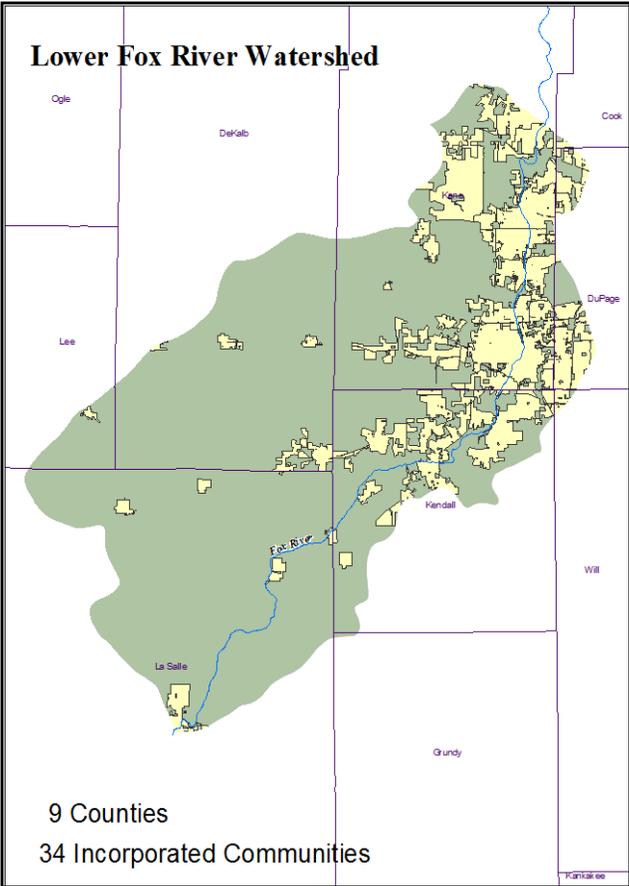


Lower Fox River Watershed Discovery Report



Prepared for the Federal Emergency Management Agency
By Illinois State Water Survey
November 2011
Updated January 28, 2015

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Discovery Report for Lower Fox Watershed, Illinois

Executive Summary

The Lower Fox Watershed lies entirely in Illinois and covers significant parts of Kane, Kendall, LaSalle, and DeKalb Counties. The watershed boundary also touches Cook, Lee, DuPage, Will, and Grundy Counties. The objective of this project was to investigate flood issues in the Lower Fox Watershed, acquire relevant information through a series of meetings with stakeholders, and prepare a report and maps that communicate the information and data collected.

There are a number of flooding issues in the Lower Fox Watershed, and analyses of available data were performed to determine where there are combinations of potentially unverified engineering data, high risk, and community concerns. Prior to the Discovery meetings, a draft Discovery Map was created displaying, where possible, the data identified. Watershed stakeholders from a variety of disciplines were invited to four Discovery meetings held in November 2010, one each in DeKalb, Kane, Kendall, and LaSalle Counties. The objectives of the meetings were to present and verify information about flooding in the watershed and collect additional information from watershed stakeholders on flooding issues and mitigation interest. The Discovery Map (and associated geospatial database) was updated with the information gathered at the meetings and through subsequent follow-up contacts.

The following report documents the data collected, community input, and areas of interest for possible additional study.

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Discovery Report for Lower Fox Watershed, Illinois

Project Description

The objective of the Risk Mapping, Assessment, and Planning (Risk MAP) Project documented in Mapping Activity Statement (MAS) ISWS10-17 is to collect relevant information through Discovery meetings in the Lower Fox Watershed and to demonstrate new/enhanced Risk MAP products to state, local, and tribal stakeholders. The project was funded by the Federal Emergency Management Agency (FEMA). The project area covers the Lower Fox Watershed, Hydrologic Unit Code (HUC) 07120007, which includes portions of Kane, LaSalle, Kendall, DeKalb, Cook, Lee, DuPage, Will, and Grundy Counties in Illinois. Products include Discovery Map, Discovery meetings, and development and demonstration of depth and analysis grids for the Kane County portion of the watershed.

The statement of work calls for processes and deliverables to be completed in accordance with FEMA's Guidelines and Specifications (G&S) for Flood Hazard Mapping Partners and effective Procedure Memoranda (PMs). However, the only guidance available at the time the project was conducted included the MAS and the draft Appendix I. Tools and templates for execution of Discovery meetings and other Risk MAP products were not available.

Countywide Digital Flood Insurance Rate Maps (DFIRMs) are effective for most of the Lower Fox Watershed with the exception of the area within Grundy and Will Counties where preliminary maps had been released at the time of this report. Few new flood studies were incorporated in the DFIRMs, thus the effective dates of the DFIRMS are not representative of the dates of the incorporated flood study data, which are considerably older. The Discovery project for the Lower Fox provided an opportunity to revisit the area to examine the validity of effective flood studies and to determine if the area would benefit from Risk MAP products in addition to the regulatory DFIRMs.

Acknowledgements

The project work involved a number of disciplines and individuals without whose contribution the project could not have been performed. FEMA provided funding for the project. The University of Illinois (U of I) Extension worked with the Illinois State Water Survey (ISWS) to set up the meetings and identify invitees corresponding to the various agencies and local entities listed in the MAS. U of I Extension professional educators worked with ISWS staff to present at the meetings and facilitate small group discussion. Many staff from the ISWS contributed to the project.

Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the Illinois State Water Survey or the University of Illinois.

Watershed Description

The Fox River flows from Wisconsin through northeastern Illinois and joins the Illinois River at Ottawa. The Fox River drains 938 square miles in Wisconsin and 1,720 square miles in Illinois. The Fox watershed has two HUC-8 divisions. The Upper Fox Watershed is HUC 07120006 and is not included in this project. This Discovery project covers the Lower Fox Watershed, HUC 07120007, which includes the main stem of the Fox River from approximately the City of Elgin, Illinois to the confluence of the Fox River with the Illinois River.

The Fox River drains approximately 75 percent of Kane County. The upper boundary of the Lower Fox Watershed is located in Kane County, and the Lower Fox Watershed includes more than 50 percent of the land area of Kane County. The Fox River flows from Kane County into Kendall County. In Kendall County several creeks are tributary to the Fox River, including Blackberry, Rob Roy, Big Rock, Little Rock, Hollenback, Clear, and a few other smaller creeks. Flowing southwest and leaving Kendall County, the Fox River enters northeastern LaSalle County and flows generally southwestward until it joins the Illinois River at Ottawa, Illinois, near the center of the county. Two major tributaries, Indian Creek and Somonauk Creek, flow south from DeKalb County and join the Fox River. Somonauk, Little Rock, Indian, and Little Indian Creeks are all tributaries of the Fox River within DeKalb County. The main stem of the Fox River is not within DeKalb County. There are six HUC-10 watersheds in the Lower Fox HUC-8 watershed, listed in Table 1.

Table 1. HUC-10 Watersheds within Lower Fox Watershed

<i>HUC_10</i>	<i>HU_10_Name</i>
712000701	Ferson Creek-Fox River
712000702	Blackberry Creek
712000703	Big Rock Creek
712000704	Somonauk Creek
712000705	Indian Creek
712000706	Roods Creek-Fox River

Land Usage and Population

The Fox River and the land in the watershed are used for agriculture, industry, recreation, residences, and urban development. Within the Chicago metropolitan area, there is increasing population growth and pressure from development. By 2020, the population of the Fox River Watershed in Illinois is expected to increase dramatically (approximately 30 percent) from the 2000 totals, with much of the growth in McHenry and Kane Counties.

The northeastern portion of the Lower Fox Watershed is more developed, while the southwest is primarily used for agriculture. The mainstem of the Fox River is used for recreation and is a source of potable water for public water supply. The Fox River and its tributaries carry stormwater and receive permitted discharges from wastewater treatment plants, combined sewers, and industry. The Lower Fox Watershed lies entirely in Illinois and covers significant parts of Kane, Kendall, LaSalle, and DeKalb Counties. The watershed boundary also touches

Cook, Lee, DuPage, Will, and Grundy Counties, Illinois. Figure 1 illustrates the Lower Fox Watershed land area by percentage in each county.

There are 44 communities (counties included in the tally) within the Lower Fox Watershed. These are listed in Table 2. County names are in bold font. Population estimates for the Lower Fox Watershed were calculated using Census 2000 census block population data for each county. These data were downloaded on October 8, 2010 from the U.S. Census Bureau's American FactFinder website and joined with Census 2000 census block feature class located in the Hazards United States – Multi-Hazard (HAZUS-MH) MR4 database. Population was summed for each county within the Lower Fox Watershed as shown in Table 3 and Figure 2.

