction-Specific Natural Hazard Event

The information provided below was solicited from the jurisdiction and supported by NOAA and other relevant data sources.

The *Natural Hazard Events Table* lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: 0
- Number of FEMA-Identified Severe Repetitive Loss Properties: 0
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties That Have Been Mitigated: N/A

TABLE: NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster Number (if applicable)	Date	Preliminary Damage Assessment
Flash Flood	-	8/4/2014	150,000 property damage.
Flood	DR-4116	4/26/2013	Flooding to town.
Snow Storm	-	2/01/2011	Deep amounts of snow.
Flood	DR-1800	9/13/2008	Flooding to town.

Jurisdiction-Specific Hazards and Impacts

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

Flood: In 2014, due to flash/urban flooding interstate 290 was closed between Harlem Avenue and Mannheim Road with portions of the interstate covered with up to four feet of water. Multiple cars were stranded in the water before it closed. A portion of the far-right eastbound lane buckled from the high water.

Hazard Risk Ranking

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

TABLE: HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Weather	54
2	Severe Winter Weather	54
3	Flood	36
4	Tornado	30
5	Earthquake	12
6	Drought	3
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 B7.1 —Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.						
Ongoing	All	7, 13	Village of Berkeley	High	FEMA Hazard Mitigation Grants	Long-term (depending on funding)
Action B7.2 —Continue to support the countywide actions identified in this plan.						
Ongoing	All	All	Village of Berkeley	Low	General Fund	Short- and long-term
Action B7.3 —Actively participate in the plan maintenance strategy identified in this plan.						
Ongoing	All	3, 4, 6	DHSEM, Village of Berkeley	Low	General fund	Short-term
Action B7.4 —Consider participation in incentive-based programs such as, Tree City, and StormReady.						

Ongoing	All	3, 4, 5, 6, 7, 9, 10, 11, 13	Village of Berkeley	Low	General fund	Long-term
Action B7.5 —Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.						
Ongoing	Flooding	4, 6, 9	Village of Berkeley	Low	General Fund	Short-term and ongoing
Action B7.6 —Where feasible, implement a program to record high water marks following high-water events.						
Ongoing	Flooding, Severe Weather	3, 6, 9	Village of Berkeley	Medium	General Fund, FEMA Grant Funds (Public Assistance)	Long-term
Action B7.7 —Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.						
Ongoing	All	3, 4, 6, 10, 13	Civil Tech	Low	General Fund	Short-term
Action B7.8 —Meeting with MWRD regarding preventative measures regarding flooding during severe weather periods.						
Ongoing	Flood, Severe Weather	1, 2, 7, 8, 9, 10	MWRD, Village of Berkeley	High	MWRD-Phase II, FEMA grants, Bonds	Long-term
Action B7.9 —Improvement to Emergency warning sirens by adding more to system so they can be heard in the entire Village.						
Completed	All Hazard	2, 5	Village of Berkeley	Low	General Fund	Completed
Action B7.10 —Provide residents with sand bags and plastic for purposes of flooding mitigation measures during severe weather.						
Removed	Flood, Severe Weather	4, 5, 10	Village of Berkeley	Low	General Fund	Removed
Action B7.11 —Continue to participate in mutual aid agreements and agreements with adjoining jurisdictions for cooperative response to all hazards and disasters.						

Ongoing	All Hazards	2, 4	Village of Berkeley	Low	General Fund	Short-term and Ongoing
Action B7.12 — Utilize footage from newly installed camera to identify and fix storm and sanitary sewers that have blockage(s) or breach(es).						
New	Flood	6, 9	Village of Berkeley	\$50,000; Low	Local Funds	2019
Action B7.13 — McDermott Drive/Morris Avenue Storm Sewer Improvements						
Completed	Flood	2, 9	MWRD	\$6,338,595; High	MWRD, Remainder Unknown	Completed
(a) Ongoing indicates continuation of an action that is already in place. Short-term indicates implementation within five years. Long-term indicates implementation after five years.						

TABLE: MITIGATION STRATEGY PRIORITY SCHEDULE

Action Number	Number of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Priority (a)
1	2	High	High	Yes	Yes	No	Medium
2	13	Medium	Low	Yes	No	Yes	High
3	3	Medium	Low	Yes	Yes	Yes	High
4	9	Medium	Low	Yes	No	Yes	Medium
5	3	Medium	Low	Yes	No	Yes	High
6	3	Medium	Medium	Yes	Yes	No	Medium
7	5	Medium	Low	Yes	No	Yes	High
8	6	High	High	Yes	Yes	No	Medium
9	2	High	Low	Yes	Yes	Yes	High
10	3	Medium	Low	Yes	Yes	Yes	Medium
11	2	High	Low	Yes	No	Yes	High
12	2	Medium	Low	Yes	No	Yes	High
13	2	Unknown	High	Unknown	Unknown	Unknown	Unknown

(a) See Chapter 1 for explanation of priorities.

