

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

Lyons Annex

FINAL

July 2019

Prepared for:



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

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Hazard Mitigation Point of Contact

Primary Point of Contact	Alternate Point of Contact
Gordon J. Nord Jr., Fire Chief 4043 Joliet Avenue Lyons, IL 60534 Telephone: 708-447-6655 Email Address: gnord@villageoflyons-il.net	Ryan Grace, Director of Public Works 4200 S Lawndale Lyons, IL 60534 Telephone: 708-442-4415 Email Address: rgrace@villageoflyons-il.net

Jurisdiction Profile

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

- **Date of Incorporation:** 1888
- **Current Population:** 10,469 as of 2018 U.S. Census population estimate.
- **Population Growth:** From 1990 to 2010, the Village of Lyons experienced population increases by almost 10 percent, in recent years, from 2010 to 2016, the population has decreased by around 1 percent.
- **Location and Description:** The Village of Lyons is located in Cook County. Three major arterial roads (Harlem Avenue (Rt. 43), 1st Avenue (Rt. 171), and Ogden Avenue (Rt. 34)) run through the Village as well as historic Route 66 (Joliet Avenue). Utilizing these three major arterial roads, businesses can easily access Interstates 55 or 290/88. In addition, the Village is a 10-minute drive from Midway Airport and a 30-minute drive from O’Hare Airport. The Village is also close to rail facilities in the cities of Chicago and Cicero. The village is also located approximately 12 miles southwest of the Chicago loop. The Village of Lyons has a total land area of 2.18 square miles.
- **Brief History:** Incorporated in 1888, Lyons is steeped in earlier historical roots. In 1673 French Explorer Louis Joliet and Jesuit missionary Father Pierre Marquette left Green Bay, Wisconsin, by canoe in search of a western passage to the Pacific. As they traveled into the Spanish controlled area of Louisiana, they realized that the mighty Mississippi River drained into the already well known Gulf of Mexico. With winter approaching, they headed north as quickly as possible. To save time, the Potawatomi Indians who were with them encouraged changing their route to the Illinois River. The short cut led to the Des Plaines River and caused the French travelers to discover “Le Portage.” This half-mile-wide area of land connecting the Chicago River and the Des Plaines River, over which they could carry their canoes and supplies, was to become the discovery for which they would both become famous. Later known as the Chicago Portage, this small area became the “Gateway to the West” and was used by thousands of early settlers and traders traveling both east and west. The discovery of “Le Portage” was part of the impetus that led to Chicago becoming a center for the world trade. Hofmann Tower is one of the most impressive historical sites in the suburban area. This eight-story castle-like concrete structure was built in 1908 by George Hofmann, Jr. The tower was the centerpiece of a large recreational area.
- **Climate:** The climate of the Village of Lyons and the Chicago area is classified as humid continental, with all four seasons distinctly represented: wet springs; hot and 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. Winter proves quite variable. Seasonal snowfall in the city has ranged from 9 – 90 inches. The daily average temperature in January at Midway Airport is 24.8 °F (–4.0 °C), and temperatures often stay below freezing for several consecutive days or even weeks in January and February. Temperatures drop to or below 0 °F (–18 °C) on 5.5 nights annually at Midway and 8.2 nights at O’Hare. Spring in the Chicago area is perhaps the city’s wettest and unpredictable season. Winter-like conditions can persist well into April and even occasionally into May. Thunderstorms

are especially prevalent in the springtime as the city's lakeside location makes it a center of conflicts between large volumes of warmer and colder air, triggering many kinds of severe weather. Temperatures vary tremendously in the springtime; March is the month with the greatest span between the record highs and lows. On a typical summer day, humidity is usually moderately high and temperatures ordinarily reach anywhere between 78 and 92 °F (26 and 33 °C). The extreme heat that the Chicago area is capable of experiencing during the height of the summer season can persist into the autumn season. Temperatures have reached 100 degrees high and subzero lows below -18 °C. Fall can bring heavy thunderstorms, many of which are capable of producing flooding. The average first accumulating snow occurs around Nov 19.

