

# Community Risk Assessment

## City of Ottawa

Risk Assessment								
Communities	Tornadoes	Floods	Winter Storms	Extreme Temps.	Dangerous Winds	Lightning	Drought	Hail
LaSalle County	Medium	Medium	High	Medium	High	Low	Medium	Medium
Ottawa	Low	Low	High	Medium	High	Low	Medium	Medium

**Location:** The City of Ottawa is centrally located in LaSalle County at the confluence of the Illinois and Fox Rivers. The city is the county seat.

**Population:** 18,840 (2020 Census)

### Major Storm Events since February 2008:

- September 9-18, 2008 Flood: Heavy rain associated with Hurricane Ike and Tropical Storm Gustav impacted much of the region and caused record flooding along the Illinois River. The flood stage for the Illinois River in Ottawa is 463 feet above sea level. The river crested at 472.4 feet. Ottawa’s Central Intermediate School was inundated with flood water, ultimately, resulting in the school being designated as substantially damaged and unusable. Classes at Ottawa Township High School were canceled because the river was close to breaching the top of the levy. The levy surrounding the city’s waste water treatment plant (WWTP) was within inches of being breached. Along the Fox River, homes located in the “Flats,” (south of Superior Street and east of Calumet Street) flooded. The parking lot of the Ottawa YMCA (southwest of the Flats) was also flooded.
- April 18-19, 2013 Flood: A slow-moving storm dropped upwards of 10 inches of rain across the region causing flooding along the Illinois and Fox Rivers that surpassed 2008 records. The Illinois River crested 1.4 feet higher than in 2008 at 473.8 feet. However, because of the city’s flood mitigation efforts, damage was less severe than from the 2008 storm; Ottawa Township High School was closed as a precaution; the waste water treatment plant was sandbagged, but water did not enter the facility; and only a couple of homes remaining in the Flats flooded- others had been purchased by the city as part of a buyout program. The Ottawa YMCA had substantial flooding on the lower level of the building. The city’s lift station in the parking lot was submerged and damaged. It has since been protected with a flood wall.



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The East Main Street Bridge was closed because of high flood waters. When the Illinois and Fox Rivers flood, Green Street becomes impassable and the east side of Ottawa becomes an island. Residents on the east side were encouraged to evacuate, but not forced to. Fire and police services were stationed on the east side.

- February 28, 2017 an EF-1 / EF-2 tornado struck the City of Ottawa. The tornado caused extensive damage to residential homes and structures, civic buildings, private property, trees, and businesses. Hundreds of homes were destroyed or damaged from the strength of the tornado and thousands of trees were damaged.
- May 18-20, 2020 Flood. A training line of thunderstorms passed through northern Illinois dropping 3-5+ inches of rain over most of northeastern Illinois May 14-15, 2020. Including the majority of all areas located in the Fox, Kankakee, and Des Plains Watershed(s). This was on top of already saturated ground and higher than normal river levels in the region. This brought the Illinois River to its second highest recorded level since gauge installation in Ottawa (472.59). Some residential and commercial structures in Ottawa were flooded, resulting in substantial damage for a couple of structures. A barge broke free from a docking facility upstream of Ottawa on the Illinois River and got stuck under the Illinois Route 23/71 Veteran's bridge that crosses the Illinois River. A number of streets and roadways had to be closed due to the water elevation. The East Main Street Bridge was closed again to local traffic because of high flood waters. When the Illinois and Fox Rivers flood, Green Street becomes impassable, and the east side of Ottawa becomes an island. Residents on the east side were not evacuated but placed on alert of potential evacuation if elevations were projected to increase. Fire and police services were stationed on the east side as a precautionary measure.
- August 10, 2020. A derecho caused vast wind damage across much of the City. Very strong thunderstorms, accompanied by very strong winds and an EF-1 tornado in the City resulted in damages city wide. This same storm caused severe damage across much of the Midwest and is referred to in a NOAA story map published August 6, 2021 as the "*Costliest severe thunderstorm event in United States History*"  
<https://storymaps.arcgis.com/stories/f98352e2153b4865b99ba53b86021b65> .

**Tornado Risk:** The City of Ottawa has a "Low" risk of tornadoes. There have been 60 reported tornadoes and funnel clouds in LaSalle County in the past 50 years. The city has tornado sirens (3 new ones installed 2017/2018 and 4 more to be installed in 2020) that provide full coverage throughout the corporate boundaries. Since 2008, the city purchased and installed an additional siren. The city does not have any designated tornado shelters. On February 28, 2017 an EF-1 / EF-2 tornado struck the City. The tornado caused extensive damage to residential homes and structures, civic buildings, private property, trees, and businesses. Hundreds of homes were destroyed or damaged from the strength of the tornado and thousands of trees were damaged. On August 10, 2020 an EF-1 tornado impacted the City as part of the midwest derecho occurring that day.

**Flood Risk:** The City of Ottawa has a "Low" risk of flooding based on the risk analysis. Seven (7) floods have been reported since 1964 to NOAA. Zero (0) to 10 occurrences in the last 50 years is considered a "low" probability of future disasters. When combined with other factors including vulnerability, severity, and population, the city is close to having a "Medium" risk.

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Record floods have occurred in 1974, 1982, 1983, 1996, 2007, 2008, 2009, 2013, and 2020. The flood of 2013 crested 1.5 feet above any recorded event. The 1974, 1983, 1996, 2007, 2008, and 2013 floods all resulted in Federal Disaster Declarations. The City continues to experience flooding on an annual basis. The following shows the 20 highest floods recorded at the USGS river gauge in Ottawa.

(1) 473.72 ft on 04/19/2013	(11) 467.80 ft on 12/12/2005
(2) 472.59 ft on 05/19/2020	(12) 467.60 ft on 01/09/2008
(3) 472.21 ft on 09/16/2008	(13) 466.46 ft on 05/02/2017
(4) 471.49 ft on 02/22/2018	(14) 465.00 ft on 02/17/2008
(5) 470.83 ft on 05/02/2019	(15) 464.33 ft on 03/31/2017
(6) 470.23 ft on 03/11/2009	(16) 464.29 ft on 06/24/2010
(7) 468.87 ft on 12/29/2008	(17) 464.10 ft on 07/23/2017
(8) 468.06 ft on 12/30/2015	(18) 463.80 ft on 03/01/2007
(9) 468.00 ft on 05/13/2002	(19) 463.65 ft on 10/16/2017
(10) 467.86 ft on 06/17/2015	(20) 463.50 ft on 02/10/2008

[https://water.weather.gov/ahps2/crests.php?wfo=lot&gage=otwi2&crest\\_type=historic](https://water.weather.gov/ahps2/crests.php?wfo=lot&gage=otwi2&crest_type=historic)

Following the removal and protection of most structures susceptible to flooding in the city including the “flats area”, the City of Ottawa’s flood focus has changed from responding to flooded structures in the floodplain to concentrating more on urban flooding issues, discouraging development in flood prone areas, and updating codes and plans. Historic floods within the City of Ottawa resulted in major property damage with people displaced from their homes. Over the last 30 years nearly 100 structures have been removed from these flood prone areas. Historically the flooding events that caused significant damage in the city were from riverine flooding and occurred in the special flood hazard area. These types of floods are still the types of floods that occur most frequently, but the impact caused by them is far less. Increased flash flooding is becoming more common. However, improved design and updating of storm drains have helped with flash flooding events, and because there is less structural damage to homes, the city is able to focus more on flash flooding issues. The flood threat response plan also has assisted in response to these events. From the historic record of flooding events in Ottawa, 6 of the highest crests have occurred in the past 10 years. In recent years, floods are occurring more frequently and river levels during these events seem to be increasing at a faster rate.

**Type(s) of Flooding:** Riverine Flooding- Overbank Flooding- Flash Floods- Levee Failure- Ice Jam Flooding/ Basement Backups (as defined in Chapter 2).

### Primary Sources of Flooding in Ottawa:

The City of Ottawa has two (2) primary sources of flooding: the Illinois River and the Fox River. The Illinois and Fox Rivers create a watershed for more than 11,000 square miles. The Illinois River threatens properties on the east side of Ottawa that are located south of Main Street. When both rivers rise, Green Street becomes impassable, and the east side of the city becomes an island. Ottawa’s Downtown Waterfront is also at risk of flooding. Central School, which formerly sat on the property, has been demolished and there are plans to develop the site into a park. Across the Illinois River, Allen Park and the waste water treatment plant are at risk of flooding. With the

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waste water treatment plant being of less threat now that a levee surrounds the facility. The Flats area (now Fox River Park) floods, but all residential structures have been purchased and removed. Superior Street becomes impassable. Ice jams on the Fox River may increase the likelihood of localized flash flooding.

Another source of flash flooding is Goose Creek, which originates near Fox Hill Lane, east of Illinois Route 23. The creek then heads south along Prairie Street and cuts eastward through a residential neighborhood before reaching the Fox River. The Goose Creek watershed is significantly smaller, only 6.58 square miles, and does not pose a serious flood risk.