New Mitigation Actions

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

Action B-7.12

Mitigation Action	Utilize footage from newly installed camera to identify and fix storm and sanitary sewers that have blockage(s) or breach(es).
Year Initiated	2019
Applicable Jurisdiction	Village of Berkeley
Lead Agency/Organization	Village of Berkeley
Supporting Agencies/Organizations	Village of Berkeley
Applicable Goal	<ul style="list-style-type: none"> • Develop and implement sustainable, cost-effective, and environmentally sound risk-reduction (mitigation) projects. • Develop, promote, and integrate mitigation action plans. • Promote public understanding of and support for hazard mitigation.
Applicable Objective	<ul style="list-style-type: none"> • Use the best available data, science and technologies to educate the public and to improve understanding of the location and potential impacts of natural hazards, the vulnerability of building types and community development patterns, and the measures needed to protect life safety. • Provide or improve flood protection on a watershed basis with flood control structures and drainage maintenance plans.
Potential Funding Source	Local
Estimated Cost	\$50,000
Benefits (loss avoided)	Will identify sewers that need repair or remediation
Projected Completion Date	2019
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)	Low - The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.
Actual Completion Date	2019

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Camera has been purchased and televising has started

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

Ongoing Mitigation Actions

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

Action B-7.1

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.1	Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.	
Status Description: No	Unchanged	X
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action B-7.2

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.2	Continue to support the countywide actions identified in this plan.	
Status Description: Yes	We continue with our support for county-wide action.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action B-7.3

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.3	Actively participate in the plan maintenance strategy identified in this plan.	
Status Description: Yes	We participate when possible or funds can be allocated.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action B-7.4

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.4	Consider participation in incentive-based programs such as, Tree City, and StormReady.	
Status Description: No	We still consider this.	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action B-7.5

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.5	Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.	
Status Description: Yes	We do all possible to address our flooding issues	O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

Action B-7.6

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.6	Where feasible, implement a program to record high water marks following high-water events.	
Status Description: Yes		O
Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken		

Action B-7.7

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.7	Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.	
Status Description: No	On going with new uses or redevelopment	O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action B-7.8

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.8	Meeting with MWRD regarding preventive measures regarding flooding during severe weather periods	
Status Description: Yes		O
<p align="center">Completion status legend: N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken</p>		

Action B-7.11

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.11	Continue to participate in mutual aid agreements and agreements with adjoining jurisdictions for cooperative response to all hazards and disasters	
Status Description: Yes	Will continue and enter into any new agreements as required	O
<p align="center">Completion status legend:</p> <p align="center"> N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken </p>		

Completed Mitigation Actions

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

Action B-7.9

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# B-7.9	Improvement to Emergency warning sirens by adding more to system so they can be heard in the entire Village	
Status Description: Yes		C
<p style="text-align: center;">Completion status legend:</p> <p style="text-align: center;"> N = New O = Action Ongoing toward Completion C = Project Completed R = Want Removed from Annex X = No Action Taken </p>		

Action B-7.13

Mitigation Action	McDermott Drive/Morris Avenue Storm Sewer Improvements
Year Initiated	
Applicable Jurisdiction	Village of Berkeley
Lead Agency/Organization	MWRD
Supporting Agencies/Organizations	Village of Berkeley
Applicable Goal	<ul style="list-style-type: none"> • 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 and potential damage from such activities. • Involve stakeholders to enhance the local capacity to mitigate, prepare for, and respond to the impacts of natural hazards. • Develop, promote, and integrate mitigation action plans.
Applicable Objective	<ul style="list-style-type: none"> • Increase the resilience of (or protect and maintain) infrastructure and critical facilities. • Provide or improve flood protection on a watershed basis with flood control structures and drainage maintenance plans.
Potential Funding Source	MWRD and Unknown for the Remainder
Estimated Cost	\$6,338,595; MWRD Contribution: \$949,829
Benefits (loss avoided)	Unknown
Projected Completion Date	Unknown
Priority and Level of Importance (Low, Medium, High)	Unknown
Benefit Analysis (Low, Medium, High)	Unknown
Cost Analysis (Low, Medium, High)	High
Actual Completion Date	5/10/18