- **Governing Body Format:** The Village of Lyons is governed by a Village President and six members Board of Trustees, all of whom are elected for four-year staggered terms. The Board is the legislative body of the Village government. This body of government will assume the responsibility and adoption for this plan. All administrative work is performed under the direction of the Village Manager, who is appointed by the Village President and Board of Trustees. The village operates 6 departments including: Village Administration, Building and Planning, Police Department, Fire Department, Public Works, and the Parks and Recreation Department.
- **Development Trends:** The Village of Lyons is embarking on an interactive, community-based process to develop a new comprehensive plan. The comprehensive plan will provide a framework to make informed investment decisions, address current community issues, and realize the community's long-term goals. Together, the Village of Lyons, community stakeholders, and the Chicago Metropolitan Agency for Planning (CMAP) will explore opportunities in land-use planning, residential and commercial development, transportation, parks and open space, and numerous other aspects important to the Village's prosperity. Lyons also provides direct fire protection services to Riverside Lawn (unincorporated), as well as direct Fire/EMS services to support extensive Cook County forest preserve areas.

Capability Assessment

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

TABLE: LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	Yes	In accordance with Public Act 096-0704, Illinois has adopted the IBC as its state Building Code Adopted: 2009
Zonings	Yes	No	No	Yes	Title 13 Lyons Zoning Ordinance. Adopted: 2009
Subdivisions	No	No	No	No	
Stormwater Management	Yes	No	Yes	Yes	Title 14-2 Stormwater Detention. Adopted: 2009
Post Disaster Recovery	Yes	No	No	No	2-3-9 Local Code 2009
Real Estate Disclosure	Yes	No	Yes	Yes	12-1-4 Real Estate Inspections 2009
Growth Management	No	No	No	No	Working with CMAP
Site Plan Review	No	No	No	No	
Public Health and Safety	No	No	Yes	Yes	Cook County Board of Health.

Environmental Protection	No	No	No	No	
Planning Documents					
General or Comprehensive Plan	No	No	No	No	Working With CMAP
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>					Not Yet
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	No	No	Yes	No	Regional stormwater impacts are managed by MWRD. The Village lies within the Des Plaines River/Salt Creek watershed planning area of MWRD's comprehensive Stormwater Master Planning Program.
Capital Improvement Plan	No	No	No	No	Working With CMAP
<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	No	No	Yes	Yes	Work In Progress
Threat and Hazard Identification and Risk Assessment	Yes	No	Yes	No	Police identified soft targets Fire identified hazardous locations
Terrorism Plan	No	No	Yes	Yes	Cook County DHSEM
Post-Disaster Recovery Plan	No	No	No	No	
Continuity of Operations Plan	Yes	No	Yes	No	Cook County DHSEM
Public Health Plans	No	No	Yes	No	Cook County DPH

TABLE: FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State Sponsored Grant Programs	No

Development Impact Fees for Homebuyers or Developers	Yes
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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	Building Department – Director
Engineers or professionals trained in building or infrastructure construction practices	Yes	Novotny & Associates – Village Engineer
Planners or engineers with an understanding of natural hazards	Yes	Novotny & Associates – Village Engineer
Staff with training in benefit/cost analysis	No	
Surveyors	Yes	Novotny & Associates – Village Engineer
Personnel skilled or trained in GIS applications	Yes	Novotny & Associates – Village Engineer
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Fire Department – Fire Chief
Grant writers	No	

TABLE: NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your jurisdiction?	Building Department
Who is your jurisdiction’s floodplain administrator? (department/position)	Building Department – Director
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	6-17-08
When was the most recent Community Assistance Visit or Community Assistance Contact?	Have not received 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?	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	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	Unknown	Unknown
Public Protection/ISO	Yes	ISO 4	Unknown
StormReady	Yes	Gold (Countywide)	2014
Tree City USA	No	N/A	N/A

Jurisdiction-Specific Natural Hazard Event

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

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

- Number of FEMA-Identified Repetitive Loss Properties: 12
- Number of FEMA-Identified Severe Repetitive Loss Properties: 1
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties That Have Been Mitigated: 0