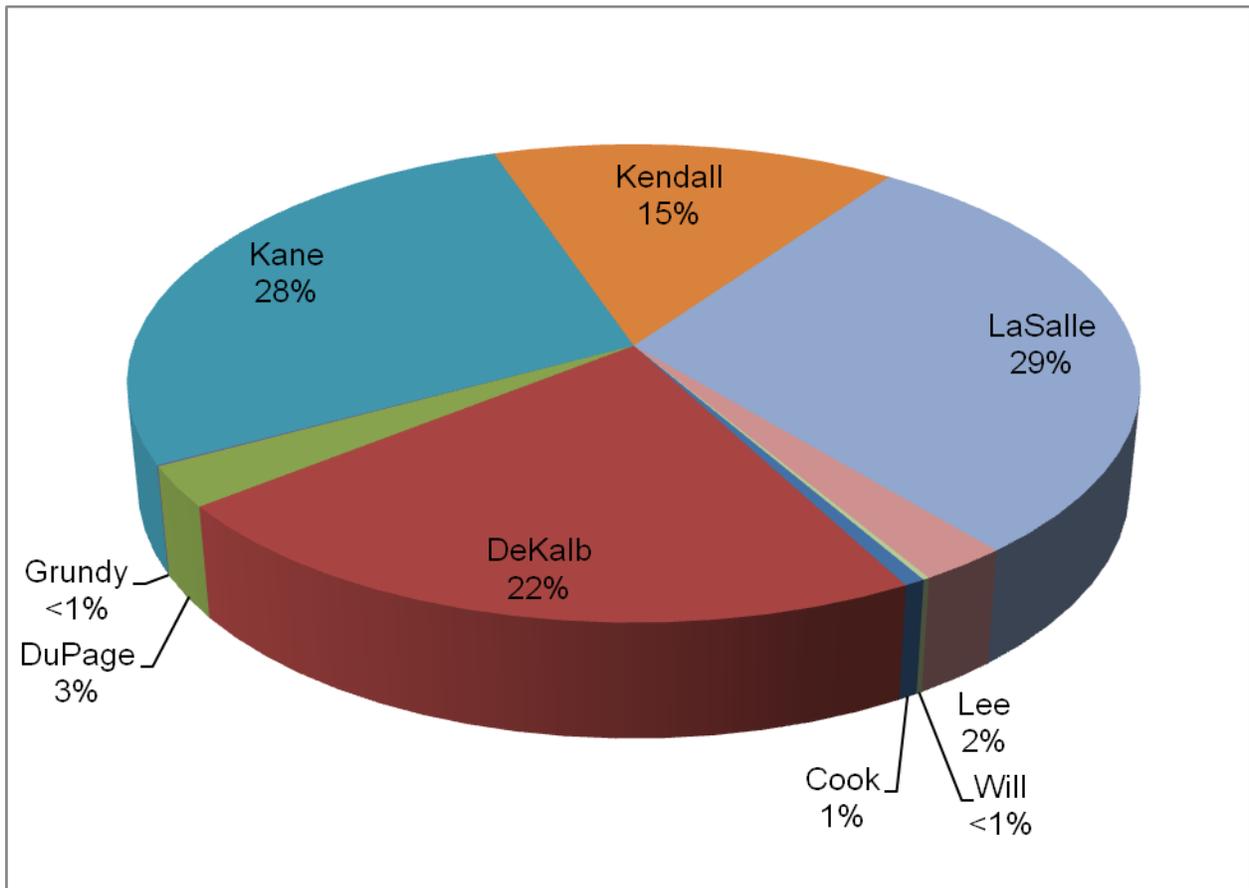


Figure 1. Percent of Lower Fox Watershed Land Area by County

Table 2. Communities within Lower Fox Watershed

Cook County	City of Geneva	City of Sandwich
Village of Streamwood	City of St. Charles	City of Yorkville
DeKalb County	Village of Bartlett	Village of Millbrook
Village of Hinckley	Village of Big Rock	Village of Millington
Village of Shabbona	Village of Campton Hills	Village of Newark
Village of Somonauk	Village of Elburn	Village of Oswego
Village of Waterman	Village of Kaneville	La Salle County
DuPage County	Village of Lily Lake	City of Earlville
City of Naperville	Village of Montgomery	City of Ottawa
City of West Chicago	Village of North Aurora	Village of Leland
Grundy County	Village of South Elgin	Village of Sheridan
Kane County	Village of Sugar Grove	Lee County
City of Aurora	Village of Wayne	Village of Paw Paw
City of Batavia	Kendall County	Will County
City of Elgin	City of Plano	

Table 3. County Populations within the Lower Fox Watershed

<i>County</i>	<i>Population 2010</i>
Cook	5,194,675
DuPage	916,924
DeKalb	105,160
Grundy	50,063
Kane	515,269
Kendall	114,736
LaSalle	113,924
Lee	36,031
Will	677,560
	8,401,902
<i>Source: U.S. Census Bureau</i>	
<i>http://quickfacts.census.gov/qfd/states/17000.html</i>	

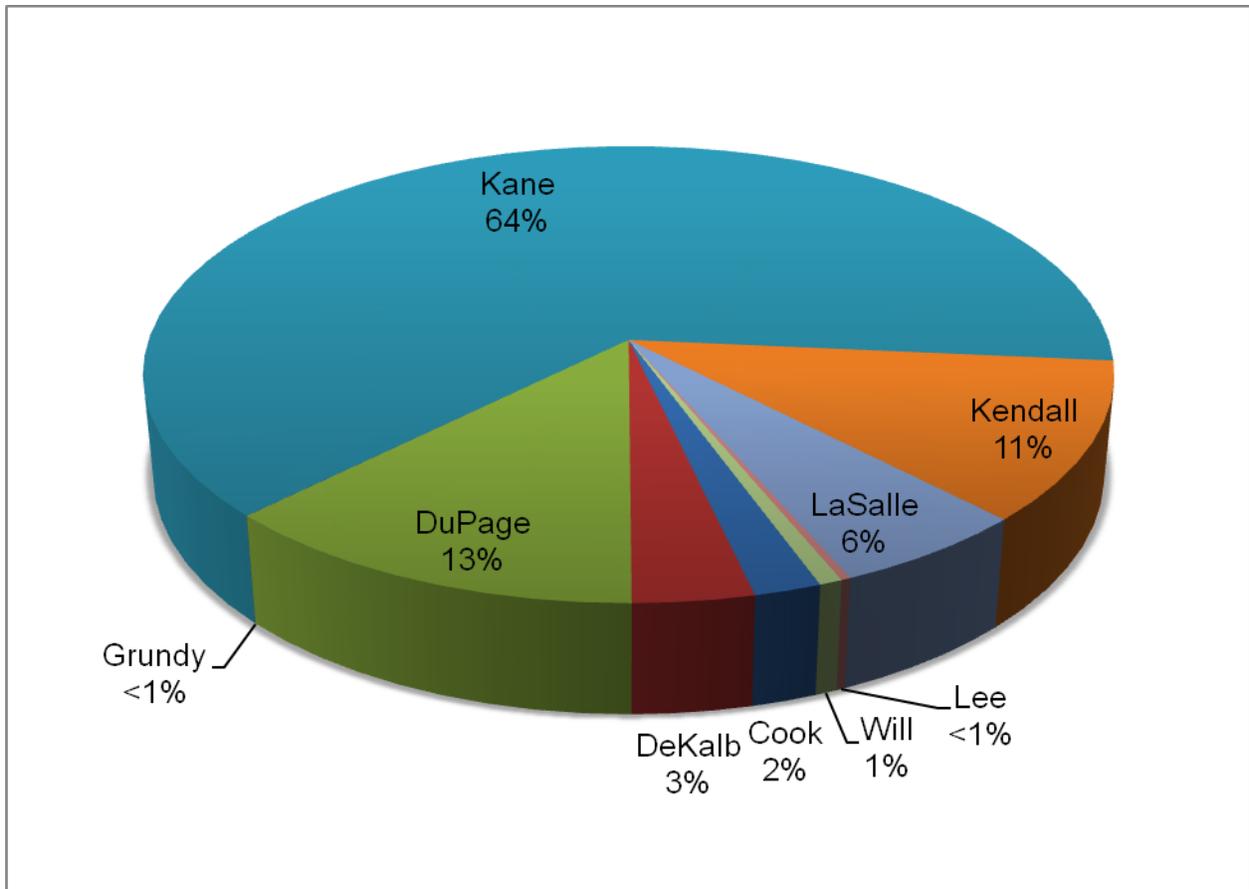


Figure 2. Population per Unincorporated County in Lower Fox Watershed

Data Collection

Spatial Data

Spatial data are stored in a geospatial database and can be displayed or queried. The database *Discovery_07120007_LowerFox.mdb* contains spatial data sets collected and displayed on the Discovery Maps prepared through the Discovery process.

Prior to the Discovery meetings, available data for the Lower Fox Watershed was identified and, where possible, displayed on the draft Discovery Map. Table 4 lists the spatial data displayed on the draft Discovery Map and the data source. This information was distributed at the Discovery meetings. Community representatives were provided data forms and asked to list any spatial data held by the community that might be used in future studies. Additional data acquired after the Discovery meeting were added to create the final Discovery Map. The data sets added to update the Discovery Map include the Phase III Coordinated Needs Management Strategy (CNMS data) and Census Block Group Risk Decile.