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	ID: Berkeley 4 Contract: 16-IGA-04 Watershed: Lower Des Plaines

	Location: Berkeley, IL Constructed two new storm sewers along McDermott Drive and Morris Avenue, expanded the existing detention basin, and constructed a stormwater pumping facility at the southwest corner of the existing detention basin to adequately convey a 100-year storm event.
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Mitigation Action and Project Maintenance		
Year	Status	Comments
2019		
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

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

BERKELEY EXISTING CONDITIONS	
2010 Population	5,209
Total Assessed Value of Structures and Contents	\$965,147,922
Area in 100-Year Floodplain	0.00 acres
Area in 500-Year Floodplain	0.00 acres
Number of Critical Facilities	31

HAZARD EXPOSURE IN BERKELEY						
	Number Exposed		Value Exposed to Hazard		Total	% of Total Assessed Value Exposed
	Population	Buildings	Structure	Contents		
Dam Failure						
Buffalo Creek	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #2	0	0	\$0	\$0	\$0	0.00%
Touhy	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #3	0	0	\$0	\$0	\$0	0.00%
U. Salt Cr. #4	0	0	\$0	\$0	\$0	0.00%
Flood						
100-Year	0	0	\$0	\$0	\$0	0.0%

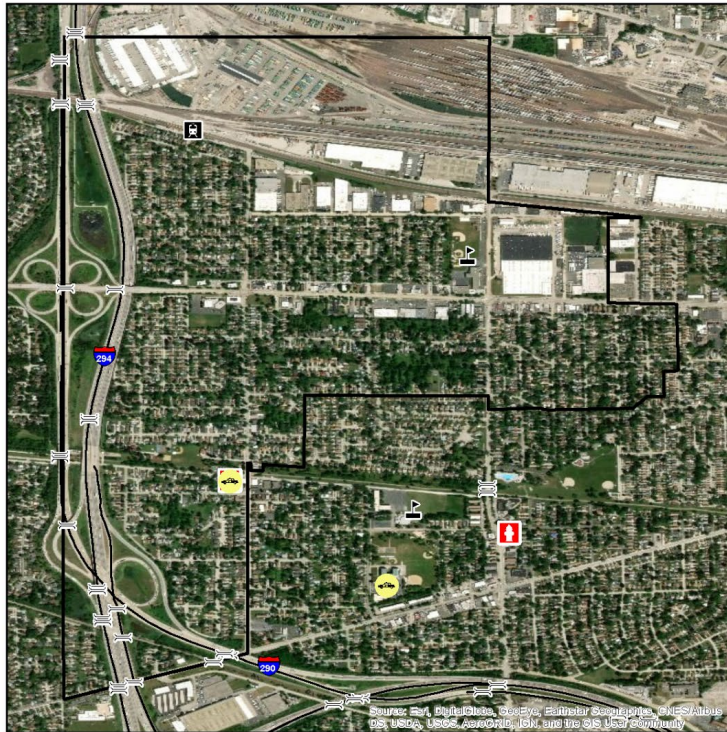
500-Year	0	0	\$0	\$0	\$0	0.0%
Tornado						
100-Year	—	—	\$100,523,509	\$63,164,774	\$163,688,283	16.96%
500-Year	—	—	\$423,684,625	\$287,431,101	\$711,115,726	73.68%

ESTIMATED PROPERTY DAMAGE VALUES IN BERKELEY

	Estimated Damage Associated with Hazard			% of Total Assessed Value Damaged
	Building	Contents	Total	
Dam Failure				
Buffalo Creek	\$0	\$0	\$0	0.00%
U. Salt Cr. #2	\$0	\$0	\$0	0.00%
Touhy	\$0	\$0	\$0	0.00%
U. Salt Cr. #3	\$0	\$0	\$0	0.00%
U. Salt Cr. #4	\$0	\$0	\$0	0.00%
Earthquake				
1909 Historical Event	\$0	\$1,827,209	\$8,421,748	0.87%
Flood				
10-Year	\$0	\$0	\$0	0.00%
100-Year	\$0	\$0	\$0	0.00%
500-Year	\$0	\$0	\$0	0.00%

Tornado				
100-Year	\$10,052,351	\$6,316.477	\$16,368,828	1.70%
500-Year	\$61,857,955	\$41,964,941	\$103,822,896	10.76%