TABLE: NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Flood <i>Southview and Circle Dr./Residential (Des Plaines River)</i>	-	2019	-
Severe Snow/Temps	-	12/2013 - 3/2014	-
Severe Storm/Wind	-	11/2013	-
Severe Storm/Wind	-	6/2013	-
Severe Heat	-	6/2013	-
Severe Flooding	DR-4116	4/2013	-
Severe Storm/Wind	-	6/2011	-
Severe Snow	DR-1960	1/2011 - 3/2011	-
Severe Flooding	DR-1935	8/2010	-
Severe Weather/Wind	-	6/2010	-
Severe Flooding	DR-1800	9/2008	-

Jurisdiction-Specific Hazards and Impacts

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

Severe Weather: In 2016, a strong area of low pressure moved across the Western Great Lakes on March 16th producing wind gusts between 50 and 60 mph. Numerous trees and tree limbs were blown down. A tree was uprooted and fell onto a home in Lyons.

Severe Winter Weather: In 2011, A 58-year-old man from Lyons died of a heart attack late in the evening of February 1st while shoveling snow during a blizzard.

Levy Failure: A failure in the Lyons Levee could flood the area.

Tornado and High Winds: Above ground power lines are impacted during these events which lead to power outages. The elderly community ([12.2% of the population is 65 or older](#)) is especially vulnerable during extended outages.

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	45
4	Tornado	39
5	Earthquake	32
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 L7.1 — Maintain the municipality’s tornado warning system and enhance system capabilities.						
Completed	Tornado	1, 5, 12	Fire, Police	Medium	General Revenue, Grants	Completed
Action L7.2 — Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage. Consider properties with exposure to repetitive losses as a priority.						
Ongoing	All	7, 13	Building Department	High	FEMA Hazard Mitigation Grants	Long-term (depending on funding)
Action L7.3 — Perform a survey of the village to determine building stock inventory. Knowing where unreinforced masonry buildings are would provide valuable information to first responders if an earthquake was to occur.						
Ongoing	Earthquake	2, 6, 7	Building Department	Low	General Revenue, Grants	Short-term

Action L7.4 —Enhance capabilities of the Village’s emergency operations center. This will include dedicated room, furniture, equipment, operating supplies, and software.						
Ongoing	All	1, 5	Fire, Police	High	General Revenue, Emergency Operation Center Grants	Short-term
Action L7.5 —Participate and become a national weather service storm ready community.						
Ongoing	Flood, Severe weather	3, 4, 5, 6, 7, 9, 10, 11, 13	Fire	Low	General Revenue	Long-term
Action L7.6 —Maintain and upgrade the Village’s reverse 911 communication system.						
Completed	All	1, 5	Police	Medium	General revenue, Grants	Completed
Action L7.7 —Clear Village storm drains for effective stormwater management.						
Ongoing	Floods / Severe Weather	1, 2	Public Works Contractor	Low	General Revenue	On-going
Action L7.8 —Improve and repair Village infrastructure to improve resilience to natural disasters.						
Ongoing	All	1, 2, 7	Public Works	High	General Revenue, Grants	Long-term
Action L7.9 —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	Building Department	Low	General Fund	Short-term and ongoing
Action L7.10 —Where feasible, implement a program to record high water marks following high-water events						
Ongoing	Flooding, Severe Weather	3, 6, 9	Village of Lyons	Medium	General Fund; FEMA Grant Funds (Public Assistance)	Long-term
Action L7.11 —Consider the development and implementation of a Capital Improvements Program (CIP) to increase the Village’s regulatory, financial and technical capability to implement mitigation actions.						