Through the Discovery process (see Appendix A, Discovery Meetings), information was provided by communities and Discovery meeting attendees on areas of flooding, roads that

overtop during flood events, mitigation projects, and other issues related to flooding. The corresponding locations were marked on the draft Discovery Maps or copies of the DFIRMs. Feature classes were created from the community-supplied comments.

On the basis of the information gathered at the Discovery meetings, recurring flooding issues were found to be associated with areas of high development within the watershed, resulting in a need for new or updated stream studies. Ice jams were repeatedly noted as a cause of flooding, and buyout projects were given as the prevalent form of flood mitigation. A list of all comments received is provided in Appendix B.

Table 4. Draft Discovery Map Geospatial Data Layers

Data Layer	Description	Source
Levees	Location of levees considered for accreditation status by FEMA	FEMA Midterm Levee Inventory
Ice jams	Location of ice jams	US Army Corps of Engineers - Ice Jam Database
Letters of Map Change	Locations of Letters of Map Change	FEMA Mapping Information Platform Database
Stream gages	Location of stream gages operated by multiple agencies	National Weather Service - Advanced Hydrologic Prediction Service
Dams	Location of high hazard dams	US Army Corps of Engineers - National Inventory of Dams
HUC-8 watershed boundaries	HUC-8 scale watershed boundaries	USGS National Hydrography Dataset
CNMS status	Engineering study needs as defined by Phase 2 CNMS data	Region V CNMS Inventory
Major roads	Location of major roads	Illinois Department of Transportation, 2009
County boundaries	Location of county boundaries	USGS topographic maps
Community boundaries	Location of community boundaries	Illinois Department of Revenue, 2007
Special Flood Hazard Areas	Location of special flood hazard areas	FEMA Digital Flood Insurance Rate Maps; Illinois State Water Survey
Federal land	Location of federally owned lands	National Atlas of the United States
DEM hillshade	Relief shading showing general topography of watershed	USGS National Elevation Dataset, 1 arc-second resolution

Relevant Reports and Studies

The following reports were identified during the Discovery process. The list is not intended to be comprehensive.

- *GO TO 2040* (CMAP, 2010): a comprehensive regional plan that will guide growth in Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will Counties for the rest of this century. In addition to land use and transportation, *GO TO 2040* also addresses the full range of quality-of-life issues, including the natural environment, economic development, housing, and human services such as education, health care, and other social services.
- *Kane County Comprehensive Stormwater Management Plan* (Kane County, 1998): a long-term plan prepared by Kane County and published October 13, 1998.
- *Land Resource Management Plan, Fox River Corridor Plan, June 2008* (Teska Associates, Inc., 2008): a plan prepared by Kane County with the purpose of providing a focused study and set of guidelines for a segment of the Fox River Corridor west of Route 47. This area is experiencing less growth and development pressure than other segments further upstream in the northeast section of the county. The Fox River Corridor study area extends in a northeasterly direction from the Kendall County/LaSalle County line to Route 47. Communities located along or in close proximity to the study area are Millington, Newark, Millbrook, Sandwich, Yorkville, and Plano, all of which are contained within the Lower Fox Watershed. Design guidelines in the plan establish the goals and standards that are intended to guide the design and installation of river corridor elements, which generally conform to the following categories: parks, open space and recreational facilities, natural features, stormwater management, cultural resources, road corridors, and land development.

Unpublished engineering reports as well as maps, flood mitigation activities, historical flood information, and risk assessments provided by the communities are listed in Appendix C.

Community Status Summaries

Information regarding the status of Digital Flood Insurance Maps, Mitigation Plans, and available topography is provided in Table 5. Mitigation plan status was accessed at the Illinois Emergency Management Agency website on February 26, 2011.

Table 5. County Status of DFIRMs, Mitigation Plans, and Topography

<i>County</i>	<i>Countywide DFIRM Effective Date</i>	<i>Processing Status</i>	<i>Mitigation Plan Status*</i>	<i>Topography Acquisition</i>
Cook	08/19/2008		September 22, 2014	2007
DeKalb	01/02/2009		August 28, 2013	2009
DuPage	In progress	Effective maps 12/16/2004 - Not produced by ISWS	May 24, 2013	2006
Grundy	08/02/2012		August 2, 2013	2008
Kane	08/03/2009		February 3, 2010	2008

Table 5. Concluded

<i>County</i>	<i>Countywide DFIRM Effective Date</i>	<i>Processing Status</i>	<i>Mitigation Plan Status*</i>	<i>Topography Acquisition</i>
Kendall	02/04/2009		May 22,2012	2010
LaSalle	07/18/2011		October 2008; Update in progress	In progress 2011 (Matthew Stafford, LaSalle County Environmental Services and Land Use Department)
Lee	04/05/2010		August 11, 2011	2009
Will	Preliminary	Open House held 03/05/2009; Appeal Period ended 11/04/2009	January 13, 2014	2004
<p><i>*Approved mitigation plans can be accessed at the Illinois Emergency Management Agency website http://www.iema.illinois.gov/iema/planning/MitigationPlanning.asp</i></p>				

All communities in the watershed participate in the National Flood Insurance Program (NFIP); however, very few participate in the Community Rating System (CRS). Each county has either an existing Multijurisdictional Hazard Mitigation Plan, a plan in progress or is actively seeking funding to initiate planning. Each county has had multiple disaster declarations due to flooding since 1953. The most recent regional flooding event was in 2013. Table 6 provides an overview of status information for counties and communities across the watershed but is not prorated or limited to the area of the county or community within the watershed. The information was obtained from the following sources:

- Community Rating System Status: Obtained from the FEMA website on October 1, 2014. (<http://www.fema.gov/library/viewRecord.do?id=3629>) Information is current as of October 1, 2014.
- Disaster Declaration Data: Obtained from the FEMA Disaster Declaration Summary (<http://www.data.gov/raw/1491#description>), a summarized dataset describing all federally declared disasters by county. The data were accessed October 1, 2014 and are current as of June 1, 2014. This information begins with the first disaster declaration in 1953 and features all three disaster declaration types: major disaster, emergency, and fire management assistance. The dataset includes declared recovery programs and geographic areas (county not available before 1964; fire management records are considered partial due to historical nature of the dataset).
- Repetitive Loss Data: Accessed via FEMA’s NFIP Community Information System (CIS) website on October 11, 2010. The NFIP-CIS is the official record of National Flood Insurance information and provides information about floodplain management, mapping, and insurance for the NFIP communities. The CIS includes demographic, engineering, insurance, and community-specific information for jurisdictions in the United States that are identified as floodprone. Each community within the watershed was reviewed, and the cumulative number of repetitive loss properties, number of repetitive loss payouts, and total dollar amount of repetitive loss payouts were recorded.

Table 6. Summary of Community Status

<i>Community</i>	<i>Population (Census 2010)</i>	<i>NFIP</i>	<i>CRS Participation/ Rank as of October 1, 2014</i>	<i>Federal Declared Disasters with Flooding (1953- 10/1/2014)</i>	<i>Multi- Jurisdictional Mitigation Plan (10/1/2014)</i>	<i>Other Planning Documents</i>	<i>Flood Insurance Policies</i>	<i>Repetitive Loss Buildings</i>	<i>Repetitive Loss Payouts</i>
Cook County	5,194,675	Yes	No	14	September 2014	<i>GO TO 2040</i>			
Streamwood, Village of		Yes	No					0	
DeKalb County	105,160	Yes	No	6	August 2013		98		
Hinckley, Village of		Yes	No				5	1	2
Sandwich, City of*		Yes	No				2	0	
Shabbona, Village of		Yes	No				5	0	
Somonauk, Village of		Yes	No					0	
Waterman, Village of		Yes	No					0	
DuPage County	916,924	Yes	No	9	May 2013	<i>GO TO 2040</i>			
Naperville, City of		Yes	10					3	9
West Chicago, City of		Yes	No					0	
Grundy County	50,063	Yes	No	7	August 2013				
Kane County	515,269	Yes	No	9	February 2010	<i>GO TO 2040, Kane County Comprehensive Stormwater Management Plan</i>	298		
Aurora, City of*		Yes	No				871	8	33
*Multi-county community									