There were 567 reported basement backups in the City of Ottawa as a result of the April 2013 flood (see the attached Damage Report Map). The city has only partially separated storm and sanitary sewer systems, which theoretically should reduce the number of basements backups. Homeowners of century-old homes that have never flooded reported basement backups in 2013. Ottawa has combined sewers covering about one-third of the town. The remaining majority of the city has separate storm and sanitary sewers. The status of combined or not, did not seem to affect the likelihood of backups. The city is investigating the cause to determine a solution. Funding for sewer/repair separation is needed to address basement issues/flooding. Water backing up in basements is causing the most damage to homes during flooding and rain events within the City today. The City has implemented a costshare program to help with cost to elevate plumbing systems in their homes. The City also continues to separate sewer and storm infrastructure in older parts of town.

Flash flooding also occurs in areas throughout the City after intense rainfalls. Typically, in areas where storm drainage is not adequate.

The City has conducted extensive field observation and completed numerous studies in recent years to develop a number of tools to assist with flood mitigation and resiliency. This includes detailed survey elevations on all structures that are located within the SFHA. This study was completed in cooperation with the Illinois Department of Natural Resources and is called the SAFR (Structures At Flood Risk). Warning times are also improving as the City and the National Weather Service improve prediction modeling for flood heights and timing. This allows for watches and warnings to be delivered more quickly and accurately. The City also has a very detailed Flood Threat Recognition Plan with a warning system that is activated during all flood activities. This involves the City EMS and public works departments very early with all flood events. This system is updated after nearly every flood to improve its effectiveness. The City also has a flood inundation tool that was developed by the State and federal government. This tool is located on the National Weather Service website and is also linked to City websites. Dissemination of information, whether it be watches or warnings, or educational and outreach material is becoming easier to reach target audiences at a quicker rate with social media outlets.

### **Summary of Flood Risk and Areas Likely to Flood within the City of Ottawa:**

**Riverine/overbank Flooding:** High probability of occurrence during a calendar year. When Riverine/overbank flooding occurs, depending on the level of the flood, roads and bridges can be impacted and closed (Champlain Street, Green Street, East Main Street Bridge). Some structures

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that still remain in the SFHA could be damaged and owners could be displaced (approximately 27 structures along East Main Street, Illinois Avenue, Guion Street). Warning times for these occurrences can be disseminated typically 12-24 hours in advance. Duration and extent of impact depends on height of flood event. Two (2) to 5 days is a reasonable time frame of impact based on historic events.

All properties located within the Special Flood Hazard Area (SFHA) as identified on FEMA Flood Insurance Rate Maps (FIRMs) are at risk of flooding. With these areas more at risk to Riverine Flooding, Overbank Flooding, Levee Failure and Ice Jam Flooding.

All repetitive loss properties are located within the Special Flood Hazard Area and these areas are mapped. The City has a progressive outreach campaign to try to help mitigate the flood losses within these areas. The City has detailed historic records of flooding and damages that have been caused to these structures. The City has also implemented a substantial damage clause in their flood ordinance that requires mitigation of any structure located in the special flood hazard area that reach 50% damage. The City's substantial damage clause is based on the life of the structure. On an annual basis, the City reviews all properties that have received flood insurance claims in the repetitive loss areas. These properties are also evaluated after any flooding event or other natural hazard.

**Flash Flooding:** High probability of occurrence during a calendar year. Flash flooding seems to be occurring more frequently with more frequent and intense rain events. Flash flooding in Ottawa typically has minor impacts on roadways, public property, and in low lying properties. City public works officials verified that there are only a handful of areas on public property that are routinely susceptible to flash flooding problems due to poor infrastructure (poor design, topography, etc). Known areas where this has historically occurred are (Stevenson Road, Catlin and Caton Street, Mason Street, Arch Street/White Lane, Magnolia Street, West Marquette Street). Most areas that are impacted can be attributed to storm drain blockage/maintenance or undersized storm drains. City crews are on call during intense weather events to correct manage issues. Flash flooding on private property is also typically attributed to location, drainage, and grading. Warning systems for flash flooding is typically 6 hours prior to forecasted event. Duration of flash flooding impact is 6 to 12 hours.

These areas in the Community that are susceptible to flooding, outside of the special flood hazard, and they are typically a result of flash flooding conditions caused by inadequate infrastructure, storm drain blockage, soil conditions, grading, and topography.

**Levee Failure:** Levee failure is unlikely to occur. There are two flood walls within the City limits. One protects the Ottawa Township High School property and a portion of a residential area on the East Side of Ottawa. The other wall protects the City's wastewater treatment facility. These walls/levees are routinely inspected. If failure occurs with either of these structures, it would be significant monetary damage, potential environmental impact, but should not pose a danger to life. Warning of impact 6-12 hours. Duration would be dependent on extent of failure.

**Ice Jam Flooding:** Ice Jam Flooding occurs when river ices and unfrozen/melt water moves around ice that has formed a dam or when ice dams break up during thawing periods. Likely

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possible of occurring within a year. Impact is minor and only effects properties adjacent to river. City and County EMS monitor ice dams at the local level routinely during the cold months and when there are fast warming trends or irregular storm events forecasted in the area. Ice dam flooding is unique and can be unpredictable. Warning systems can be activated within 6 to 12 hours.

**Basement backup flooding:** Basement backup flooding is likely to occur. Structures that are susceptible to basement flooding are typically in older parts of town, where infrastructure is combined and/piping infrastructure is inadequate (East Side and West Side). Newer subdivisions have also been subject to backups, most notably Countryside Subdivision in recent years, these instances are typically attributed to large intense rain events and compromised drainage maintenance. This has been historically limited to certain neighborhoods and areas of town. Impact is minor and damage is typically limited to contents, clean up, and loss of use. Warning systems 6-12 hours.

With climate change and the anticipation of increased flood heights within the special flood hazard areas, the City's adopted higher regulatory standards may be adequate today; however, discussion on increasing these regulatory standards should always be discussed and planned for. As storms continue to increase in intensity and frequency what is good today most likely won't be good in the future. It is important that the building and floodplain division have this conversation with developers and property owners to recommend building as high as possible when in close proximity to areas that are not only subject to flooding today, but also in those areas that could be subject to flooding in the future.

Riverine flooding in Ottawa is also influenced by all of the major watersheds that come out of the Chicagoland Metropolitan area. This area will continue to grow and impervious surfaces will continue to disappear. Many communities upstream may not have floodplain regulations or stormwater management ordinance in place or may not enforce their rules, which will ultimately increase the volume and rate of water that passes through the Fox and Illinois River in Ottawa.

**Life, Safety, health, procedures for warning and evacuation:** The City of Ottawa has developed a Flood Threat Recognition plan that is activated anytime a large storm event is forecasted in the northern portion of Illinois, as flooding within the City of Ottawa is influenced by a number of watersheds (Fox River, Des Plains River, Illinois River, Kankakee River). The Flood Threat Recognition Plan drives how the City plans and reacts to potential rising waters, with a step by step process of what is done when and by who when rising waters reach certain elevations within the City. Flooding can cause roads, bridges, sidewalks, and parks to be closed. The public works, police and fire departments play different roles to protect citizens and property from the flood threat. Closing roads, placing barricades, roping off sidewalks, staging EMS crews, shutting valves, etc.... Response times for EMS can be increased during flood events and it is very important to make sure that closed/compromised routes are accounted for and dispatching is aware. The City does a lot to protect the public; however, the public also needs to be aware of the threat and be prepared for their circumstance. People should not drive through flooded areas and streets that have been closed. This can not only jeopardize their well being, but it can also put EMS responders at risk. Homes that have a history of flooding should be prepared for the flood and

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know what to do before, during, and after the flood. Steps in the City's Program for Public Information provides information to help educate and provide information on the flood hazard.

The City of Ottawa has been through a number of devastating floods over the years. This has helped the city develop and prepare a number of action plans and strategies for responding to such events. With the ultimate goal of the City to protect people and property. The following and its attachment shall serve as a brief synopsis of how the City of Ottawa prepares and responds to a flooding event.

Today, the City of Ottawa relies heavily on meteorological and gauge forecasts to determine the potential severity of a flood. Because of improvements with this technology, the City is able to provide warnings, messages, and prepare before the flooding begins. With the City's detailed flood threat recognition plan, along with inundation mapping technology, and a long history of flooding, the City is able to plan and implement necessary safeguards prior to the expected crests. When it begins to rain or is forecasted to rain for long periods of time locally, or in the watersheds that effect flooding in the area, staff will routinely check river levels and crest predictions, and begin preparing. Our flood threat recognition plan provides for the "who, what, when, and where" for each flood event and at what level strategies need to be implemented. The City also provides links to the tools that we use on our websites, social media accounts, and in routine mailings to residents and the community to help generate awareness and potential of impact.