Ongoing	All	1, 2, 7	Village of Lyons	High	CIP component of general fund (if implemented)	Long-term
Action L7.12 —Continue to support the countywide actions identified in this plan.						
Ongoing	All	All	Village of Lyons	Low	General Fund	Short- and long-term
Action L7.13 —Actively participate in the plan maintenance strategy identified in this plan.						
Ongoing	All	3, 4, 6	DHSEM, Village of Lyons	Low	Revenue, Grants	Short-term
Action L7.14 —Flood Mitigation for repeatedly flooded areas.						
New	Flood	1, 2, 3, 4, 12, 13	Lyons FD	TBD	No local funds are available	TBD
Action L7.15 —Support flood mitigation through generator installation to enhance Lyons DPW operations						
New	Flood, Widespread Power Outage	1, 2, 3, 4, 12, 13	Lyons	High	TBD	Est 12/18 months from funding for mitigation/3 months for generation
Action L7.16 —Enhance flooding reduction through property buy-outs						
New	Flood	1, 2, 7, 12, 13	Lyons FD	High	Salt Creek/Circle Drive Local funds not available	option 1: pump option 2. buy out / time unknown house 12 months
Action L7.17 —Conduct a Stormwater Assessment Study						
New	Flood	3, 4, 12	Lyons DPW	\$200,000; High	Local funds not available	3-6 months
Action L7.18 —Implement Lyons Levee Flood Control Improvements						
New	Dam/Levee Failure, Flood	1, 2, 3, 7, 9, 13	MWRD	\$7,285,000	MWRD	TBD
(a) See Chapter 1 for explanation of mitigation types.						

TABLE: MITIGATION STRATEGY PRIORITY SCHEDULE

Action 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	High	Medium	Yes	Yes	No	Medium
2	2	High	High	Yes	Yes	No	Medium
3	3	Medium	Low	Yes	Yes	Yes	High
4	2	High	High	Yes	Yes	No	Medium
5	9	Medium	Low	Yes	No	Yes	High
6	2	High	Medium	Yes	Yes	Yes	High
7	2	Medium	Low	Yes	No	Yes	High
8	2	High	High	Yes	Yes	No	Medium
9	3	Medium	Low	Yes	No	Yes	High
10	3	Medium	Medium	Yes	Yes	No	Medium
11	3	High	High	Yes	No	No	Medium
12	13	Medium	Low	Yes	No	Yes	High
13	3	Low	Low	Yes	Yes	Yes	High
14	6	High	TBD	Unknown	Yes	Unknown	High
15	6	High	High	Yes	Yes	Uknown	High
16	5	High	High	Yes	Yes	No	High
17	3	High	High	Yes	Yes	No	High
18	6	High	High	Yes	Yes	Yes	High

(a) See Chapter 1 for explanation of priorities.

New Mitigation Actions

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

Action L-7.14

Mitigation Action	Flood Mitigation for repeatedly flooded areas.
Year Initiated	2019
Applicable Jurisdiction	Lyons
Lead Agency/Organization	Lyons FD
Supporting Agencies/Organizations	Lyons DPW
Applicable Goal	<ul style="list-style-type: none"> • 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. • 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. • Promote public understanding of and support for hazard mitigation.
Applicable Objective	<ul style="list-style-type: none"> • Eliminate or minimize disruption of local government operations caused by natural hazards through all phases of emergency management. • Increase the resilience of (or protect and maintain) infrastructure and critical facilities. • Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. • Integrate hazard mitigation policies into land use plans in the planning area. • Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. • Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	No Locals funds are available

Estimated Cost	Unknown will check for additional info
Benefits (loss avoided)	This area floods repeatedly over the past few years
Projected Completion Date	TBD
Priority and Level of Importance (Low, Medium, High)	High
Benefit Analysis (Low, Medium, High)	High
Cost Analysis (Low, Medium, High)	TBD
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

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

Action L-7.15

Mitigation Action	Support flood mitigation through generator installation to enhance Lyons DPW operations
Year Initiated	2019
Applicable Jurisdiction	Lyons
Lead Agency/Organization	Lyons
Supporting Agencies/Organizations	TBD
Applicable Goal	<ul style="list-style-type: none"> • 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. • 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. • Promote public understanding of and support for hazard mitigation.
Applicable Objective	<ul style="list-style-type: none"> • Eliminate or minimize disruption of local government operations caused by natural hazards through all phases of emergency management. • Increase the resilience of (or protect and maintain) infrastructure and critical facilities. • Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. • Integrate hazard mitigation policies into land use plans in the planning area. • Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. • Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.