Table 6. Continued

<i>Community</i>	<i>Population (Census 2010)</i>	<i>NFIP</i>	<i>CRS Participation/ Rank as of October 1, 2014</i>	<i>Federal Declared Disasters with Flooding (1953- 10/1/2014)</i>	<i>Multi- Jurisdictional Mitigation Plan</i>	<i>Other Planning Documents</i>	<i>Flood Insurance Policies</i>	<i>Repetitive Loss Buildings</i>	<i>Repetitive Loss Payouts</i>
Bartlett, Village of *		Yes	7				38	0	
Batavia, City of *		Yes	No				22	0	
Big Rock, Village of		Yes	No				3	0	
Campton Hills, Village of		Yes	No				12	0	
Elburn, Village of		Yes	No				2	0	
Elgin, City of*		Yes	No				280	14	36
Geneva, City of		Yes	No				2	0	
Kaneville, Village of		Yes	No				0	0	
Lily Lake, Village of		Yes	No				2	0	
Montgomery, Village of *		Yes	Applied				72	5	17
North Aurora, Village of		Yes	No				13	1	2
South Elgin, Village of		Yes	5				101	3	6
St. Charles, City of *		Yes	5				69	2	4
Sugar Grove, Village of		Yes	6				15	0	
Wayne, Village of		Yes	No				6	0	
*Multi-county community									

Table 6. Concluded

<i>Community</i>	<i>Population (Census 2010)</i>	<i>NFIP</i>	<i>CRS Participation/ Rank as of October 1, 2014</i>	<i>Federal Declared Disasters with Flooding (1953- 10/1/2014)</i>	<i>Multi- Jurisdictional Mitigation Plan</i>	<i>Other Planning Documents</i>	<i>Flood Insurance Policies</i>	<i>Repetitive Loss Buildings</i>	<i>Repetitive Loss Payouts</i>
Kendall County	114,736	Yes	No	6	May 2012	<i>GO TO 2040</i>			
Millbrook, Village of		Yes	No					0	
Millington, Village of		Yes	No					1	2
Newark, Village of		Yes	No					0	
Oswego, Village of		Yes	No					0	
Plano, City of		Yes	No					2	7
Sandwich, City of *		Yes	No						
Yorkville, City of		Yes	No					1	2
LaSalle County	113,924	Yes	8	11	October 2008; Update in progress		109		
Earlville, City of		Yes	No					0	
Leland, Village of		Yes	No					0	
Ottawa, City of		Yes	5				55	13	38
Sheridan, Village of		Yes	No				8	0	
Lee County	36,031	Yes	No	4	August 2011				
Paw Paw, Village of		Yes	No					0	
Will County	677,560	Yes	No	10	January 2014	<i>GO TO 2040</i>			
*Multi-county community									

Community Flood Histories, Issues, and Possible Mitigation Actions

Unless otherwise indicated, the following information was collected from county Flood Insurance Studies, county Natural Hazards Mitigation Plans, and reports posted at the National Oceanic and Atmospheric Administration's National Weather Service website.

DeKalb County

Flooding History

September 2008 Event: Flash flooding or significant flooding occurred across much of DeKalb County, with street closures, basement flooding, and creek, stream, and river flooding reported. Street flooding was reported in Waterman, Hinckley, and Shabbona (NOAA, September 2008).

Flooding Issues

- The Village of Shabbona is subject to depressional flooding (IDNR, Community Action Contact, 1999).

Kane County

Flooding History

<i>Month</i>	<i>Year</i>	<i>Location</i>	<i>Watershed</i>	<i>Declaration</i>
June	1981	Aurora, Montgomery	Blackberry Creek and Fox River tributaries	State
December	1982	Fox River	Fox River	State
July	1983	Aurora, Montgomery, Elgin, Sugar Grove	Blackberry, Indian, Welch Creeks - Fox River tributaries	State
September-October	1986	North end of county	Fox River tributaries	Federal
January-February	1988	East & West Dundee	Fox River-ice jam	State
March	1993	Fox River	Fox River	State
May	1996	Fox River	Fox North, South	State
July	1996	South end of county	Blackberry and Indian Creek tributaries	Federal
February	1997	Elgin, St. Charles	Fox North tributaries	---
June	1999	Hampshire Township	Coon Creek (Not in Fox River Watershed)	---
August	2007	Center/North county	Fox River, Ferson-Otter Creek, Tyler Creek	Federal
September	2008	Center county	Fox River, Ferson-Otter Creek, Blackberry Creek	Federal

Source: Kane County Natural Hazards Mitigation Planning Committee (Kane County, 2009)

<http://www.co.kane.il.us/hazards/finalPlan.asp>

September 2008 Event: Flash flooding or significant flooding occurred across most of Kane County, with street closures, basement flooding, and creek, stream, and river flooding reported. Extensive reports of flooding and damage included the destruction of a retention pond wall in South Elgin, flooding along the Fox River in Batavia, and the recovery of eight cars from floodwaters along Route 56 and in residential areas in Elgin near Popular Creek. Numerous other vehicles were abandoned in floodwaters (NOAA, September 2008).

Flooding Issues (Kane County, 2009)

City of Aurora

- Flooding has occurred upstream of Illinois Avenue in a drainage area from Greenfield Lake to Orchard Lake. The city has identified the cause of this flooding to be undersized culverts under Illinois Avenue.

Mitigation Actions

The city is in the process of preparing a Combined Sewer Overflow Long-Term Control Plan that will be used as a planning tool to decrease the frequency of combined sewage overflows into the Fox River and Indian Creek. The plan is a requirement listed in the city's Combined Sewer Overflow National Pollution Discharge Elimination System permit proposing the construction of storm sewers within sewer basins 5, 6, and 13. The completed project should prevent sewer back-ups and eliminate combination sewer overflows to the Fox River.

Cities of Batavia and Geneva; Unincorporated Kane County

- Flooding has occurred in areas near and along the Braeburn Marsh County Forest Preserve, located on the western side of Batavia and Geneva, during heavy rain events.

Mitigation Actions

The City Of Batavia has contracted with a consultant to model the watershed and identify flood mitigation projects for the area.

The Kane County Environmental and Building Management Department is continuing to work with the Illinois Emergency Management Agency (IEMA) and FEMA on the repetitive loss areas in the county. Kane County was awarded one grant in 2008 to acquire three structures and is currently pursuing completion of those buyouts.

Village of Big Rock

- Residents of the Tenerelli Subdivision suffer habitual water ponding that jeopardizes the proper function of septic leach fields. During storm events, some residents cannot access their homes until the rising water recedes.
- Two subdivisions, Bergman Estates and Raymond Woods, have been newly annexed to the village (April 2009). The roadways and yards of these residential areas suffer from severe ponding during heavy rains or storm events. The culverts and drainage ways are undersized and deteriorating.

Mitigation Actions

The Village of Big Rock is collaborating with Kane County's Water Resource Department to resolve the drainage/flooding issues plaguing the Tenerelli Subdivision. A study and report along with a cost-estimate was finalized in March of 2011. In June of 2011, the county and village received word that an IKE grant was received for the project, with construction planned for the summer of 2012.

In addition, following the installation of a water reclamation facility, the village is researching the feasibility of assuming responsibility for and improving the existing tile line on the south side of the town center to mitigate drainage/flooding conditions in that section of town versus developing a separate nuisance flow system and improved roadway drainage. The village is planning to work with homeowners on a property protection program for surface and subsurface drainage improvements.

City of St. Charles

- Hydrologic results of a study of 7th Avenue Creek performed by Wills Burke Kelsey Associates (Wills Burke Kelsey Associates, August 13, 2009) indicated higher flows at the Tyler Road crossing of the 7th Avenue Creek as compared to those estimated at the upstream limit of the regulatory Flood Insurance Study (FIS) analysis. These higher flows were attributed to increased rainfall depths and additional development within the contributing watershed. The purpose of the study was to provide a hydrologic and hydraulic analysis in support of extending the regulatory FIS for the 7th Avenue Creek in the City of St. Charles between Tyler Road and Kirk Road.

Mitigation Actions

The city requested that FEMA revise the downstream reach of 7th Avenue Creek to account for the updated hydrologic information. That study was funded and was accepted by FEMA in 2010.

Kendall County

Flooding History

There are two USGS gages operating in the Fox Watershed within Kendall County; below are listed the top five peak flows recorded during the period of record listed.

Fox River at Montgomery, Illinois - USGS Gage 05551540		
Period of Record 2003–2008		
Datum of Gage: 603.52 feet above NGVD29		
<i>Date</i>	<i>Peak Streamflow (cfs)*</i>	<i>River Stage (feet)</i>
09/17/2008	18,000	15.20
08/24/2007	13,800	14.69
12/28/2008	10,500	14.11
05/31/2004	8,800	13.92
05/11/2003	4,290	12.95

**All or part of the record affected by urbanization, mining, agricultural changes, channelization or other*

Source: USGS Surface-Water Data for Illinois at <http://waterdata.usgs.gov/il/nwis/sw>

Blackberry Creek Near Yorkville, Illinois - USGS Gage 05551700		
Period of Record 1961–2008		
Datum of Gage: 612.34 feet above NGVD29		
<i>Date</i>	<i>Peak Streamflow (cfs)</i>	<i>River Stage (feet)</i>
07/18/1996	5,510	13.16
09/15/2008	2,130	9.94
07/03/1983	2,060	9.91
02/22/1997	2,040	9.96
12/29/2008	1,270	8.91

Source: USGS Surface-Water Data for Illinois at <http://waterdata.usgs.gov/il/nwis/sw>

September 2008 Event: In Oswego, Route 25 was flooded and closed between Oswego and Montgomery Roads, and at least one car was swept into the Fox River. Four miles south of Little Rock, Jetter Road was flooded and closed. Three occupants of a car were rescued after their car was swept into Big Rock Creek. In Plano, many roads were flooded and closed, including Hale Road, Main Street, Miller Road, and Creek Road, and extensive flooding was reported along Rock Creek Road. Extensive flooding was reported in Millington. Part of Fox River Drive was washed away, and 17 roads across Kendall County were closed due to flooding. Basement flooding was also reported (NOAA, 2008).