Depending on the severity of the flood/predicted flood determines the number of departments that get involved (i.e. Public Works, Police/Fire Department, Community Development, Mayor's Office, State and Federal Agencies). Sending out messages to residents via Nixel, Facebook, and other media sources prior a flood event has become a standard procedure that is built into the City's Flood Preparation and response. A tremendous amount of coordination is done during any flooding event among departments. With accurate predictions we are able to advise of which roads/parks will be closed and at what time. We are able to manage infrastructure to help prevent back up issues in homes and utilities. We can provide a timeframe to property owner's that have property prone to flooding. Depending on the forecasted flood, meetings are also held with City departments to strategize and plan. Meetings with departments after major events are also held to discuss what worked and what didn't work. Our Natural Hazards Mitigation Plan, Ottawa Emergency Response Plan, and Disaster Response Plan also can come into play depending on the severity of the flood.

After a flood public works departments are responsible for clearing roadways, parks, drainage paths/inlets and making sure they are safe to reopen. They also report to the City Engineer and City Floodplain Manager of any issues. Utility companies verify that utilities have not been compromised or are dangerous after the flood. If structures are inundated during a flood the floodplain manager and staff tour affected areas, conduct door to door damage assessments, and disseminate "After the Flood" packets to residents. Follow up correspondence is also sent by mail to property owners regarding building/floodplain permit requirements, damage assessment reports, and any other applicable information required to assist the public with recovery. As mentioned earlier, post flood meetings with necessary departments are held if needed to discuss changes that need to be made to our response plans. After the flood reports are prepared and provided to the City Council and the Flood Management Committee. Necessary changes and updates are made to the respective plan and implemented in the next event. The City has also implemented an annual requirement to review their Flood Response Preparation process with the Flood Commission as part of their Program for Public Information.

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## FLOOD THREAT RECOGNITION SYSTEM-Details

**LEADS: Law Enforcement Agency Data System:** A nationwide system utilized by all Law Enforcement Agency's to receive and transmit data. The City of Ottawa's Emergency 911 Communications Center receives emergency weather notification calls from the Emergency Weather Service across the LEADS. This system is used to make emergency weather notification calls. This system operates at all times and provides, storm, flooding and other weather-related data and alerts.

**EmNet: Emergency Management Network:** This is a primary internet/satellite backup-based system. The EmNet server is constantly transmitting data stream that is derived from computers located at the National Oceanic and Atmospheric Administration (NOAA) Port facility. This data stream includes all warnings and alerts issued by the National Weather Service (NWS) for stations within the US. This is an audio alarm program. When an alert is broadcast the alarm notifies on duty dispatchers. The system is monitored at all times by the LaSalle County Emergency Management Agency.

**NOAA: National Oceanic & Atmospheric Administration:** The Emergency 911 Communications Center monitors the NOAA system at all times. A NOAA Weather Alert Radio, monitored 24/7, relays weather alerts to the dispatchers. Dispatchers can check local forecasts, radar, storm watches and warnings, weather graphs and real time weather reports. When emergency notification from either EmNet or LEADS is transmitted, dispatch uses this network for further details.

**National Weather Service web page:** The National Weather Service hosts a website with Advanced Hydrologic Prediction Service. This site is also monitored at the Emergency 911 Communications Center as well as Community Development Department, Wastewater Treatment plant and by city personal responsible for floodplain management. This site gives advance warning of flood threats on the Illinois River, with approximately 48 hours lead time. In March 2016, the National Weather Service with the Illinois State Water Survey activated flood inundation mapping for the City of Ottawa. These maps depict flood levels 4 feet in excess of any flood on record. Additionally, these maps have depth grids for all flooded areas.

**U.S. Geological Survey web page:** The City of Ottawa's floodplain management team subscribes to a real time National Water Information System. This site provides valuable information related to water discharge rates immediately upstream of the City limits. When a flood watch or warning is issued this site is used primarily for real time data. Prediction of flooding on the Fox River in Ottawa, from the Fox Lake Pool is generally 24 to 48 in advance. In March of 2016 the Illinois State Water Survey with the National Weather Service and The National Oceanic and Atmospheric Administration added Inundation Maps for the City of Ottawa with depth grids.

## StormReady Certified Community

Since 2007 the City of Ottawa has been recognized as a StormReady community by the National Weather Service. StormReady communities take steps to help prepare and reduce their communities vulnerability to extreme weather and water events. These communities utilize the StormReady program to help save lives and property in their communities—before, during and after such events. These communities do this through detailed planning, education, and awareness initiatives.



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## EMERGENCY WARNING DISSEMINATION

**Emergency 911 Communications Center:** The Emergency 911 Communications Center, also known as a Public Safety Answering Point (PSAP) is a facility equipped and staffed to receive emergency and non-emergency calls requesting police, fire, EMS and other public safety services via telephone and other communications devices. The Ottawa Police Department’s Emergency Communications Center is a “primary” PSAP, which means emergency calls are answered here first and triaged. The Center is staffed and operating 24 hours a day 7 days a week. The PSAP is also the point from which all calls are dispatched. The Ottawa Police 911 Communications Center employees (also known as Telecommunicators) are first level public safety communications professionals who essentially serve as first responders to every class of emergency for which public safety services are provided. The Telecommunicators primary responsibility is to receive, process, transmit and/or dispatch emergency and non-emergency calls for police, fire, EMS and other public safety services via telephone or other communications devices.

**The Community Emergency Notification System (Nixle)** is a web-based emergency notification system that will assist public safety officials in making emergency notifications in a timely manner. The system allows the originator to initiate a voice message broadcast to residents or businesses by their predetermined group or geographic location. This system is used to notify residents in the floodplain and critical facilities in the community of impending flood events. The City has been using this system for a number of years. Residents are able to sign up and get instant notifications on their phones of warnings, watches, or any other message that the City needs to send out instantly.

**Cable TV & Radio Emergency Broadcasts:** A system in place at the Ottawa Police Department for notification of life threatening emergencies, catastrophic flooding or other community disasters. The Ottawa police dispatch can interrupt local radio and cable TV broadcasts with emergency information and directions.

**Ottawa Daily Times and WCMY Radio:** When a flood emergency exists, the City Engineer or Building Official notifies the news center with the appropriate warning. This can be done via telephone, the web or text from a cell phone. The news center then publishes the warning on their front page of the web-based media and broadcasts this warning via their Social Media Network to Facebook, Twitter and all email subscribers.

**Internet:** In addition to real time flood and emergency information posted to the City’s home page ([cityofottawa.org](http://cityofottawa.org)), the City has created a standalone website dedicated to flood information ([ottawafloods.org](http://ottawafloods.org)). The City also utilizes Facebook to distribute and disseminate information.

## ACTIVATION GUIDELINES

Emergency 911 Communications Center will notify the City Engineer and the Building Official upon any posted flood watch. The City Engineer and Building Official will begin to monitor the National Weather Service’s Advanced Hydrological Prediction Service for both the Illinois and Fox River. City of Ottawa Inundation mapping for the Fox and Illinois River will be used to gauge the extent of inland flooding with depth grids. The Building Official will contact the High School for live gauge reports.

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In the event the National Weather Service issues a flood warning, the City Engineer and the Building Official will be immediately notified by the Emergency 911 Communications Center. After monitoring the Advanced Hydrological Prediction and determining when the Action Plan will be implemented, the City Engineer will notify the appropriate department heads to take action.

### **River Gauges & Data Collection Points**

The river gauge is a pressure transducer with a Data Collection Platform located at a gate well in the Ottawa Township High School levee. The gage elevation was surveyed and certified by the U.S. Army Corps of Engineers. The data is linked to the Corps of Engineers Hydraulics Branch and the National Weather Service via satellite.

Ottawa High School also has a secondary gage located in the same gate well. This gage is hardwired to the school. Data is collected and stored by the Ottawa Township High School Maintenance Staff as a backup to the National Weather Service gage and is calibrated and compared to the National Weather Service gage.

Ottawa High School also has three staff gages located around the property with elevation marks established by survey. The City of Ottawa has a staff gage located on the downstream face of the north pier of Highway 23 Bridge. This gage has been established by survey and has been compared and verified to the gage at Ottawa High School by previous high-water events.

The gage at Ottawa High School is an official forecast point for the National Weather Service (Figure 2). The National Weather Service has multiple official forecast points both upstream and downstream of this gage on both the Illinois and Fox Rivers. This data is monitored at all times by the City of Ottawa's Emergency 911 Communications Center. Upstream indicators on the Illinois allows a 24-to-48-hour warning of peak flows.

Since the Corps of Engineers gauge is an official forecast point for the National Weather Service, it is continuously monitored. Maintenance is performed as required, and the Corps has dedicated staff to maintain these gages and can be dispatched in short notice to make repairs. The City of Ottawa performs witnessed monthly checks of all data collection and communications and keeps record of these on file at the dispatch center.

On the Fox River, approximately 5000 feet upstream of Ottawa's city limits is another gauge (Figure 2). This gauge is maintained by the U.S. Geological Survey, Urbana, Illinois. The upstream gauges are easily monitored from the National Weather Service website and are an excellent warning source. Additional information is available on a real time basis from the USGS web site. Predictions from the Chain of Lakes pool levels allow at least a 24-hour warning.