Potential Funding Source	TBD
Estimated Cost	TBD
Benefits (loss avoided)	Lyons DPW is directly impacted by this and impacts service delivery, and life safety/loss of power has resulted at DPW during flooding
Projected Completion Date	est 12/18 months from funding for mitigation / 3 months for generation
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High—Project will provide an immediate reduction of risk exposure for life and 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:	39th street at Stanley 1. Emergency Generator to support Lyons DPW operations during severe weather and flooding (note these are highest risks) 2. FD and other Lyons resources are drained and reduce critical service delivery during flooding 3. The residential area is impacted by accessing and living with homes.

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
X	Widespread Power Outage
	Coastal Erosion
	Secondary Impacts from Mass Influx of Evacuees
	Hazardous Materials Incident

Action L-7.16

Mitigation Action	Enhance flooding reduction through property buy-outs
Year Initiated	2019
Applicable Jurisdiction	Lyons
Lead Agency/Organization	Lyons FD
Supporting Agencies/Organizations	Lyons DPW
Applicable Goal	<ul style="list-style-type: none"> • 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. • 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. • Promote public understanding of and support for hazard mitigation.
Applicable Objective	<ul style="list-style-type: none"> • Eliminate or minimize disruption of local government operations caused by natural hazards through all phases of emergency management. • Increase the resilience of (or protect and maintain) infrastructure and critical facilities • Retrofit, purchase, or relocate structures in high hazard areas, including those known to be repetitively damaged. • Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area. • Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	Salt Creek/Circle Drive Local funds not available
Estimated Cost	Pending

Benefits (loss avoided)	Residential Area / citizens unable to access or remain during flooding/ FD relocates residents via boats
Projected Completion Date	option 1: pump option 2. buy out / time unknown house 12 months
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High—Project will provide an immediate reduction of risk exposure for life and 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:	Option 1: area has flooded repeatedly and suggest a pump house be constructed to deflect waters to safe areas Currently FD deploys men and uses portable pumps during lesser rainfalls to maintain integrity Option 2: suggest property buy out/this is supported by Lyons elected officials

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

Action L-7.17

Mitigation Action	Conduct a Stormwater Assessment Study
Year Initiated	2019
Applicable Jurisdiction	Lyons
Lead Agency/Organization	Lyons DPW
Supporting Agencies/Organizations	Lyons FD
Applicable Goal	<ul style="list-style-type: none"> • 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. • 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. • Promote public understanding of and support for hazard mitigation.
Applicable Objective	<ul style="list-style-type: none"> • Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. • Integrate hazard mitigation policies into land use plans in the planning area. • Reduce natural hazard-related risks and vulnerability to potentially isolated populations within the planning area.
Potential Funding Source	Local funds not available
Estimated Cost	\$200,000
Benefits (loss avoided)	During significant rainfalls and documented flooding direct impacts to our storm water drains / Study is required to determine capacity and cause of excessive sediment
Projected Completion Date	3-6 months
Priority and Level of Importance (Low, Medium, High)	High Priority
Benefit Analysis (Low, Medium, High)	High—Project will provide an immediate reduction of risk exposure for life and 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:	Hire an engineering firm to conduct a study of the storm water system to determine both capacity and impacts of normal weather issues/goal is to develop a strategy to mitigate actions draining required resources.

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
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Action L-7.18

Mitigation Action	Implement Lyons Levee Flood Control Improvements
Year Initiated	2019
Applicable Jurisdiction	Village of Lyons
Lead Agency/Organization	MWRD
Supporting Agencies/Organizations	Village of Lyons
Applicable Goal	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Eliminate or minimize disruption of local government operations caused by natural hazards through all phases of emergency management. • Increase the resilience of (or protect and maintain) infrastructure and critical facilities. • Consider the impacts of natural hazards on future land uses in the planning area, including possible impacts from climate change. • 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. • Encourage hazard mitigation measures that result in the least adverse effect on the natural environment and that use natural processes.
Potential Funding Source	MWRD
Estimated Cost	\$7,285,000; MWRD Contribution: \$2,550,000
Benefits (loss avoided)	
Projected Completion Date	TBD
Priority and Level of Importance (Low, Medium, High)	High
Benefit Analysis (Low, Medium, High)	High
Cost Analysis (Low, Medium, High)	High
Actual Completion Date	

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	ID: DPR-14D Contract: 13-199-3F, Watershed: Lower Des Plaines Location: Lyons, IL Restoration and improvement of the levee to a condition that will elevate the levee to modern design standards, provide flood protection, and prevent overtopping by events up to a 100-year design flood.

