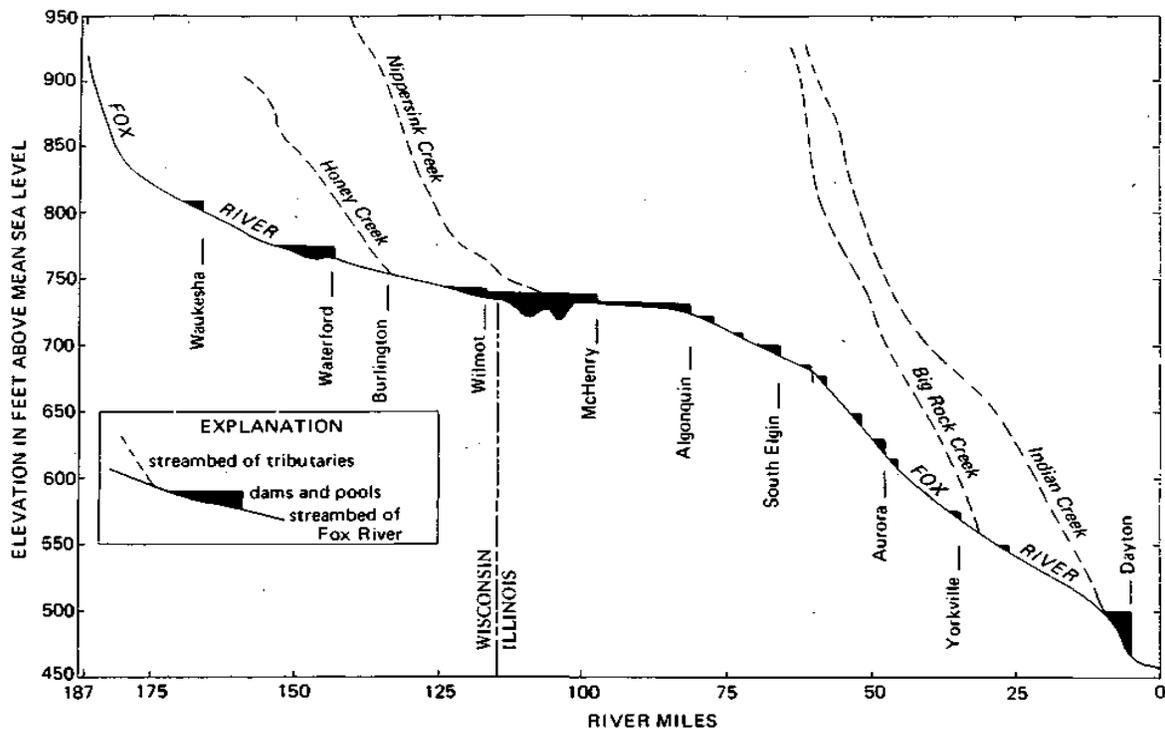


The City of Ottawa Flood Hazards

The City of Ottawa is located in North Central LaSalle County, approximately 45 miles West of Joliet and 90 miles South of Rockford. The primary water course and sources of flooding are the Fox River and the Illinois River. A secondary and relatively inconsequential source of flooding is from the Goose Creek watershed which is only 6.58 square miles. The total fall for the Fox River from its source to Ottawa is 471 feet. The Fox River flows Southwest from its source, just North of Waukesha, Wisconsin, 187 miles to the mouth at the Illinois River in downtown Ottawa. There is a total of 2657 square miles of watershed in this basin. The water level of the Fox River is influenced more by the rainfall and runoff of Northeastern Illinois and Southern Wisconsin than by local rain events.



The Illinois River is influenced by Northeast Illinois, and Northwestern Indiana. The Kankakee, Iroquois, Des Plaines and Chicago Rivers are tributaries of the Illinois River upstream of Ottawa. **A critical component of our flood hazard in Ottawa is that the watershed of the Fox and Illinois Rivers upstream of Ottawa is more than 11,000 square miles.** As a result, the City could receive a minimal amount of rain, yet experience a severe flood event caused by runoff from the watershed.

The Illinois River flows West from its source at the confluence of the Kankakee and Des Plaines Rivers, through Ottawa from (mile mark 242.6) the Eastern boundaries to the Western city limits (mile mark 238.3).

Flood discharges during a 100 year flood event for the Goose Creek is 1,700 cubic feet per second (cfs), for the Fox River is 42,600 cfs and for the Illinois is 114,000 cfs.