### **Health and Health Hazards related to Flood Conditions:**

Anytime a flood occurs water is coming from other places and that water many times has been in contact with materials and surfaces not typically exposed to water. These waters can then carry dirt, chemicals,

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fecal matter and other hazardous substances downstream. When these waters come in contact with surfaces or enter structures, they can leave these substances behind when the water recedes. Flood waters can also deliver debris from upstream locations such as logs-trees, propane tanks, garbage, boats and whatever else it picks up during the flood. These objects can be dangerous to humans and structures. Physical injury can also result from glass, sharp objects, or even animals that are brought in by flood waters.

During flooding events, where sewer lines may still be combined with stormwater lines, these pipes can reach capacity and begin backing up into streets, basements, or any other place water can find daylight. This can leave homes with conditions that can cause serious illness and structure decay if not aired out, cleaned, and sanitized properly. If structures are not dried, cleaned, and sanitized properly it can also cause mold and stagnant water that could contribute to unsafe respiratory conditions. Duct work, plumbing, and air exchanging systems also need to be cleaned or replaced, so such systems are not a direct source of poor air/water quality in a structure.

It is also very important to make sure that all electric is shut off in structures that have been impacted by a flood. Standing water or even small puddles within a structure can cause serious injury or death if electric current is present. Calling a certified electrician before entering a structure that has been impacted by a flood is always recommended.

Not just physical problems result from flood events, but flood conditions can also cause stress and mental distress for people. Stress can occur as soon as one hears the rain begin to fall knowing that the potential for a flood is possible. Or the warning from the warnings from the news, National Weather Service, or the text from the City announcing the incoming storm. Many times, people have been through floods and no what to expect and realize that all of their belongings, could be destroyed, their house may reach a substantial damage point, and they may never be able to return to their home. Flood damages also involve damages that significant amounts of money. When properties flood usually it will involve insurance companies, city involvement, government agencies, and questionable contractors. Having to deal with this can create emotional and mental distress. Sometimes people may not have flood insurance or may not have been through a flood, this too can be very traumatic.

**Critical Facilities at Risk:** The city's waste water treatment plant is at risk of flooding. In 2011, the city applied for but was not awarded state funding to build a flood protection wall around the plant. In 2017 the City completed the construction of the waste water treatment plant flood wall and back-up generator.

Ottawa Township High School (East Main Street) is surrounded by a levee, but in March 2010 the levee lost its accreditation when FEMA digitalized FIRMs and raised the base flood elevation by 1.5 feet. The high school is now at a greater risk of flooding. In 2019 the school completed construction of elevating a portion of the existing floodwall and completion of the remaining unprotected section along the Fox River. The school now has full floodwall protection along both the Illinois and Fox River frontage. The recently completed wall is still awaiting Army Corps accreditation.

The Ottawa River Rescue building located east of the Downtown Waterfront has flooded multiple times. The structure is located in the floodway. Plans and property have been finalized to move the facility to the south side of the Illinois River out of the floodplain. River Rescue broke ground on the new headquarters in early 2019 and have completed the project.

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OSF Saint Elizabeth Medical Center (Hospital) is protected by a 500-year flood wall.

A massive flood may place the Fox River Aqueduct on the Illinois and Michigan Canal at risk. The aqueduct is no longer utilized for barge traffic, but is a historic structure and supports the canal's tow path and bicycle trail. If the structure were to be washed out, it likely will impede or obstruct the flow of the Fox River and cause the hospital just upstream, to flood. A similar occurrence happened in Morris, Illinois during the 2013 flood.

### **Community Economy and Tax Base**

Ottawa is a beautiful historic city that sits at the confluence of the Illinois and Fox Rivers. One of the original Canal Towns, Ottawa was platted by James Thompson in 1829, a year before he prepared the plat for the City of Chicago. As one of the earliest examples of a platted midwest city, Ottawa showcases some of the best principles in city planning: small walkable blocks, a classic central square, a grid of connected streets, and buildings rich in architectural detail. These enduring qualities have been beautifully preserved by a caring community. Downtown Ottawa has held onto its historic heritage, and major damage from post-war suburban style development has been generally averted. Ottawa has also embraced change and adapted over time. The community has a strong collections of stores, restaurants, hotels and other businesses centered around the I-80/ Illinois Route 23 interchange. New industrial/distribution businesses like Tyson Fresh Meat, Petsmart and Kohl's have located in Ottawa to take advantage of the communities excellent location and workforce. (excerpt taken from the City of Ottawa's Comprehensive Plan Update-Cutivate Ottawa\_draft. 2022.)

While the Rivers were one of the most important drivers to settlement in and around the Ottawa area, the rivers continue to be a major stimulus for its economy. Tourism, transportation, recreation, and natural beauty are major contributors to the City's economy.

From the 2020 Census data:

- Ottawa's population 18,840 people.
- Median Household income in Ottawa is \$52,809.
- Resident's that hold a Bachelor's degree or higher is 20%.
- The median home value in the corporate limits of Ottawa is \$137,700.
- Employment rate in the City is 60.6%.
- Median age of residents within the City is 38.7 years old.

Ottawa's population has not seen a significant change over the last fifty years. In 1960 Ottawa reached its highest population of 19,408. Ottawa's population decreased between 1960 and 1990; however, it has continued to grow since 1990. Ottawa has also seen an increase in households from a total of 7,512 in 2000 to a total of 8,097 in 2020.

Major Employers:

Major Employers in the City of Ottawa:

- |                               |                |
|-------------------------------|----------------|
| 1. OSF St. Elizabeth Hospital | 1000 Employees |
| 2. LaSalle County             | 509 Employees  |
| 3. Wal-Mart Super Center      | 425 Employees  |
| 4. Petsmart Distribution      | 420 Employees  |
| 5. Ottawa Elementary School   | 332 Employees  |

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6. SABIC Innovative Plastics	285 Employees
7. Kohl's Distribution Center	270 Employees
8. Clover Technologies	258 Employees
9. Ottawa Dental Lab	250 Employees
10. MBL (USA)	236 Employees

Data gathered from the the City Economic Development Director

### Employment by Sector:

• Services	39.4%
• Retail	19.6 %
• Public Administration	16%
• Manufacturing	7.3%
• Finance, Insurance, and Real Estate	6.1 %
• Wholesale	3.8%
• Transportation, Communications, Gas, Electric and Sanitary	3.4%
• Construction	2.3%
• Other	2.1%

*Data from City of Ottawa Comprehensive Plan Experian Data.\_Draft 2022*

Other notable economic numbers for the City of Ottawa are:

- The City's credit rating is AA.
- No major employers closed as a result of the COVID pandemic.
- The City is seeing a continuous increase in sales tax dollars generated, other than the first year of COVID.

### Floodplain Functions

The natural function of a floodplain is to provide temporary storage and conveyance of flood waters in the event of a flood. Typically, these areas are low areas immediately adjacent to streams and rivers. Effective conveyance and storage of flood waters is best achieved in areas free of development and infrastructure.

Having areas where water can enter, exit, and absorb without causing damage is ideal. The Fox River Park in Ottawa, is a prime example of any area that has been converted from a once developed neighborhood with extreme flooding and loss damages, to a riverfront park that allows for flood storage in the event of a flood and a recreational asset the remainder of the time. Other examples in town are Allen Park, the Old Central School Site, and East Main Park. These are all open space parks that are located within the Special Flood Hazard Area. These parks are free of structures. The City has also recently acquired property adjacent to the East side park in Cooperation with the Conservation Foundation that will also serve as open space and there are plans to restore portions of this property to wetland areas, create walking trails, and to manage and restore the area with native flora and fauna.

### Buildings located in the Special Flood Hazard Area

Within the City of Ottawa there are 27 residential properties that are located within the special flood hazard area. Most of the residential buildings that are susceptible to flooding have walkout basements that are

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located within the hazard area. There is one residential structure within the City that is located within the floodway. There are 7 commercial/industrial/school properties that have structures located in the Special Flood Hazard Area. Of these structures the majority of them are protected from the flood hazard. The hospital is protected by a 500 year floodwall, the City's Wastewater treatment facility is protected by a floodwall that exceeds the 500 year elevation, Ottawa High School property is protected by a levee and floodwall system built to the 500 year elevation. The City is also currently building a new lift station that will remove an existing lift station that was located within the SFHA. The City no longer owns any insurable buildings that are not protected within the special flood hazard area; however, the City does carry a blanket policy that covers flood impacts on every building and City owned property located within the City limits.