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

Mitigated Hazards	
	All Hazards
X	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 L-7.2

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.2	Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage. Consider properties with exposure to repetitive losses as a priority.	
Status Description: No		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>		

Action L-7.3

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.3	Perform a survey of the village to determine building stock inventory. Knowing where unreinforced masonry buildings are would provide valuable information to first responders if an earthquake was to occur.	
Status Description: No		X
<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>		

Action L-7.4

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.4	Enhance capabilities of the village’s emergency operations center. This will include dedicated room, furniture, equipment, operating supplies and software.	
Status Description: Yes	FD moved to oak lawn dispatch and PD moved to Cook County Dispatch	O
<p style="text-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 L-7.5

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.5	Participate and become a national weather service storm ready community.	
Status Description: No		X
<p style="text-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 L-7.7

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.7	Clear Village storm drains for effective storm water management.	
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 L-7.8

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.8	Improve and repair Village infrastructure to improve resilience to natural disasters.	
Status Description: NO		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 L-7.9

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.9	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: No		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 L-7.10

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.10	Where feasible, implement a program to record high water marks following high-water events.	
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 L-7.11

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.11	Consider the development and implementation of a Capital Improvements Program (CIP) to increase the Village’s regulatory, financial and technical capability to implement mitigation actions.	
Status Description:		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 L-7.12

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.12	Continue to support the countywide actions identified in this plan.	
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 L-7.13

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.13	Actively participate in the plan maintenance strategy identified in this plan.	
Status Description: No		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 L-7.1

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.1	Maintain the municipality’s tornado warning system and enhance system capabilities.	
Status Description: Yes	village has installed second warning siren at village hall in addition to the one at the fire station. sirens wired to be activated from PD, FD and oak lawn central dispatch center.	C
<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 L-7.6

TABLE: ACTION PLAN MATRIX		
Action Number Action Taken Y/N	Action Item Description	Status (X, O, C, R, N)
# L-7.6	Maintain and upgrade the Village’s reverse 911 communication system.	
Status Description: Yes	village police department dispatch moved to cook county dispatch, all equipment updated there	C
<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>		

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

LYONS EXISTING CONDITIONS	
2010 Population	10,729
Total Assessed Value of Structures and Contents	\$3,056,473,402
Area in 100-Year Floodplain	133.92 acres
Area in 500-Year Floodplain	141.40 acres
Number of Critical Facilities	36

HAZARD EXPOSURE IN LYONS						
	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	124	38	\$20,171,625	\$16,615,078	\$36,786,703	1.20%

500-Year	156	48	\$22,560,217	\$17,809,375	\$40,369,592	1.32%
Tornado						
100-Year	—	—	\$575,118,797	\$499,283,183	\$1,074,401,980	35.15%
500-Year	—	—	\$1,060,088,924 \$	\$779,102,391	\$1,839,191,314	60.17%

ESTIMATED PROPERTY DAMAGE VALUES IN LYONS				
	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	\$18,844,745	\$5,655,202	\$24,499,946	0.80%
Flood				
10-Year	\$232,530	\$90,352	\$322,882	0.01%
100-Year	\$834,425	\$334,406	\$1,168,832	0.04%
500-Year	\$1,115,313	\$529,540	\$1,644,853	0.05%

Tornado				
100-Year	\$57,511,880	\$49,928,318	\$107,440,198	3.52%
500-Year	\$154,772,983	\$113,748,949	\$268,521,932	8.79%

Hazard Mapping