Flooding Issues

Kendall County, Unincorporated Areas

- Flooding and associated damages in the Blackberry Creek Watershed have increased over the past three decades. Significant flood damage has occurred during the storms of July 1983, July 1996, February 1997, and September 2008. The flooding event resulting from the storm of July 17–18, 1996 affected 1,000 homes and caused more than 13 million dollars in damage.

Village of Campton Hills

- During extended wet weather or major storms, extensive flooding occurs along Denker Road in the area of the Vestuto property. This flooding results in closure of Denker Road, affecting 750 vehicles per day. The adjacent property is also being flooded. Funds to correct this problem are not available.

Village of Elburn

- On the northwest side of Elburn, which is one of the oldest sections of town, there is a continuing problem of insufficient drainage for stormwater. The current system is easily overwhelmed during moderately heavy rain events. This problem is due primarily to the existing drainage channels that travel under the Union Pacific Railroad tracks.
- The Blackberry Creek Subdivision located south of Keslinger Road and east of Route 47 contains wetlands of considerable size. During very heavy rain events, this area can be taxed to the point of overflowing, threatening homes at the far south end of the Blackberry Creek Subdivision.

Mitigation Actions

To help mitigate flooding, a dam was built during the initial construction phase of the Blackberry Creek Subdivision. The water height is monitored by an electronic flood gage to allow for accurate monitoring of potential flooding. At this time, however, the flood gage is malfunctioning and needs to be replaced.

Village of Montgomery

- There is a recurrent flooding problem in the Parkview Estates neighborhood in Montgomery from Waubensee Creek.
- The Montgomery Overflow of Blackberry Creek conveys floodwater from Blackberry Creek to the Fox River in large flooding events. In normal conditions, the area is drained by a 12-inch agricultural drain tile, which is currently in disrepair. There is standing water through much of the overflow route.

Mitigation Actions

The village proposes to replace the drain tile and restore drainage to the area allowing the soils to drain. The village would also like to install a flood warning station to warn of rising floodwater and allow the evacuation of residents when necessary. The warning station would include a monitoring station and a SCADA (radio control) system to transmit data to the village emergency responders.

Village of South Elgin

- Within the Village of South Elgin, the area in and near the Renee Detention Pond floods during large rain events.

Mitigation Actions

The village will install a 36-inch storm sewer on Kane Street to carry the stormwater from the Kane Street Detention Pond straight to the Fox River thereby avoiding the nearby neighborhood. The village would also like to improve the response time for sandbagging operations and increase the overall sandbagging effort for the residents. The village has identified a need to purchase a four-chute sandbagging machine to address this issue.

City of Yorkville

- During the May 13–14, 2004 storm, there was flooding in Fox Lawn Subdivision and along Poplar Drive, south of Fox Road. Fox Road was overtopped, and the culvert at that location may be undersized (Wywrot, June 30, 2004).

LaSalle County

Flooding History

Fox River at Dayton, Illinois – USGS Gage 05552500		
Period of Record 1915–2008		
Datum of Gage: 462.30 feet above NGVD29		
<i>Date</i>	<i>Peak Streamflow (cfs)</i>	<i>Flood Stage (feet)</i>
10/11/1954	47,100 ¹	24.63
07/19/1996	55,400 ²	24.47
09/14/2008	44,300 ¹	21.48
02/22/1997	41,200 ¹	21.46
02/13/1984	18,500 ^{1,3}	19.80 ⁴
03/19/1948	29,000 ¹	19.65
05/17/1974	26,800 ¹	18.59 ³

¹Discharge affected to unknown degree by regulation or diversion
²Discharge affected by dam failure
³Gage height not the maximum for the year
⁴Gage height affected by backwater

Source: USGS Surface-Water Data for Illinois at <http://waterdata.usgs.gov/il/nwis/sw>

September 2008 Event: Flash flooding or significant flooding occurred across much of LaSalle County, with street closure, basement flooding, and creek, stream, and river flooding reported. Numerous houses were under water in the northwest and southwest areas of Sheridan, which is near the Fox River. Several evacuations were conducted (NOAA, 2008).

In Ottawa, massive obstruction of the Illinois and Michigan Canal aqueduct was caused by flooding, with an estimated 30 percent obstruction to flow of the Fox River at this point. The water on the Fox River was inches from pushing against the support beams of the Main Street Bridge. The Illinois River crested about six inches above the Base Flood Elevation (BFE). The river water surface was just beginning to flow over the top of the berm protecting Ottawa's wastewater treatment plant when it crested and receded. Water began to trickle through the grass about 0.25 inches deep across the top of the berm at several locations along its entire length.

Flooding Issues

LaSalle County, Unincorporated Areas

- There are approximately 50 residences in the floodplain/floodway (the majority of the structures are in the Wedron and Sheridan area along the Fox River).

City of Ottawa (Mike Sutfin, FAP, 2010)

- Ottawa is separated into three sections by the Illinois and Fox Rivers. The residential neighborhood north of the Illinois River and east of the Fox is called the "East Side" of Ottawa. The East Side only has two access roads: the Main Street Bridge over the Fox River to the west, and Green Street to the east. During heavy flooding events, Green Street becomes inundated, leaving Main Street as the only means of ingress/egress for this entire section of town. Water levels rising to the level of the new DFIRMS would set the BFE approximately 1.5 feet higher than the 2008 flood, the Main Street Bridge would

be closed, and the East Side would become surrounded by water and isolated from emergency vehicles and access to necessities.

- In 1999, a levee was constructed by the U.S. Army Corps of Engineers around the Ottawa Township High School at the confluence of the Fox and Illinois Rivers. The levee surrounds the high school on the Illinois side and continues past the Main Street Bridge on the Fox River side. Following an extensive flow study raising the BFE approximately 1.5 feet on the Illinois River, the school board was notified by FEMA in June 2009 that the levee would lose its accreditation and no longer be considered protective of a critical facility. Since FEMA funding cannot be used for a structure constructed by another federal agency, in this case the Army Corps of Engineers, the USACE advised that a topographic survey be undertaken to determine finished elevations. The elevation of the Illinois levee was determined to be 7 inches short of the required elevation in one area just south of the Main Street Bridge.
- A second portion of this levee called the “Fox River levee” north of the Main Street Bridge was purposely built lower on the Fox River side than on the Illinois River side. At the time of construction, there were many residential buildings in an upstream area known as “the Flats.” At that time, it was determined by modeling that a higher elevation of the Fox River levee may have an adverse impact on this area.
- Downstream from the Flats about 300 feet, the city’s River Walk parallels the Fox River. The River Walk was constructed utilizing Illinois Department of Natural Resources (IDNR) grant funds. It connects downtown Ottawa to the I & M Canal towpath, which is a part of the Grand Illinois Trail and American Discovery Trail. Between the I & M Canal path and downtown, the city has developed Fox River Park also with the use of IDNR grant funds. This is at the final bend in the river and the recent flood events have caused serious scouring of the bank. Erosion is within a few feet of the River Walk and, if left unchecked, the River Walk will be in danger of falling into the river.
- Sizeable sandbars are developing upstream and downstream of a massive obstruction of the I & M Canal aqueduct (likely a consequence of flooding and debris accumulation during the 2007 flooding), and ice jams are a major concern. Increased flooding as a result of these conditions would affect the Flats, the YMCA, and the Ottawa Regional Hospital, a critical facility that must be protected during flood events and considered as part of flood planning. A hydrologic and hydraulic study of Goose Creek in the vicinity of the hospital was done in 1999 and was provided during the Discovery process.
- On several occasions over the past 25 years the Fox River has had major ice jam events. One such event destroyed the Dayton Road Bridge just downstream from the Dayton hydro-plant. In January 2010, a major freeze of the Fox River extended approximately 5.1 miles from the mouth to the Dayton hydro-plant and had a thickness of over 20 feet in places. Break up of these ice events has caused major damage to the Fox River shoreline in Ottawa, houses along the river, boat docks and launch areas, and other structures including bridge abutments. Additionally, several instances of flash flooding have occurred as a result of the ice jam.
- Ottawa’s wastewater treatment plant, which may be considered a critical facility, is no longer adequately protected.
- The Central School now sits as an abandoned and contaminated Brownfields building on a potentially contaminated site in the floodplain. It presents a potential hazard to the public.