### **Existing Ordinances and Activities implemented by the City:**

The City has made great strides in recent years to develop a city wide strategy to reduce impacts of flooding. A large component in this strategy is to develop plans and ordinance requirements that address areas that are prone to flooding. While the City is geographically located in a vulnerable position to land use, population trends, and ordinance adoption and enforcement in other communities located in the northeastern Illinois/Chicago land area. With climate change, historic flood events, and the City's geographic location, the City of Ottawa has made it a priority to do whatever possible locally to help alleviate the flood threat. With that comes careful planning initiatives and ordinance requirements. The following describes ordinances and plans that have been adopted by the City that address the City's management and regulatory standards that address current and future flood conditions and to ultimately reduce future flood losses. While many of the ordinances are routinely evaluated and updated. It is recommended that all of the ordinances and plans are placed on a routine schedule for evaluation and update.

**Food Ordinance-**The City has adopted a flood protection ordinance within their municipal code (Chapter 74). This current ordinance is modeled from the Illinois Department of Natural Resources-Office of Water Resources "Model Floodplain Ordinance" and has been in place since 2011. The City had a previous flood protection ordinance that was adopted in 1985. The City elected to adopt higher regulatory standards, which include a 2 foot flood protection elevation requirement, substantial damage requirement (50% life of structure); and compensatory storage requirements (1 to 1.5). This ordinance is reviewed annually. The City will continue to monitor any updates to the model ordinance, and will revise as needed. Revision of the ordinance is necessary if SFHA levels were to increase, if changes are mandated by the State or Federal government, and/or if flood threat is increased or changed. This ordinance is the most important flood loss/flood protection tool that the City has in place. The ordinance drives where and how development can occur in areas located in the special flood hazard areas. It also addresses legacy properties that have a history of flooding, with mitigation requirements if they should continue to flood. The permitting process that is required through this ordinance requires that all permits that are authorized in the City are checked for floodplain compliance.

**Building Codes/Ordinance-**The City has been progressive in keeping building codes up to date. Current codes adopted by the City include the 2018 International Codes (IBC, IRC, IEBC, FGC, IFC, IMC, IEC). The City also enforces the 2021 NEC. These codes are traditionally updated at least every 6 years (3 year International Code cycle). The City feels that this is important to keep up to date with current codes and also for BCEG and CRS requirements. Coupled with the City's Flood Ordinance these codes require adherence to current building standards. These building codes also have standards that address construction that could be susceptible to flooding or water inundation environments.

**Comprehensive Plan-**The City has had a long history of comprehensive planning. All of which have acknowledged the flooding threat and history within the City and have extensively steered development

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away from flood prone areas. Most noticeably beginning with the 2002 Plan. With the 2014 expanding on the 2002 Comprehensive plan, and it even included an entire chapter called “Flood Strategy”. This was most likely a response to a number of significant flooding events that occurred between 2002 and 2014, including the 2013 flood, which was the highest flood on record in the City of Ottawa. The plan was also published when the City began a very active flood management/mitigation strategy. The plan acknowledges the challenges that the City faces with flooding and provided a number of strategies that recognizes the importance of keeping the flood prone areas free of development and utilizing them for parks and open space, with the hopes to not only reduce/eliminate flood damage and risk but to enhance floodplain storage and natural floodplain function. This comprehensive plans also contains a very detailed park section that features areas located in the special flood hazard area. This plan won the national American Planning Associations - Illinois Chapter 2016 Daniel Burnham Award for Outstanding Comprehensive planning. Currently this plan is being updated and a new comprehensive plan should be adopted by the City Council during 2022. The new comprehensive plan also addresses the need for the city to carefully protect and plan strategically in areas prone to flooding.

The 2002 Plan recommended significant areas along the river for conservation to protect natural assets like the floodplain, tree groves, topography, etc. The 2014 plan continues this commitment to conservation, and recommends the creation of two “River Valley Conservation Districts” with clear guidelines for development. These areas include:

1. Fox River Valley Conservation District
2. Illinois River Valley Conservation District

Permitted Uses within the conservation districts are natural areas and uses that benefit from being close to the river.

**Zoning Ordinance-**The City’s zoning ordinance contains Parks and Open Space district. Much of the special flood hazard area is zoned this way. *“The "POS" park and open space district is intended to help preserve and protect lands set aside for parks, natural areas, retention ponds, detention basins and open land corridor connections. It is also to ensure permanent access to outdoor recreation and natural areas for residents in all neighborhoods and to enhance the value of nearby properties. They provide cultural and recreation opportunities; preserve natural and scenic areas; protect sensitive natural resource areas; and offer refuge from the built, urban environment...”*(Chapter 118. Zoning. City of Ottawa Municipal Code). Uses permitted in this district reflect this intent. The zoning ordinance is updated from time to time, but is evaluated minimally every two years.

**Stormwater Management Ordinance-**In 2017 the City adopted a stand alone Stormwater Ordinance as part of their municipal code. Previously it was a component of the City’s Subdivision regulations. The stormwater ordinance adopted is in line with requirements common in northeastern Illinois. It requires stormwater adherence to any new development that exceed 1 acre in size, redevelopment projects exceeding one acre where there is more than 50% disturbance, and adherence to sediment and erosion control with any project that exceeds more than 5000 square feet, to name basic applicability.

The City requires stormwater plans that:

1. Minimize impervious surfaces
2. Preserve existing natural steams and channels and drainageways,
3. Attenuate flows by use of open vegetated swales and natural depressions;
4. Preservation of natural infiltration and storage characteristics of the site
5. Provide stormwater retention structures;
6. Provide stormwater detention structures

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While the ordinances overall function is to reduce flooding and protect natural resources. The ordinance goes a step further with recognizing stormwater requirements within floodplains. It states the following:

Detention in floodplains. The placement of detention basins within the floodplain is strongly discouraged because of questions about their reliable operation during flood events. The use of fee-in-lieu of detention shall be investigated where detention outside of the floodplain is not feasible. However, the stormwater detention requirements of this chapter may be fulfilled by providing detention storage within flood fringe areas on the project site provided the following provisions are met:

- a. Detention in flood fringe areas:
  1. The placement of a detention basin in a flood fringe area shall require compensatory storage for one and one-half times the volume below the base flood elevation occupied by the detention basin including any berms.
  2. The release from the detention basin provided shall still comply with the requirements of this chapter.
  3. The applicant shall demonstrate its operation for all stream flow and floodplain backwater conditions up to the ten-year frequency flood elevation.
  4. Excavations for compensatory storage along watercourses shall be opposite or adjacent to the area occupied by detention.
  5. All floodplain storage filled below the existing ten-year frequency flood elevation shall be replaced below the proposed ten-year frequency flood elevation. All floodplain storage filled above the existing ten-year frequency flood elevation shall be replaced above the proposed ten-year frequency flood elevation. The additional storage volume (one-half times the total volume filled) may be provided at any elevation between the normal water elevation and the BFE.
  6. All compensatory storage excavations shall be constructed to drain freely and openly to the watercourse.
- b. Detention in floodways. Detention in floodways is prohibited.

Development in special flood hazard areas (SFHA). In addition to the provisions set forward in this chapter, development in special flood hazard areas shall comply with the requirements of the zoning ordinance of the City of Ottawa as well as ordinances regulating development in flood plain areas. Where these ordinances conflict or overlap, whichever imposes the more stringent restrictions shall prevail (Chapter 84. Stormwater Management Ordinance. City of Ottawa Municipal Code.).

While wetlands are addressed in other areas of the municipal code, the stormwater ordinance section clearly defines wetlands and provides requirements if they are to be impacted by development. The ordinance states the following:

*Wetlands shall be protected from damaging modifications and adverse changes in runoff quality and quantity associated with land developments. In addition to the other requirements of this chapter, the following requirements shall be met for all developments whose drainage flows into wetlands:*

*a. Existing wetlands shall not be modified for the purposes of stormwater detention unless it is demonstrated that the existing wetland is low in quality and the proposed modifications will maintain or improve its habitat and ability to perform beneficial functions.*

*b. Existing storage and release rate characteristics of wetlands and other depressional storage areas shall be maintained and the volume of detention storage provided to meet the requirements of this section shall be in addition to this existing storage.*

*c. The existing wetlands shall be protected during construction by appropriate soil erosion and sediment control measures and shall not be filled.*



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*d. Site drainage patterns shall not be altered to substantially decrease or increase the existing area tributary or flow rates to the wetland.*

*e. All runoff from the development shall be routed through a preliminary detention/sedimentation basin designed to provide a minimum 24-hour hydraulic detention time before being discharged into the wetland. This basin shall be constructed before property grading begins.*

*f. A vegetated buffer area of at least 25 feet in width, preferably vegetated with native plant species, shall be maintained or restored around the periphery of the wetland (Chapter 84. Stormwater Management Ordinance. Ottawa Municipal Code.*

Stormwater management requirements are discussed by the City with every development initially in the design review committee meetings. City Engineering requires adherence to these provisions with the assistance of the floodplain manager. The City also conducts stormwater basin inspections on an annual basis. There are approximately 100 basins that are inspected for compliance. Basins that are out of compliance are enforced with letters, citations, and abatement if necessary.

The stormwater management ordinance is reviewed and evaluated from time to time and amended as needed. Variances to the ordinance are discouraged.