The Illinois and Fox River flood characteristics have been studied by the Rock Island, U.S. Army Corps of Engineers. A Flood Damage Reduction Project for the Illinois and Fox Rivers was completed by the USACE in February 2001. A levee was constructed by the USACE pursuant to this study on the Illinois and Fox Rivers. This levee lost its accreditation in March of 2010. The preliminary Digital Flood Insurance Rate Maps, published in March 2010, increased the Base Flood Elevation on the Illinois and Fox Rivers approximately 1.5 feet. The levee provides protection for Ottawa High School, considered a critical facility, and a small section of the Fox River levee does not have the Flood Protection Elevation required for critical facilities. The Federal Emergency Management Agency (FEMA) has published a preliminary Flood Insurance Study dated March 10, 2010. A Hydrologic and Hydraulic analyses was performed for the City of Ottawa for the Goose Creek in 1999.

Record floods have occurred in 1974, 1982, 1983, 1996, 1997, 2007, 2008 and 2009 and 2013. The flood of 2013 crested 1.5' above any recorded event. The 1974, 1983, 1996, 2007, 2008 and 2013 floods all resulted in Federal Disaster declarations. In 2008 Central School was flooded and subsequently declared substantially damaged. This was perhaps the largest single flood loss recorded in the City of Ottawa with FEMA providing over 12 million dollars in relief.

During a flood event Green Street, a secondary means of egress for the East side of Ottawa, becomes impassible. The only other access to the East side is the Main Street bridge. During record flood events this bridge could become unusable, effectively isolating the East side. This happened during the 2013 flood event. Fire and police personal were staged, with apparatus, on the south side of the bridge with a helicopter on stand-by in the event a medivac was needed.

During record flood events residential flooding occurs on the East side (Illinois River) and an area known as the "Flats" (Fox River) at approximately cross section "D" as noted on FIRM panel #530 dated July 18, 2011. As of this date all the homes in the Special Flood Hazard Area (SFHA) of the Flats have been purchased and removed. During these events OSF St. Elizabeth hospital can be threatened, however, they have recently constructed a flood protection wall which protects above the 500 year event. Ottawa High School is also threatened. The high school has a very good flood fighting plan which has been extremely effective, even preventing damage from the record floods of 2008 and 2013. OSF St. Elizabeth hospital also has a very effective flood fighting plan that was recognized by Witt O'Brian Associates during a 2014 evaluation. The City of Ottawa's Waste Water Treatment Facility can also be threatened. A flood protection wall is being constructed at this time. The YMCA is the only other

commercial facility affected during major flood events. Their flood fighting plan prevented major losses during the 2013 event.

During the winter months ice jams on the Fox River cause localized flooding from the mouth upstream to the OSF St. Elizabeth hospital.

Flood Threat Recognition System

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 is manned at all time and provides, storm, flooding and other weather related data and alerts.

EmNet: Emergency Management Network: This is a satellite 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.

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, Waste Water 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.

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 (Nixtle) 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.

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: 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.

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.

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 gatewell 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 gatewell. 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.