Mitigation Actions

River modeling has been completed and a permit received from the IDNR to construct the wall on top of the berm surrounding Ottawa's wastewater treatment plant.

A hydraulic analysis for the potential elevation of Green Street has been completed.

The city is looking for funding to obtain the Central School property, demolish the building, address the environmental concerns, and preserve the site as public use space.

The Floodplain Management Committee is actively working to stabilize about 900 feet of riverbank in the River Walk area and is seeking funding.

Mitigation Success

The Fox River and the Illinois River converge just south of the Flats and cause various flooding dynamics for Ottawa. Recent flooding events have been recorded in 1974, 1982, 1983, 1997, 2007, 2008 (record flood), and 2009. The city has acquired parcels from 36 different property owners in this area and demolished over 65 structures, including commercial buildings. As a result of this mitigation, the March 2009 flood resulted in almost no recorded damage (Cofoid, 2010).

The former Flats area is now Fox River Park, and a request for the purchase of eight of the remaining nine properties in this area was made in May 2009. It is believed that mitigating these properties will help dispel some concerns and allow for the Fox levee to be elevated without impact upstream. The Illinois Emergency Management Agency Local Hazard Mitigation Grant Program (HMGP) Assistance Agreement has been approved, with an execution date of December 31, 2012. Appraisals of the properties have been completed and forwarded to IEMA.

The next step in the process is for a hydraulic analysis to be performed on the Fox River to verify that there would be no unacceptable impacts of raising the Fox River levee. This Risk Assessment is currently under review by the USACE, Rock Island District.

Geospatial Analyses of Data

There are 561.6 stream miles with Special Flood Hazard Areas (SFHA) shown on FEMA DFIRMs in the Lower Fox HUC-8 Watershed. There are 26 miles of streams that were identified by the public to have engineering study needs but do not have SFHAs mapped on current DFIRMs. The stream miles with mapped SFHAs were determined from the Coordinated Needs Management System (CNMS) database. The National Hydrography Dataset was used to calculate those stream miles with community requests outside of a mapped SFHA.

There are a number of flooding issues in the Lower Fox Watershed. One method of identifying streams of concern is to perform a spatial analysis of the data to determine where there are combinations of potentially invalid engineering data, high risk, and community concerns. This was accomplished using the CNMS Phase III data, which compose a geospatial database of stream reaches attributed with an assessment of the engineering analyses as valid, unverified, or unknown. (This database is currently in draft form and not available to the public.)

While a HAZUS assessment might provide a general dollar value, data for at-risk structures are not available at this time. The FEMA National Flood Risk Analysis HUC Risk Data spatial data were used as a surrogate to provide relative risk ranking. It is a Census Block Group GIS layer that contains aggregated flood claims data along with ten weighted parameters used to compute relative national risk (1 to 10 with 1 being highest risk) by the Census Block Group. (This database must be requested from FEMA.) The Discovery comments feature classes were used to identify areas of known flooding issues.

A subset of stream segments was created by combining those stream segments identified as having engineering analyses that is unverified (CNMS unverified) and any stream segment where comments collected indicate that the SFHA mapping is inaccurate or inadequate. This subset of stream segments was then intersected with the HUC Risk Data and separated into two categories: high concern for those segments which flow through Census Block Groups with Risk Rankings between 1 and 5; medium concern for those segments which flow through Census Block Groups with Risk Rankings between 6 and 10. Stream segments outside the combined set were categorized as low concern. The results of this assessment are summarized by HUC-10 watersheds in Table 7. The stream names, floodplain zone, stream length, and category of concern are provided in the Excel file name StreamCategory_LowerFox.xlsx, which is attached.

The various stream categories are illustrated for the entire Lower Fox HUC8 watershed in Map 1. This illustration provides an overall picture of streams that warrant further evaluation of possible study needs.

Table 7. HUC-10 Watersheds

<i>HUC_10</i>	<i>HU_10_Name</i>	<i>High Concern (miles)</i>	<i>Medium Concern (miles)</i>	<i>Low Concern (miles)</i>	<i>Total (miles)</i>
712000701	Ferson Creek-Fox River	70.47	7.06	116.95	194.49
712000702	Blackberry Creek	11.83	0.00	62.96	74.8
712000703	Big Rock Creek	15.14	27.34	90.86	133.33
712000704	Somonauk Creek	6.37	5.35	27.50	39.22
712000705	Indian Creek	0.00	0.00	77.36	77.36
712000706	Roods Creek-Fox River	17.97	30.51	19.88	68.36

Discovery Map and Database

The spatial data collected and created through the Discovery process are stored in the *Discovery_07120007_LowerFox.mdb*. The data sources for the final Discovery Map are listed in Table 8. The geodatabase accompanies this report in digital format with metadata.

Discovery Maps show the information from the data sources listed with information collected from the watershed stakeholders during the Discovery process. The comments and data are collected in a feature class of the Discovery Database and illustrated using symbology on the Discovery Maps. The information includes overtopped roads, streams where the floodplain mapping is not correct or inadequate (community requests), and other categories of flood-related data and issues. In order to display the information at a readable scale that can be readily displayed, the information is presented by HUC-10 watershed in six Discovery Maps. The maps are located in the Maps section of this report. Table 9 provides the HUC-10 name and the Map numbers for each Discovery Map.

Table 8. Final Discovery Map Data Sources

<i>Data Layer</i>	<i>Description</i>	<i>Source</i>	<i>Online linkage</i>
CNMS status	Engineering study needs as defined by Phase 3 CNMS data	Region V CNMS inventory	N/A
Community boundaries	Location of community boundaries	Illinois Department of Revenue, 2007	http://www.revenue.state.il.us/
County boundaries	Location of county boundaries	USGS topographic maps	http://topomaps.usgs.gov/index.html
Dams	Location of dams	USACE - National Inventory of Dams	Accessed via HAZUS database http://www.fema.gov/plan/prevent/hazus/hz_overview.shtm
Federal land	Location of federally owned lands	National Atlas of the United States	http://www.nationalatlas.gov/mld/fedlanp.html
HUC-8, HUC-10 watershed boundaries	HUC-8, HUC-10 scale watershed boundaries	USGS National Hydrography Dataset	http://nhd.usgs.gov/data.html
Ice jams	Location of ice jams	USACE - Ice Jam Database	https://rsgis.crrel.usace.army.mil/icejam/
Letters of Map Change	Locations of Letters of Map Change (LOMCs)	FEMA Mapping Information Platform Database	N/A
Levees	Location of levees considered for accreditation status by FEMA	FEMA Midterm Levee Inventory	N/A

Table 8. Concluded

<i>Data Layer</i>	<i>Description</i>	<i>Source</i>	<i>Online linkage</i>
Major roads	Location of major roads	Illinois Department of Transportation, 2009	http://www.dot.state.il.us/gist2/select.html
Special Flood Hazard Areas	Location of Special Flood Hazard Areas	FEMA DFIRMS; ISWS	http://msc.fema.gov
Stream gages	Location of USGS real time streamflow gages	USGS	http://www.nationalatlas.gov/atlasftp.html#hydrogm

Table 9. HUC-10 Watersheds

<i>HUC_10</i>	<i>HUC_10_Name</i>	<i>Discovery Map with Community Comments</i>
712000701	Ferson Creek-Fox River	2
712000702	Blackberry Creek	3
712000703	Big Rock Creek	4
712000704	Somonauk Creek	5
712000705	Indian Creek	6
712000706	Roods Creek-Fox River	7

Mitigation Actions

At the Discovery and Action Discovery meetings, community stakeholders identified several locations in which mitigation projects could reduce the impacts of flooding. Topics of mitigation interest included levees, ice jams, roads that frequently flood, significant riverine erosion, at-risk essential facilities, streamflow constriction, and recent and/or future development. The following mitigation projects and needs were identified during the Discovery and Action Discovery meetings.