**Subdivision Ordinance-**The City has adopted a subdivision ordinance within their municipal code. This section drives how development occurs within the City, which ultimately takes into account and requires adherence to other ordinances, such as the comprehensive plan, stormwater ordinance, building ordinance, and flood the city's flood regulations. The subdivision ordinance also requires that all plats contain a surveyor's certificate that no portion of the development is located within the special flood hazard area.

**Park Acquisition and Development Plan-**The City adopted this plan in 2010. This plan details and describes the current parks located within the corporate boundaries. It explains which parks are located in flood prone areas, details the frequency of flooding at these parks, historic damage in these areas, and suggests best management practices to help enhance these areas. The plan also discusses areas that the City should consider acquiring in the future. While the plan was adopted in 2010 it is still the active plan and contains valuable information. This plan should be evaluated and updated in the near future to align with the updated comprehensive plan and other recent updates to the City's municipal code. Many of the areas planned for acquisition have been obtained by the City and are now functioning as open space/park areas. Many of these lands are located in the special flood hazard area.

**Disaster/Emergency Response Plan-**The City has adopted an Emergency/Disaster Response Plan. It was most recently updated in April of 2000. This plan's intent is to help the City with all aspects of operation and response before, during, and after a disaster. The City of Ottawa has been through a number of recent natural disasters and have learned a lot in recent years. It is very specific and details protocol for disaster events. This plan outlines specifics details regarding the following: Emergency Level Status; Disaster Proclamation Procedures; Crisis Management Phone List; Activation and Implementation of Plan; Roles/Annexes (Mayor, City Council, City Engineer, Public Information Officer, Emergency Management Coordinator, Fire Department, Police Department, Finance, Public Works Director, Volunteers, Communications, Community Development Department); Damage Assessment Provisions; Shelter and Support Provisions; Contractor Equipment lists; Debris Management Plan; and the Flood Threat Action Plan. This plan was recently updated, but is in the action strategies to update within the next two years.

**Flood Threat Response Plan:** The City has adopted a flood threat response plan. This plan is updated minimally once per year and/or after every flood event. This plan is based on flood elevations within the City. It provides very detailed requirements of what has to be done during a flooding event and at what

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stage. It also is specific to who has to do what and at what time, and how long each step take during a flooding event. This is the principal documents that the City relies on during flooding events. It allows the City to plan and coordinate road closures, park closures, valve shutting, emergency notification/messaging, and other flood protection/flood fighting strategies (including sandbagging) during a flood or when a flood is predicted.

**Program for Public Information:** The City has implemented a program for public information that addresses outreach and educational information to help protect against flooding. Various outreach initiatives are conducted throughout the year as part of this plan. The City reviews and updates this document annually with the flood commission. Outreach projects include various direct mailings to property owners in the flood zone and in repetitive loss areas. Other examples include information regarding available flood information and flood services that the city can provide. These are sent to all residents within the City at least once per year. The PPI has recently been updated to include outreach that provide property owners with annual cumulative damage assessments on record. The strategy is in response to the City’s conclusion that cumulative damage assessment information is not routinely disclosed in the event of property sales.

**National Flood Insurance Program Participant:** The City of Ottawa has been a participant in the National Flood Insurance Program since 1975.

**Community Rating System Participant:** The City of Ottawa is a participant in the Community Rating System. The City currently has a class two (2) rating that entitles city residents to a 40 percent discount on flood insurance premiums.

### **Other Natural Hazard Risk:**

**Winter Storm Risk:** The City of Ottawa has a “High” risk of experiencing winter storms including blizzards, heavy snowstorms, and ice storms. Early frost and freeze events are another form of winter weather that are factored into determining the winter storm risk level. There have been 61 weather events in LaSalle County in the past 50 years.

**Extreme Temperatures Risk:** Extreme heat and cold can have detrimental effects on the human body including illness and death. Exposure to extreme heat can lead to heat rash, exhaustion, and stroke. When exposed to extremely cold temperatures, the human body loses heat quickly. Unable to replace utilized energy, the body is susceptible to hypothermia and frostbite. The City of Ottawa has a “Medium” risk for extreme temperatures.

**Dangerous Winds Risk:** This category includes thunderstorm winds, high winds, and strong winds. The City of Ottawa has a “High” risk of having dangerous winds that can lead to property damage and crop damage. During high winds, people are at a greater risk for injury and death as a result of flying debris and falling trees and power lines. LaSalle County reported 313 dangerous wind events in the past 50 years that caused approximately \$972,000 in property damage.

**Lightning Risk:** Lightning is caused by the buildup and release of atmospheric electricity. Whenever there is a thunderstorm, lightning has occurred. Lightning can strike anywhere and has the potential to cause fatalities, injury, and property damage. The City of Ottawa has a “Low” risk of lightning that could result in property damage or bodily harm.

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**Drought Risk:** Drought is caused by a lack of precipitation over an extended period of time. A prolonged drought can have a devastating impact on a region's economy and quality of life. LaSalle County's last reported drought was between June 2005 and February 2006. The impact of the drought is not known. The City of Ottawa and LaSalle County have a "Medium" risk of drought.

**Hail Risk:** Hailstones can be found within the middle and upper portions of most thunderstorms. Hailstones are compacted layers of ice and snow that look like snowballs. Hailstones may be as small as marbles or as large as softballs. Hailstones cause damage to property and crops. Between 1970-2019 there have been 145 hail events that caused property damage totaling \$1 million in LaSalle County. The City of Ottawa has a "Medium" risk of hail. There have been 17 hail events in Ottawa since 1965.

**Landslides:** Based on no previous occurrences and location, the City has no risk of landslides occurring.

**Wildfires:** Based on no previous occurrences and the ground cover the City has no risk of wildfires occurring.

### Mitigation Activities:

- 1. Mitigation Strategy:** Inform residents on the importance of obtaining flood insurance and understanding their flood insurance policy.

**Hazard Addressed:** Floods

**Responsible Entity or Person:** Building and Zoning Official/ Ottawa Flood Commission

**Benefit/Cost:** High/Low

**Priority:** High, no change since 2015 Plan

**Cost:** Letters to residents/ Website maintenance

**Revenue Source:** Local Funds

**Resources:** Insurance agencies/ Federal Emergency Management Agency

**Benefits:** Residents should be aware that their flood insurance policy may not cover basement backups. A separate sewer and drain policy may be required.

**Deadline:** 1 Year / Annual Outreach

**Mitigation Type:** Education and Awareness

**CRS Action Strategy Classification:** Property Protection Activity

**Activity Status:** Carried over into the activities list for this plan.
- 2. Mitigation Strategy:** Vertically realign Green Street to prevent the east side of Ottawa from being isolated during a flood event.

**Hazard Addressed:** Floods

**Responsible Entity or Person:** City Council

**Benefit/Cost:** High/High

**Priority:** Very High, no change since 2015 Plan

**Cost:** Design/ Engineering/ Construction

**Revenue Source:** Local Funds/ State and Federal Funding

**Resources:** Federal Emergency Management Agency/ Illinois Emergency Management Agency/ Illinois Department of Commerce and Economic Opportunity

**Benefits:** Provide emergency responders access to the east side of Ottawa at all times.

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**Deadline:** 5 Years

**Mitigation Type:** Structure and Infrastructure Projects

**CRS Action Strategy Classification:** Structural project Activity

**Activity Status:** Carried over into the activities list for this plan. The City applied for PDM funding from FEMA and have been awarded. Project is in initial implementation phase.

3. **Mitigation Strategy:** Dredge and rechannel the Fox River near the Illinois and Michigan Canal Aqueduct.

**Hazard Addressed:** Floods

**Responsible Entity or Person:** State of Illinois

**Benefit/Cost:** Medium/High

**Priority:** High, no change since 2015 Plan

**Cost:** Engineering/ Construction

**Revenue Source:** Various Sources- General Fund/ Special Appropriation/ Illinois Department of Natural Resources

**Resources:** Illinois Department of Natural Resources

**Benefits:** Lessen localized flooding.

**Deadline:** 5 Years

**Mitigation Type:** Structures and Infrastructures

**CRS Action Strategy Classification:** Structural project and natural resource protection activity

**Activity Status:** Carried over into the activities list for this plan. Army Corps of Engineers conducted a cost-benefit analysis and project does not meet funding requirements through ACOE funding. Continue to seek funding for project

4. **Mitigation Strategy:** Participate in the development of a regional stormwater management ordinance that will reduce flooding and protect lives, property, and the environment.

**Hazard Addressed:** Floods

**Responsible Entity or Person:** City Council/ City Engineer

**Benefit/Cost:** Medium/Medium

**Priority:** High, no change since 2015 Plan

**Cost:** Staff Time

**Revenue Source:** Local Funds

**Resources:** Residents/ Public Officials/ Hydrologists/ Attorneys/ Planning Officials

**Benefits:** Minimize the adverse impact of stormwater on communities.

**Deadline:** 4 Years

**Mitigation Type:** Local Plans and Regulations

**CRS Action Strategy Classification:** Preventative activity

**Activity Status:** Carried over into the activities list for this plan. Continue to check status with LaSalle County and other surrounding Counties

5. **Mitigation Strategy:** Assist the Ottawa YMCA with identifying solutions to minimize flood damage.