Hazard Mapping



VILLAGE OF BERKELEY

CRITICAL INFRASTRUCTURE

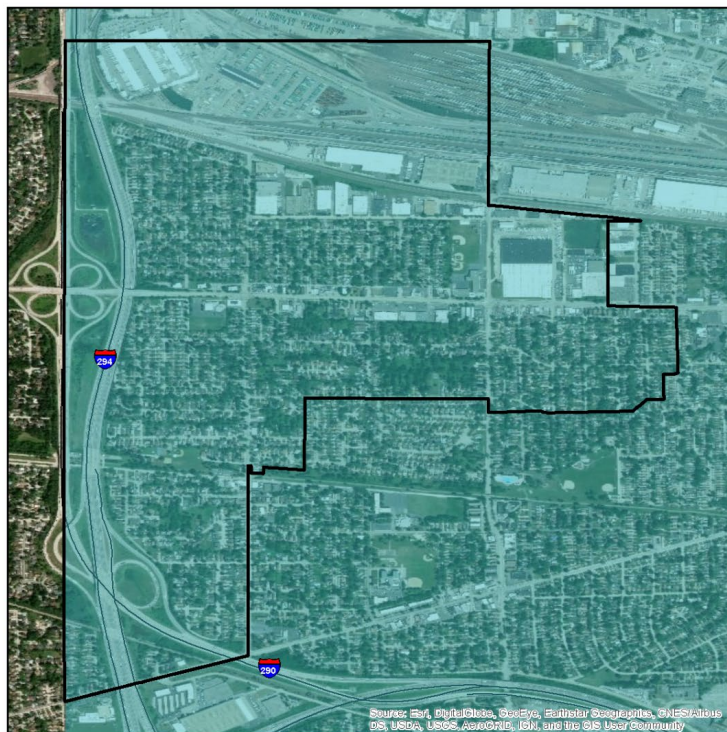
- Oil Facilities
- Transit Centers
- Military Facilities
- Police Stations
- Fire Stations
- Hazardous Waste
- Airports
- Hospitals
- Highway Bridges
- Warming Centers
- Cooling Centers
- Schools
- Railroad Stations

Base Map Data Sources:
Cook County, ESRI



0 0.05 0.1 0.2 0.3 0.4 Miles

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



VILLAGE OF BERKELEY

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.

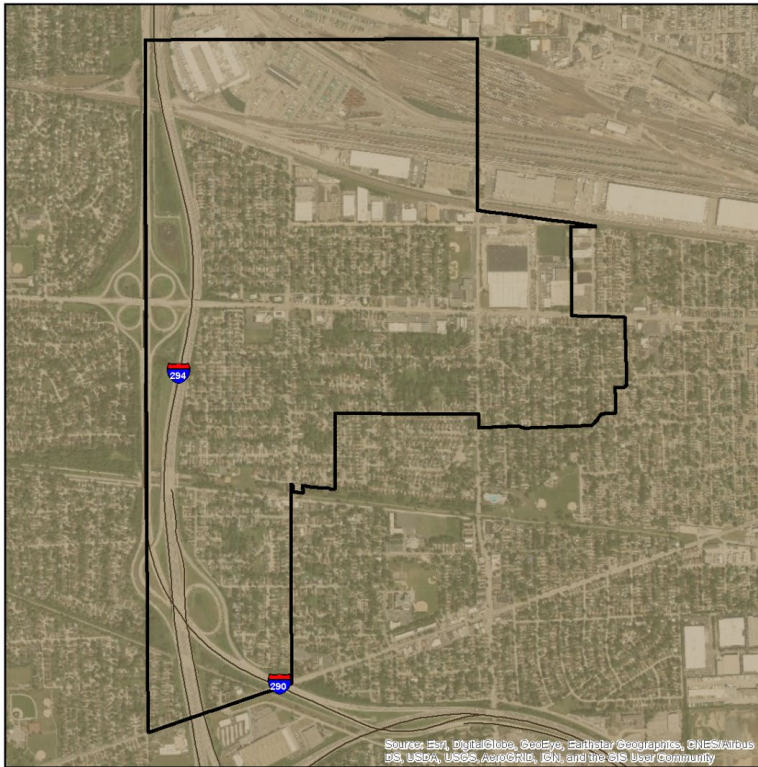
Probabilistic seismic-hazard maps were prepared for the conterminous United States for 2014 portraying peak horizontal acceleration and horizontal spectral response acceleration for 0.2 and 1.0-second periods with probabilities of exceedance of 10 percent in 50 years and 2 percent in 50 years. All of 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 150 m/s in the top 30 meters corresponding to the boundary between NEHRP (National Earthquake Hazards Reduction Program) site classes B and C.