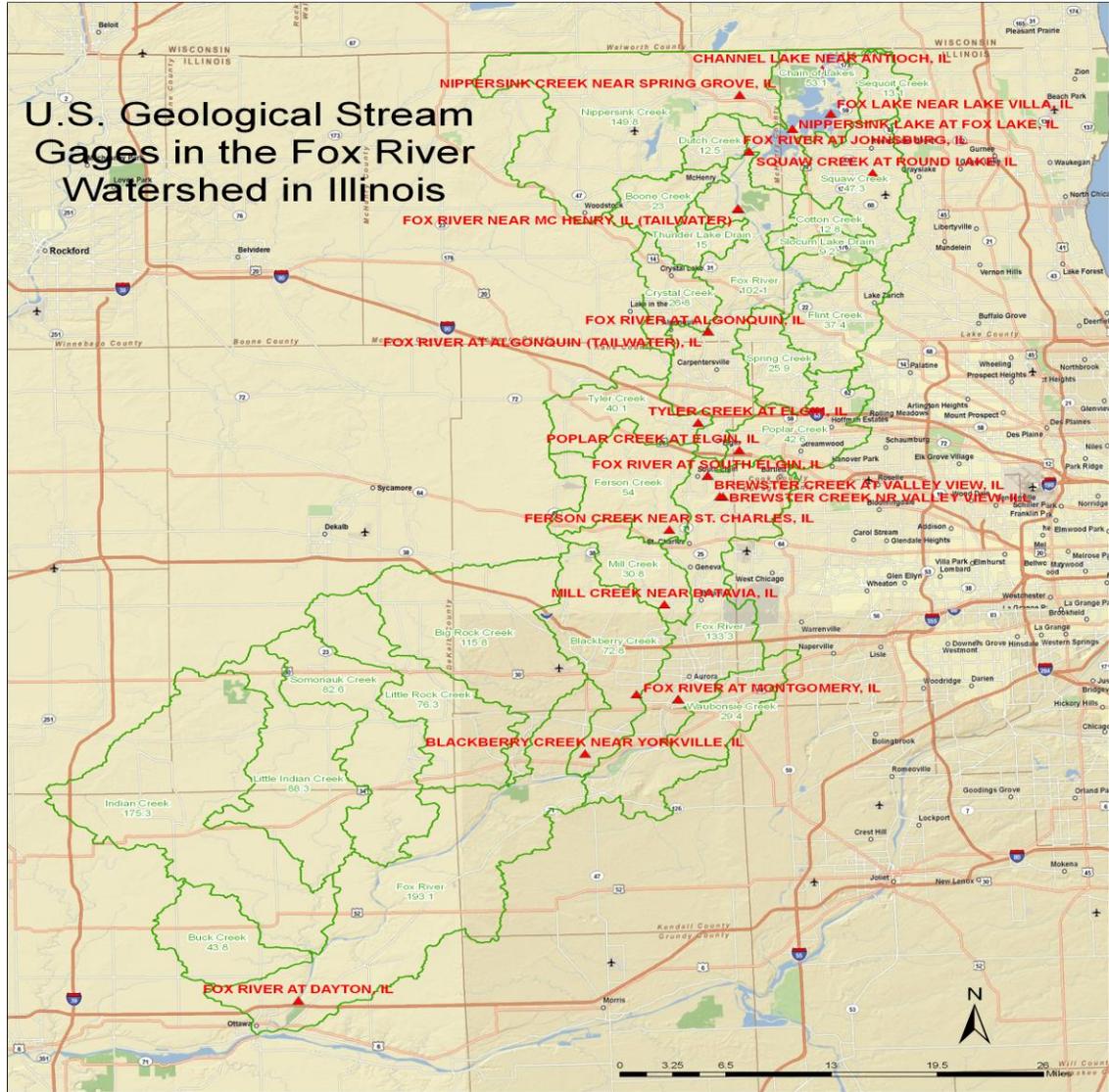
Ottawa High School also has three staff gages located around the property with elevation marks established by survey. The City of Ottawa has a staff gage located on the downstream face of the north pier of Highway 23 Bridge. This gage has been established by survey and has been compared and verified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

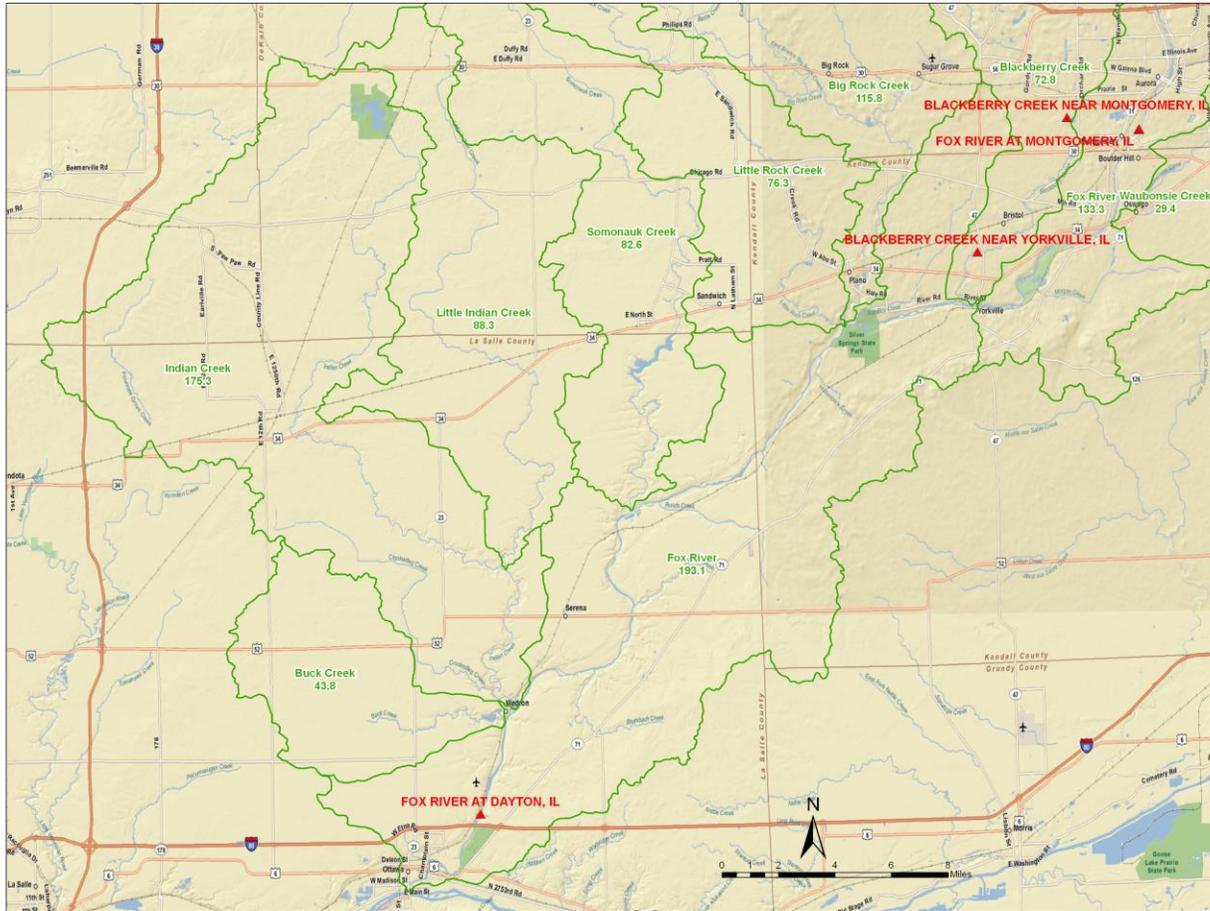
The gage at Ottawa High School is an official forecast point for the National Weather Service. The National Weather Service has multiple official forecast points both upstream and downstream of this gage on both the Illinois and Fox Rivers. This data is monitored at all times by the City of Ottawa's 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 city limits is another gauge. 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.