**Hazard Addressed:** Floods

**Responsible Entity or Person:** Ottawa YMCA/ City Engineer/ Building and Zoning Official

**Benefit/Cost:** High/High

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**Priority:** Medium, no change since 2015 Plan

**Cost:** Staff Time

**Revenue Source:** Local Funds

**Resources:** YMCA Staff/ City Engineers

**Benefits:** Provide long-term protection for an important community organization.

**Deadline:** 3 Years

**Mitigation Type:** Structure and Infrastructure Plans

**CRS Action Strategy Classification:** Property protection Activity

**Activity Status:** Carried over into the activities list for this plan. The YMCA is near ground breaking for new facility located outside of the special flood hazard area.

6. **Mitigation Strategy:** Continue with the installation of separation ejectors to limit combined sewer overflows.

**Hazard Addressed:** Floods

**Responsible Entity or Person:** City Plumbing Inspector/ Engineer

**Benefit/Cost:** High/High

**Priority:** High, no change since 2015 Plan

**Cost:** Design/ Engineering/ Construction

**Revenue Source:** Local Funds

**Resources:** City Engineer

**Benefits:** Minimize pollution of soils and waterways. Minimize damage and property loss to structures

**Deadline:** 1-5 Years

**Mitigation Type:** Structure and Infrastructure Projects

**CRS Action Strategy Classification:** Property protection Activity

**Activity Status:** Carried over into the activities list for this plan.

7. **Mitigation Strategy:** Continue to pursue activities that will maintain the city's Community Rating System score to help residents save on flood insurance premiums.

**Hazard Addressed:** Floods

**Responsible Entity or Person:** City Building and Zoning Official, City Engineer, Ottawa Flood Commission

**Benefit/Cost:** High/Medium

**Priority:** High, no change since 2015 Plan

**Cost:** Varies depending on activities/ projects

**Revenue Source:** Local Funds

**Resources:** Insurance Services Office/ Illinois Department of Natural Resources/ Illinois Emergency Management Agency

**Benefits:** Lower flood insurance premiums for residents/ Activities reduce the impact of flooding.

**Deadline:** 1-5 Years (ongoing)

**Mitigation Type:** Local Plans and Regulations

**CRS Action Strategy Classification:** Preventative and Public Information Activity

**Activity Status:** Carried over into the activities list for this plan.

8. **Mitigation Strategy:** Construct a fire station on the north side of the city.

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**Hazard Addressed:** Tornadoes, Winter Storms, Extreme Temps, Dangerous Winds, Lightning, Hail

**Responsible Entity or Person:** City Council

**Benefit/Cost:** High/High

**Priority:** High, no change since 2015 Plan

**Cost:** Design/ Engineering/ Construction/ Equipment/ Staffing

**Revenue Source:** Local Funds

**Resources:** N/A

**Benefits:** Provide increased fire protection to all businesses and residents within the City of Ottawa. Lowered insurance rates city wide.

**Deadline:** 5 Years

**Mitigation Type:** Structures and Infrastructures Project

**CRS Action Strategy Classification:** Emergency Services Activity

**Activity Status:** Carried over into the activities list for this plan.

9. **Mitigation Strategy:** Develop and implement an Emergency Operations Plan for snow removal.

**Hazard Addressed:** Winter Storms, Dangerous Winds

**Responsible Entity or Person:** City Council

**Benefit/Cost:** High/High

**Priority:** Medium, no change since 2015 Plan

**Cost:** Staff Time

**Revenue Source:** Local Funds

**Resources:** Ready.gov

**Benefits:** A plan to efficiently remove snow will ensure that emergency responders can access all parts of the city.

**Deadline:** 1 Year

**Mitigation Type:** Local Plans and Regulations

**CRS Action Strategy Classification:** Natural Resource Protection, Preventative Activity

**Activity Status:** Carried over into the activities list for this plan. Check with public works regarding implementation and need for review.

10. **Mitigation Strategy:** Engage in a regional discussion on the implementation of best practices for activating early warning sirens and other warning systems during storm events.

**Hazard Addressed:** Tornado and Dangerous Winds

**Responsible Entity or Person:** A regional group consisting of County Emergency Management Agencies for Bureau/ LaSalle/ Marshall/ Putnam/ and Stark Counties, Local Fire Departments, Fire Protection Districts, County Sheriff's Departments, Local Police Departments, and Local Officials

**Benefit/Cost:** High/Low

**Priority:** Very High, no change since 2015 Plan

**Cost:** Staff Time

**Revenue Source:** Local Funds

**Resources:** NOAA/ Illinois Emergency Management Agency/ Policies for other communities

**Benefits:** Regional guidelines on activating early warning sirens can lessen public confusion and save lives.

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**Deadline:** 1 Year

**Mitigation Type:** Local Plans and Regulations

**CRS Action Strategy Classification:** Emergency services and preventative activity

**Activity Status:** Carried over into the activities list for this plan.

- 11. Mitigation Strategy:** Work together with partners to share resources and to create opportunities for the public to be engaged and informed about the risks of natural hazards and mitigation activities.

**Hazard Addressed:** Tornadoes, Floods, Winter Storms, Extreme Temps, Dangerous Winds, Lightning, Drought, Hail

**Responsible Entity or Person:** City Council

**Benefit/Cost:** Medium/Medium

**Priority:** High, no change since 2015 Plan

**Cost:** Staff Time

**Revenue Source:** Local Funds

**Resources:** Other communities/ North Central Illinois Council of Governments, Flood Commission, Upper Illinois River Flood Alliance

**Benefits:** Collaboration provides opportunities to share ideas and resources.

**Deadline:** 1-5 Years

**Mitigation Type:** Education and Awareness

**CRS Action Strategy Classification:** Preventative and Property Protection Activity

**Activity Status:** Carried over into the activities list for this plan.

- 12. Mitigation Strategy:** Develop educational information and publicize, including preventative and preparedness safety procedures, for residents regarding all identified risks.

**Hazard Addressed:** All identified hazards

**Responsible Entity or Person:** City Staff

**Benefit/Cost:** Medium/Low

**Priority:** Low, no change, new activity for this plan.

**Cost:** Staff time

**Revenue Source:** Federal, state, local or grant funds

**Resources:** Federal Emergency Management Agency/ Illinois Emergency Management Agency

**Benefits:** Increased awareness and preparedness

**Deadline:** 2 Years

**Mitigation Type:** Education and Awareness Programs

**CRS Action Strategy Classification:** Preventative and Property protection activity

**Activity Status:** New mitigation activity for this plan in 2020.

- 13. Mitigation Strategy:** Update City's Emergency Response Plan at least every 2 years. Include pre-planning emergency facilities such as warming centers temporary shelters to the plan.

**Hazard Addressed:** Multiple (Flooding, Tornado, Extreme Temperatures, Etc.)

**Response Entity or Person:** City and County EMS

**Benefit/Cost:** High/Low

**Priority:** High, new activity for this plan

**Cost:** Staff time, Facility cost

**Revenue Source:** Local

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**Resources:** City, County, Red Cross, other  
**Benefits:** Provide sheltering list options before a disaster  
**Deadline:** 2 Years  
**Mitigation Type:** Local plans and preparedness  
**CRS Action Strategy Classification:** Emergency Services, preventative, and property protection activity  
**Activity Status:** New mitigation activity for this plan.

- 14. Mitigation Strategy:** Discourage development in the flood plain to enhance open space, natural floodplain function, decrease emergency response, and lessen property damage  
**Hazard Addressed:** Flooding  
**Response Entity or Person:** City  
**Benefit/Cost:** High/Medium  
**Priority:** High, new activity for this plan  
**Cost:** Staff time  
**Revenue Source:** Local  
**Resources:** City, IDNR, FEMA  
**Benefits:** Enhance/increase open space, natural floodplain function/habitat, decrease emergency response, lessen property damage  
**Deadline:** 2 Years (update Municipal Code and Floodplain Ordinance)  
**Mitigation Type:** Local plans and preparedness.

**CRS Action Strategy Classification:** Natural resource protection activity  
**Activity Status:** New mitigation activity for this plan.

- 15. Mitigation Strategy:** Create and Implement a City Tree Inventory and Tree Management Plan  
**Hazard Addressed:** Tornado, Thunderstorm  
**Response Entity or Person:** City of Ottawa  
**Benefit/Cost:** High/Medium  
**Priority:** High, new activity for this plan  
**Cost:** Staff time, Contractors, Equipment  
**Revenue Source:** Local, Potential grant opportunities  
**Resources:** City, IDNR, USDA-Forestry  
**Benefits:** **Lessen property damage**, Enhance tree diversity, Enhance wildlife/habitat, lessen public fear of tree damage, reduce carbon footprint, decrease damage, loss of life  
**Deadline:** Ongoing. Evaluate annually  
**Mitigation Type:** Local plans and preparedness  
**CRS Action Strategy Classification:** Natural resource protection, preventative, property protection activity  
**Activity Status:** New mitigation activity for this plan.