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0 0.05 0.1 0.2 0.3 0.4 Miles

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



VILLAGE OF BERKELEY

NATIONAL EARTHQUAKE HAZARD REDUCTION PROGRAM (NEHRP) SOIL CLASSIFICATION

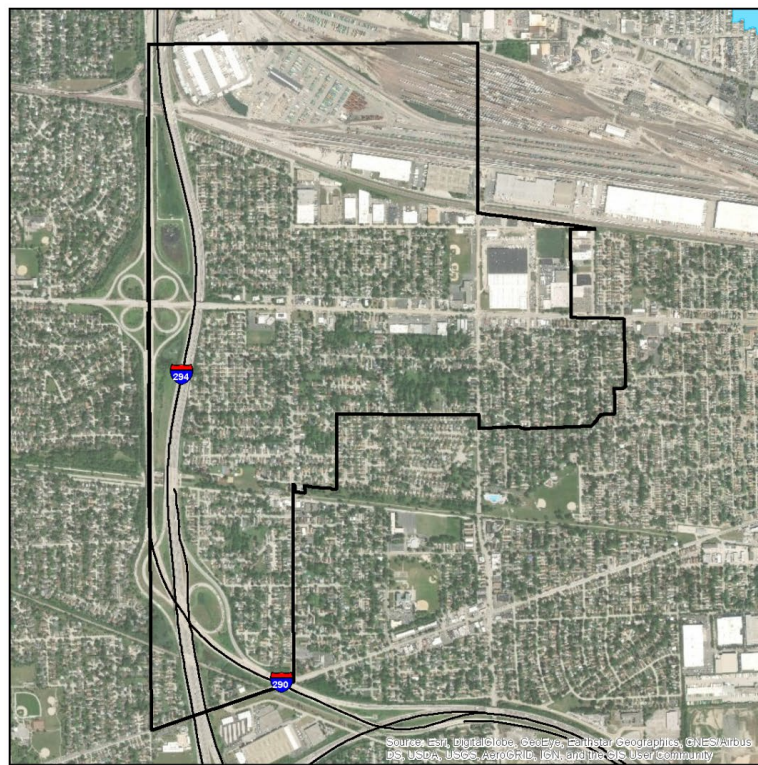
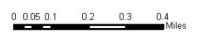
TYPE

- 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 I work. The USGS Geologic Investigation Series I-2789 Map of Surficial Deposits and Materials in the Eastern and Central United States (East of 112 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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VILLAGE OF BERKELEY

COOK COUNTY MWRDGC 100-YEAR INUNDATION AREA

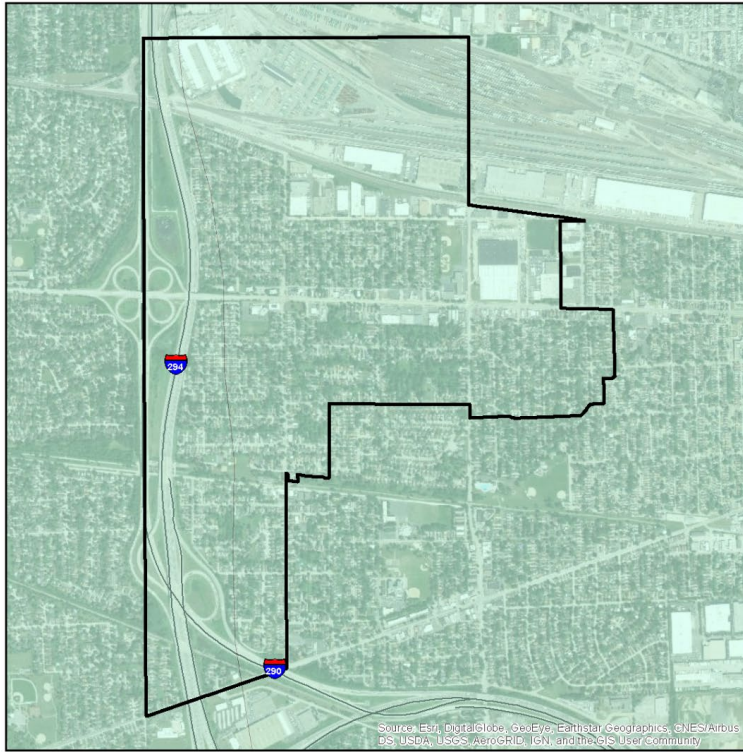
- 100-year Inundation Area

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 BERKELEY

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 1-2789 Map of Surficial Deposits and Materials in the Eastern and Central United States (East of 102 degrees West Longitude) by David S. Fullerton, Charles A. Bush and Jean H. Pennel (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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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User community



VILLAGE OF BERKELEY

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