U.S. Geological Stream Gages in the Fox River Watershed in Illinois





Action Plan

ALL DEPARTMENTS REFER TO APPENDIX B, INUNDATION MAPS OR GO TO:

<http://water.weather.gov/ahps2/hydrograph.php?wfo=lot&gage=otwi2&view=1,1,1,1,1,1,1>

Stage	Staff Assignment	Required Action and Notifications
459.9	None	No action normal pool River infiltration to southeast corner of levee at baseball field.
460.5	Scott Clinch, High School	Gatewell D closed, pumping begins and flood fighting preparations begin. Building Official contacts Scott Clinch. (5 min.)
460.6	Public Works	Backup in CSO 009, arch sewer to Webster St. Close sluice gate MH. City Engineer confirms with Public Works Director. (5 min)
460.8	High School	Pumping operations start (45 min.)

460.8	River Rescue	Emergency boat docks and ramps begin to flood. Building Official contacts River Rescue. (5 min)
461.24	Public Works	Illinois River overtops CSO 18B at High School. City Engineer confirms with Director of Public Works (5 min)
461.3	Ottawa High School	River infiltrates East side City storm system. Pumping begins to control stormwater and mixed systems. (1 hour).
461.7	City of Ottawa	Fox River tops Combined Sewer Overflow (CSO) 18A at Ottawa High School. Close valve in Manhole 011C546. City Engineer confirms with Public Works. (20 min)

FLOOD STAGE

462.5	Ottawa High School	River flooding infiltrates West Parking Lot. Close Gate B, begin pumping to mitigate seepage & storm water. (45 min)
463	City of Ottawa	City Engineer & Building Official to notify OSF St. Elizabeth Hospital, YMCA, & Public Works, Ottawa Police and Fire Departments to prepare for further flood fighting. (30 min).
463.5	Ottawa High School	Illinois River flows into effluent pipe. Close gravity effluent valve and start high river pumps. (30 min)
463.5	City of Ottawa	Building Official notifies Public Works to close Allen Park. Have Thrush Sanitation remove portable toilets from Allen Park and Fox River Park. Have the electrical inspector see that the River Walk power is shut down. (See appendix A, River Walk Electrical Shut Down Procedure). (1 hr. 20 min).
464	City of Ottawa	City Engineer to notify Ameren and Nicor Gas to close down all utilities in the Special Flood Hazard Area. (5 min)
465	Heritage Harbor	Harborwalk floods. Dock ramps cannot be accessed without a boat.