- 16. Mitigation Strategy:** Post event damage assessment coordination  
**Hazard Addressed:** Multiple  
**Response Entity or Person:** City  
**Benefit/Cost:** Medium/Low  
**Priority:** Medium, new activity for this plan  
**Cost:** Staff time  
**Revenue Source:** Local, State, Federal, independent humanitarian groups (i.e. Red Cross)  
**Resources:** City,



## Community Risk Assessment

**Benefits:** Reduce duplicate assessments, reduce potential of conflicting assessments, provide streamlined accurate assessments to property owners

**Deadline:** Coordinate within 1 year.

**Mitigation Type:** Local preparedness and coordination

**CRS Action Strategy Classification:** Preventative activity

**Activity Status:** New mitigation activity for this plan.

**17. Mitigation Strategy:** Create a City Urban Flood Plan

**Hazard Addressed:** Flooding

**Response Entity or Person:** City

**Benefit/Cost:** High/Medium

**Priority:** Medium, new activity for this plan

**Cost:** Staff time

**Revenue Source:** Local (potential grant funding for development of plan)

**Resources:** City, IDNR-OWR, FEMA

**Benefits:** Reduce flooding and damage to property occurring outside of floodzones, enhance habitat, improve water quality

**Deadline:** 2-5 year Plan Development.

**Mitigation Type:** Local preparedness, preventative measure

**CRS Action Strategy Classification:** Preventative and property protection activity

**Activity Status:** New mitigation activity for this plan.

### Post Mitigation Policies and Procedures

The City has worked very hard to help mitigate efforts after a disaster. Steps taken to address post mitigation include adopting a number of codes and ordinances that drive redevelopment requirements, mitigation, and the procedures following a natural disaster. The Flood Regulation Ordinance requires post disaster inspections, cumulative damage (50% life of structure) assessment/tracking, and higher regulatory standards for construction that could occur in areas susceptible to flooding. The City understands where the most vulnerable areas are and can anticipate where damage and response will be required in the event of a flooding event or other disaster. Protective measures are addressed in the Flood Response Plan to help mitigation of these areas pre disaster, during, and post disaster. Several other codes will work together following a natural disaster (building code, other State, and Federal requirements). As part of the Cities response to flood events, flood response packets are pre-made and reviewed annually, so that the most up to date information can be disseminated to property owners during the post disaster assessment. This information and these packets align with the Cities Flood Response Preparation and is part of the Cities Program for Public Information.

The City has also developed and enforces an Emergency Response/Disaster Plan that clearly establishes procedures and roles before, during, and after a natural disaster. The plan contains very specific information regarding procedures for clean-up, sheltering, damage assessments, support services, communication, contactor contact information, and many other disaster mitigation tasks relevant to the City of Ottawa. This plan is discussed on page 17 in further detail. This plan specifically assigns tasks to departments and people within the City (Mayor, City Council, City Engineer, Public Information Officer, Emergency Management Coordinator, Fire Department, Police Department, Finance, Public Works Director, Volunteers, Communications, Community Development Department).

# Community Risk Assessment

## Summary of Emergency/Response Plan

*This plan relies on the concept that the response to a disaster will be Level 1 or Level 2. All departments and resources within the City of Ottawa would be utilized during disaster operations. If these resources are inadequate, additional assistance would be requested from other municipalities and LaSalle County. If these resources are inadequate, then assistance will be requested from State and Federal entities (Level 3) to return the city to pre-disaster conditions.*

*Effective leadership, coordination, and unified on-scene command is required to effectively respond to an incident. Each department assumes the responsibility for carrying out their duties of emergency management. The overall command of all emergency operations is the responsibility of the Mayor or their designee along with the Crisis Management Team. The decision to implement the plan will be based on the probability or the actual occurrence of a disaster which threatens the public health, safety, and welfare of the populace of the City of Ottawa and which has the potential for overwhelming the cities resources.*

*The Emergency Management Coordinator makes decisions and advises the Mayor on courses of action available for major decisions. During emergency operations the Emergency Management Coordinator is responsible for overseeing the Crisis Management Team. The Coordinator also acts as the liaison with other local state and federal emergency management agencies.*

*Should the resources of the City prove insufficient in an emergency situation; the City of Ottawa Emergency Management Coordinator will contact the LaSalle County ESDA coordinator to request county resources and assistance. The City of Ottawa Emergency Management Coordinator will serve as liaison to LaSalle County in requesting disaster assistance through the IEMA Regional Coordinator, if available, or the central office in Springfield. Specific information about the impact of the disaster upon the municipality will be provided to the state by the city of Ottawa Emergency Management Coordinator through the County ESDA Coordinator. No matter how many levels of response are involved, local officials will always maintain ultimate control and responsibility.*

*The Disaster Preparedness Plan is a working document for the City of Ottawa. The City of Ottawa has adopted, by ordinance, the National Incident Management System (NIMS) as its Incident Command/Unified Command System. The City of Ottawa Disaster Plan is for use during periods of increased readiness before and response operations and during recovery operations following a disaster. As it is impossible to identify every possible twist or loophole in a complex disaster operation, this plan should be recognized as guidance and not a list of commandments for disaster operations.*

*The Disaster Preparedness plan defines the objectives of local government during a local disaster condition. Through this process of defining objectives and the functional relationship between the various departments, many of the functions of the departments in a disaster do not directly relate to the traditional roles typical during non-disaster periods. This plan also establishes the relationship between local, state, and the federal government, as well as, businesses, industry and the public throughout the disaster period.*

*Coordination of this planning process has taken into account some of the capacities of surrounding communities, county, state and federal agencies. But in worst-case scenario these resources may be unavailable to us due to the scope of the disaster. Where ever possible, we have enhanced our local capability through our resource agreements to provide at a minimum some capability as other regional resources become available; we will integrate them into our emergency management system. All phases of emergency management have been integrated into this plan; preparedness, response, mitigation and recovery activities are all present. Therefore, this document has non-emergency purposes for the community. As this plan is a living document subject to changes as this community moves forward. It is essential that the changes to the hazards, capabilities and needs of the community be in the plan. Therefore the process to develop, review, update, exercise the Plan continues uninterrupted. This Plan shall be reviewed and updated every two years.*

*It is the intention of the City of Ottawa to integrate the concept of phases of emergency management to our basic objectives. We attempt to mitigate the possibility of a disaster by remaining observant to hazards that are present in any new development or change to the community. We prepare for the disaster occurrences that are beyond our means to prevent. We provide for public warning evacuation, shelter and welfare services in a disaster. We work to speed recovery from a disaster by maintaining contact with as many government agencies, relief services and volunteer organizations that are active during a disaster. In each phase we strive to maintain an integrated response to the needs of the community. We commit all assets to disaster response as nonessential government operations stop for duration. We have the obligation to provide these services to the best of our ability.*

# Community Risk Assessment

*As many of the disasters that may strike the community have significant potentials for affecting large population numbers. An Emergency Operations Center (EOC) at the Central Police and Fire Station shall be operated by local officials, and capable of requesting support services from higher levels of government directly. With the relocation of large populations there will be a need to coordinate actions with surrounding communities and county agencies.*

*Disasters require a very rapid response to the situation as it develops. Many of the decisions that will need to be made in a disaster are usually handled through meetings and proposals lasting for weeks in normal circumstances. The elected officials of the community need to be in the decision process in a disaster to set the policy on the jurisdiction response. Many of these policies can be set well in advance of a disaster and are outlined in the Emergency Operations Plan.*

*There is not any one agency or group in the county, state, or federal government that can repeal the local elected official's responsibility or authority to initiate disaster operations in the community. It is a moral and legal imperative for the local community's leaders to provide for the health, welfare and safety of the local residents and temporary population groups. No actions or plans other than those of the municipality stand any chance of meeting this obligation.*

## **Implementation, Evaluation, and Revisions of the Plan**

The City of Ottawa feels that the Natural Hazards Mitigation Plan is an important tool to help prepare and mitigate the natural hazard threat. The City has participated in the multijurisdictional planning process since the original plan was developed and will continue to do so in the future. This is done minimally every 5 years. The City's Flood Commission, who served as the planning commission for the update to the City's section of the plan, has historically evaluated implementation strategies and their status on an annual basis. The Committee meets at least twice per year. This evaluation is then provided to the City Council and is incorporated in an annual progress report, which is reviewed by the City Council, and placed on file. When the next plan update occurs, the City will recommend having a member of the Flood Commission serve as a representative for Ottawa. The City is also considering the development of a standalone Flood Management Plan to help fulfill CRS requirements more efficiently, as this current update will serve as an addendum to Ottawa's risk assessment portion of the existing plan. Which is available on multiple websites including the City of Ottawa, LaSalle County, and North Central Illinois Council of Governments.