Table 10. Mitigation Projects

Community / County	Subject(s)	Mitigation Project Area / Need	Status	Comment Number
Aurora / Kane	Ice Jam	Ice jam occurrence at Illinois AU on Fox River	Identified	132A
Aurora / Kane	Study Update	Need study update of Waubensee Creek & tributaries for floodplain management purposes	Identified	132C
Batavia /St. Charles /Montgomery / Kane County / Ottawa / Sheridan /LaSalle County / Sheridan	Study Update / Depth & Velocity Grids	Downtown Batavia redevelopment- accurate Fox River study & depth/velocity grids would be powerful tools to communicate to the community. Fox River needs a new study. Stream bank erosion issues.	Identified	106;
Campton Hills / Kane	Study Need	Study for Mill Creek Tributary #2 (Zone A transitions to Zone AE) for floodplain management purposes	Identified	126
DeKalb County	Mapping Need	Depth Grids for Emergency Services Agencies	Identified	4
DeKalb County	Study Need	Zone A; LOMC cluster; Study needed for floodplain management purposes; Little Rock Creek	Identified	21
DeKalb County	Conservation Practices	CREP Easements and CRP Practices	Completed	9A
DeKalb County	Overtopped Road	Mitigate overtopping and freezing of water on Pritchard Road	Scoped	9C
DeKalb County	Overtopped Road	Mitigate overtopping of Chicago Road at Govern Beveridge Road - Somonauk Creek	Identified	9E
DeKalb County	Overtopped Road	Water overtops Perry Road at Battle Creek. Bridge. Being replaced in 2014.	In Progress	9E
Elburn / Kane	Restrictive Culvert	Culvert replacement needed from north side of Union Pacific Railroad to Welch Creek	Identified	149
Elburn / Kane	Development / Study Needs	Development near Pouley Run and Pouley Run North, tributaries of Blackberry Creek. Study Need.	Identified	147
Hinkley / DeKalb	Overtopped Road	Mitigate overtopping at Rumsnider & Duffy Road Intersection	Identified	6

Community / County	Subject(s)	Mitigation Project Area / Need	Status	Comment Number
Kane County	Repetitive Loss	Buyouts of three residences. Riverside Avenue, Elgin Township, Section 35. Camp Flint Drive, Dundee Township, Section 27.	Complete	131B
Kane County	Ice Jam	Ice Jam near Dundee. Trial IDNR ice jam boom project.	Complete	131D
Kane County	Overtopped Roads	Frequent flooding at Route 64 & 47	Identified	130L
Kendall County	Culvert Restriction	Engineering data is needed to determine replacement size for a restrictive culvert that causes overtopping of Wolf Road.	Identified	144A
Kendall County	Residential Flooding	Flooding in unincorporated Fox Lawn subdivision near Yorkville. Engineering study indicates that the culvert needs replaced.	Scoped	110C
LaSalle County	Overtopped Road	Mitigate overtopping of Route 23 at railroad crossing.	Identified	9D
LaSalle County	Ice Jam	New bridge County Highway 18 may reduce ice jam issue. Study may not be accurate	Complete	33E
LaSalle County	Ice Jam	Ayer's Landing / River Road Sulfer Springs; consistent flooding on the east side.	Identified	34
LaSalle County	Ice jam	Backwater created and LOMC cluster; Erosion; Limited access	Identified	35; 36
Montgomery / Kane	Study Need	Flooding in Montgomery from Blackberry Creek. Study should continue through Fox metro to Fox River.	Identified	127A
Montgomery / Kane	Stream Gage	Stream gage would be helpful for a flood warning system.	Identified	101
Montgomery / Kane / Kendall	Study Need	Fox River Tributary. No detailed flood study. Study needed in both Kane & Kendall County	Identified	101
Ottawa, LaSalle County	Repetitive Loss Properties	Flat's properties buyout	Complete April 2013	14
Ottawa, LaSalle County	Flood Wall	Engineering study needed for flood wall to protect the sewer treatment plant from flooding; IDNR permit;	Identified	22
Ottawa, LaSalle County	Buyout	Central School Buy-out	Complete	23
Ottawa, LaSalle County	Ice Jam	Major ice jam March 2014	Identified	8
Ottawa, LaSalle County	Stream Restriction	Surface debris build up upstream of the aqueduct and sand bars are created.	Identified	12
Ottawa, LaSalle County	Stream bank erosion	Stabilization project. No erosion from April 2013 flood.	In Progress	15
Ottawa, LaSalle County	Levee	Levee needed to protect the High School. IDNR Permit. Funding needed.	Scoped	13
Ottawa, LaSalle County	Flood Protection Project	Ottawa Regional Hospital Flood Protection & Mitigation Planning	Complete	25

Community / County	Subject(s)	Mitigation Project Area / Need	Status	Comment Number
Ottawa, LaSalle County	Street Elevation	Flow study complete. Vertical re-alignment with a series of box culverts or a bridge. Funding needed	Scoped	24
Ottawa, LaSalle County	Flood Threat Recognition	The City of Ottawa can partner with ISWS and AHPS to produce inundation mapping for the City of Ottawa to be able to warn citizens of flood threats, prepare for action earlier and be better equipped to fight flood events.	Identified	MAF
Ottawa, LaSalle County	Dam Failure / Critical Facility	Catastrophic Inundation Study for Dayton Hydro Dam for mapping and evacuation purposes in case of damage to the infrastructure of the dam or dam failure.	Identified	MAF
Ottawa, Sheridan, LaSalle County	Flooding and Ice Jams	Flooding and ice jams are getting worse from below Sheridan to the mouth in Ottawa. Sand mining operations may be contributing fill. Possible conveyance problem. Study needed.	Identified	Email 7/31/2014
St. Charles / Kane	Study Update	Need update of flood study for Ferson Creek / Otter Creek for floodplain management purposes	Identified	141
St. Charles / Kane	Increased Volumes	Flood study needed to extend the City of St. Charles latest approved flood study (Tyler Rd to Kirk) farther east due to increased volumes.	Identified	125
St. Charles / Kane	Restudy	Flood study of 7 th Avenue Creek performed by the City and approved by FEMA.	Completed	105B
St. Charles / Kane County	Severe Erosion	Norton Creek, near cross section (B-B) Panel 258 tributary creek has severe erosion & needs to be studied for mitigation strategies.	Identified	107
St. Charles / Montgomery / Kane County / Ottawa / Sheridan / LaSalle County /	Study Update	Fox River study update needed due to consistent residential flooding in areas not mapped within the floodplain, LOMC clusters, severe erosion, and fill.		107A; 127A;139B; 35; 42B, 34; 33E
St. Charles, Kane	Study Update	Area needs a restudy to determine mitigation strategies. Severe flooding in 2007, 2008, 2010	Identified	107A
Waterman / DeKalb	Overland Flow and Riverine Flooding	Mitigate residential flooding from fields and creek.	Scoped	10
Yorkville / Kane	Study	City of Yorkville has modeled Rob Roy Creek	Completed	108A
Yorkville / Kendall	Study Need	Un-named creek along Pavilion Road. Greater than 1 square mile drainage area - needs study.	Identified	122

Priority Community Mitigation Projects

Following the Discovery meetings, comments were reviewed and additional community outreach was conducted to help identify high priority community mitigation projects within the Lower Fox River watershed area. The high priority mitigation projects are described in the following narratives.

Fox River – City of Ottawa, LaSalle County

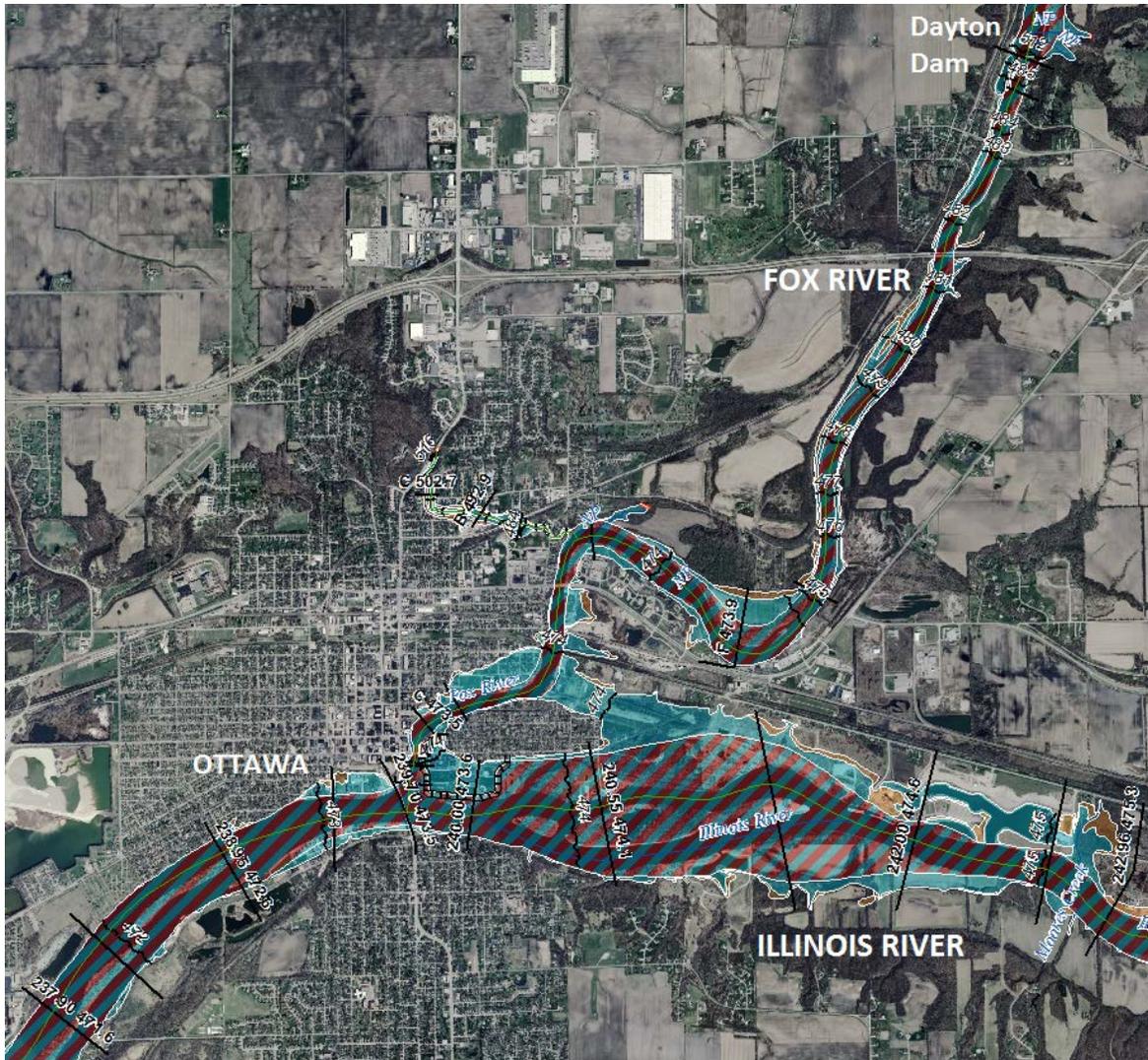
The City of Ottawa, at the confluence of the Illinois River and the Fox River in central LaSalle County, experiences flooding due to backwater effects of the Illinois River on the Fox River and headwater flooding from the Fox River.