Moderate Flood Stage

465.3	OSF St. Elizabeth Hospital	Building Official contacts hospital. Lower green spaces on the hospital grounds begin to flood. (5 min)
465.3	City of Ottawa	City Engineer contacts Public Works to barricade Hudson Street as it will become impassible (25 min).
465.5	Marquette High School	Football fields begin to flood. Building Official contacts high school. (5 min)
466	Heritage Harbor	Travel-lift slab area begins to flood. Secure all items and remove to high ground. (2 hours)
466.4	City of Ottawa	City Engineer ensures that River Walk at Hudson Street is closed, Fox River Park is closed and St. Clair Street is barricaded. (1 hour)
467.2	City of Ottawa	Illinois River level reaches Douglas and Leland CSO. City Engineer to notify Waste Water Treatment Plant. (5 min)

467.3	City of Ottawa	Illinois River level reaches Chester Street CSO. City Engineer to notify Public Works to close sluice gate MH012DO11 (40 min)
467.5	City of Ottawa and Shoreline Boat Club	Building Official to notify Streets Department to close Green Street. Have the police activate the NIXLE to notify east side resident. Notify Shoreline Boat Club to secure boats & land cradles and to evacuate property.(City 25min, Shoreline 2 hours)
468.1	City of Ottawa	Illinois River floods the old Central School property. Blockade driveway entrances. (20 min)
468.1	River Rescue	Building is threatened. River Rescue personnel to remove equipment to higher ground and begin 24 hour watch. (2 hours)
468.7	City of Ottawa	Fox River is flowing into CS0-011 off Main Street.
468.7	River Rescue	River infiltrates building.
468.7	City of Ottawa	Illinois River is flowing into CS0-006 off Riverview Drive.
468.8	YMCA	Flood fighting begins, sandbag lower level entry ways.(4 hours)
<u>MAJOR FLOOD STAGE</u>		
469	OSF St. Elizabeth Hospital	Shut storm drain valve off. (15 min)
469	City of Ottawa	City Engineer engages incident command. Activate the City of Ottawa's Emergency Response Plan. Notify the Mayor of emergency status. Designate Public Information Officer and contact LaSalle County EOM, Contact Red Cross, WCMY radio station, and The Times. Activate Community Emergency Notification System (NIXLE) Inform entire community of the current flood threat.
470	Ottawa High School	River infiltration at Shabbona Street begins. Construction of sandbag enclosure begins. (4.5 to 6 hours).
470.2	City of Ottawa	City Engineer to have Public Works monitor Jackson Street lift station. Shut down power if necessary.
471.3	YMCA	Fox River reaches center of parking lot.
471.5	City of Ottawa	Fox River is flowing into CS0-013 off Madison Street
472	OSF St. Elizabeth Hospital	West parking lot floods
472.2	City of Ottawa	Sand bag Waste Water Treatment facility berm (6 hours)
473	OSF St. Elizabeth Hospital	Emergency Room Floor Elevation. Flood protection wall installed in 2009 should prevent any infiltration of water.
474	Shoreline Boat Club	Building will be under water.
474	City of Ottawa	Illinois River will overtop the berm at WWTP if not sandbagged.
474.5	Ottawa High School	Top of Fox River levee.
475	Heritage Harbor	All power should be shut down to docks. (15 min).
475.33	Heritage Harbor	Lowest basement begins to flood
475.85	Ottawa High School	Top of flood protection wall on Fox River South of Main Street Bridge.

476

City of Ottawa

City Engineer to monitor Main Street bridge. If the Main Street bridge is to be closed, move to Unified Command. Consider evacuation of East side. Mayor to consider Disaster Declaration. Notify all residents of East Side via NIXLE. Police and Fire Departments stage on south side of bridge. Have lifeline helicopter on standby (may use high school west lot). (1 hr.)

476.8

Heritage Harbor

Roadway connecting West peninsula to Canal Road begins to flood. Power transformers should be shut down.

Flood Impacts

During a flood event at “Flood Stage” and “Moderate Flood Stage” the impact to the general public is limited. Most repetitive loss properties that were affected at these stages have been mitigated. The Police Dispatch does take on additional burden but generally there are no “call back to duty” during these stages. In the flood response section of this plan, there are designated times and stages to shut down utilities such as power and gas.

When the flood stage moves to a “Major” event, additional personal are called to duty. During the major event of 2013, the mayor declared an emergency status and called all city personal back to duty. As noted in the response section the fire and police department stage equipment and personal on the east side of the Main Street bridge until the flood waters recede.

After the flood event there is a dedicated packet of hand outs (outlined in the PPI) that is delivered to all properties affected by the flood. This informational hand out outlines flood safety measures during and after a flood event.