The City of Ottawa's Flood Threat Recognition Plan relies on accurately identifying the anticipated areas of flooding. The reaches of the Illinois River and the Fox River within Ottawa are detailed studies with floodway and classified as valid within CNMS. The National Weather Service Advanced Hydrologic Prediction Service (NWS AHPS) identifies expected flood elevations with approximately 24 hours of advanced notice. Both the Illinois River at Ottawa and the Fox River at Dayton (just upstream of Ottawa) are AHPS forecast locations.

The City of Ottawa would like to partner with the Illinois State Water Survey (ISWS) and NWS AHPS to produce flood forecast inundation mapping for the City. The City of Ottawa has one foot contour equivalent LiDAR topography in GIS format from 2012 as well as GIS storm sewer network mapping to support the analysis. ISWS has reviewed the topographic data and determined it to be appropriate for flood forecast inundation mapping. With flood forecast inundation mapping from NWS AHPS, the community will know where the flood levels will affect the City and will be better able to warn citizens of flood threats, prepare for action earlier, and be better equipped to fight flood events.

The project would take approximately six months to implement. The City of Ottawa is offering to provide topographic data, GIS storm sewer data, and 2012 ortho-photography as leveraged data and cover the \$4,000 upload and web hosting fee, required by NWS AHPS, from the City's general funds. Hydraulic and hydrologic modeling would utilize the effective FEMA studies on the Illinois and Fox Rivers. ISWS would perform flood forecast inundation mapping, calibration, and data preparation of the hydraulic and hydrologic models and to produce the GIS inundation data to be hosted on the NWS AHPS site. No funds beyond the upload fee (covered by the City) are required by NWS AHPS, as the nearest gages are already NWS AHPS forecast locations.

The applicable reaches for flood forecast inundation mapping would include the Fox River from the confluence with the Illinois River to the Dayton Dam (approximately 5.5 miles upstream of the confluence), and from approximately river mile 237.9 to 242.96 on the Illinois River (approximately 5.0 miles). The identified reaches are important to the community because they include the sewage treatment plant, the regional hospital, the community high school, "the flats" (location of recent buyout activity), and access roads to the "East Side" which is isolated during large flood events.



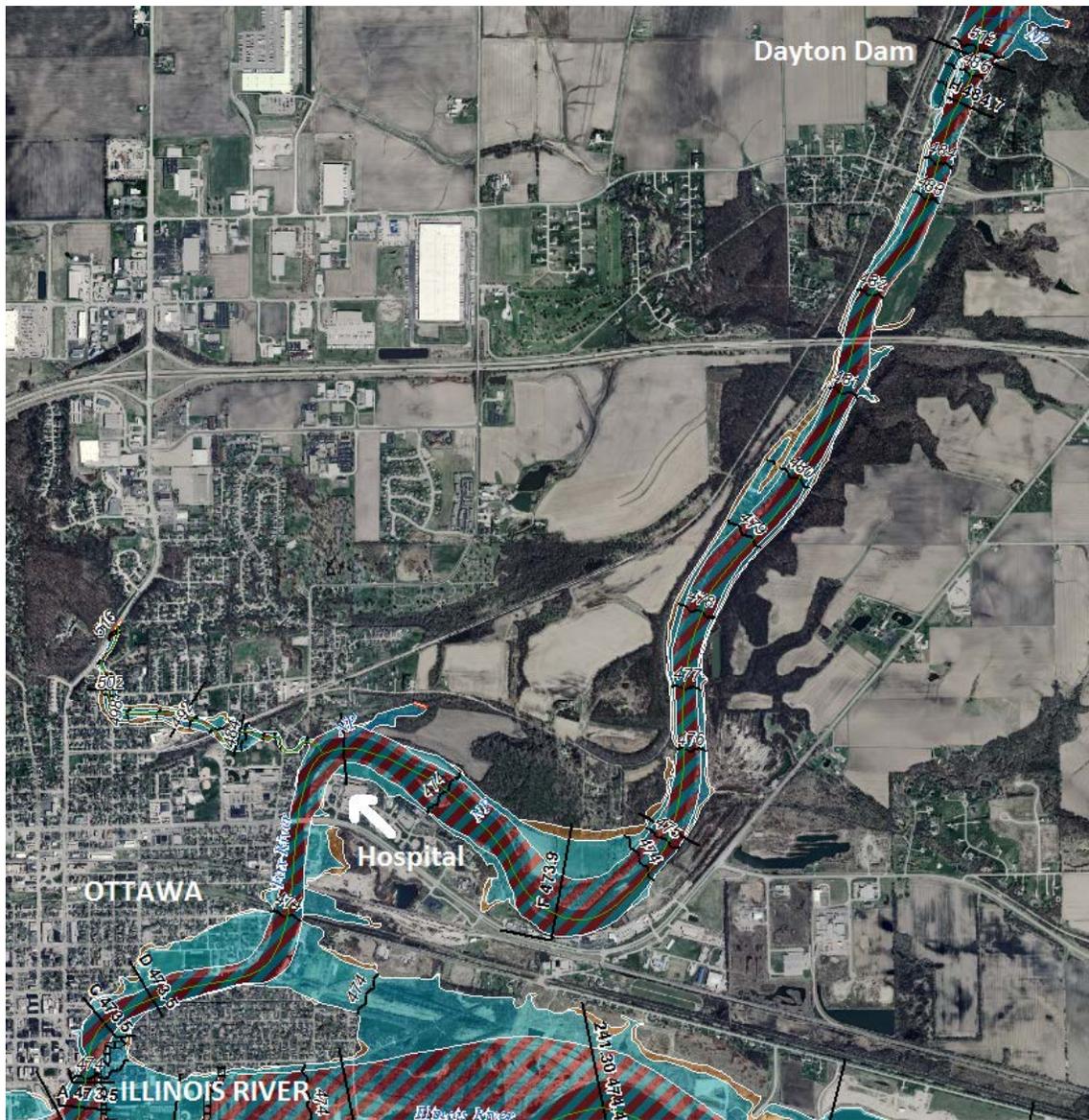
Fox River at the confluence with the Illinois River – City of Ottawa, LaSalle County

The inundated area includes approximately 70 structures and controls the access to an additional 250 homes during large events.

Dayton Dam Catastrophic Inundation Study – City of Ottawa, LaSalle County

The City of Ottawa, in central LaSalle County, lies approximately 3 miles downstream of Dayton Dam, a hydroelectric dam on the Fox River. The dam has a hydraulic height of approximately 23.5 feet and was built in 1925. According to the National Inventory of Dams, Dayton Dam has a maximum storage capacity of approximately 1,800 acre-ft. Due to low-lying areas in the City of Ottawa including OSF St. Elizabeth Medical Center, the community high school, and all access roads to the “East Side”, the City requests a Catastrophic Inundation Study for the Dayton Dam for mapping and evacuation purposes in case of damage to the infrastructure of the dam or dam failure.

The applicable reach would be the Fox River from the confluence with the Illinois River to the Dayton Dam (approximately 5.5 miles upstream of the confluence). The reach is a detailed study with floodway classified as valid within CNMS.



Dayton Dam Catastrophic Inundation Study – City of Ottawa, LaSalle County

Fox River Ice Jams – Aurora, Ottawa, Sheridan, LaSalle County, Kane County

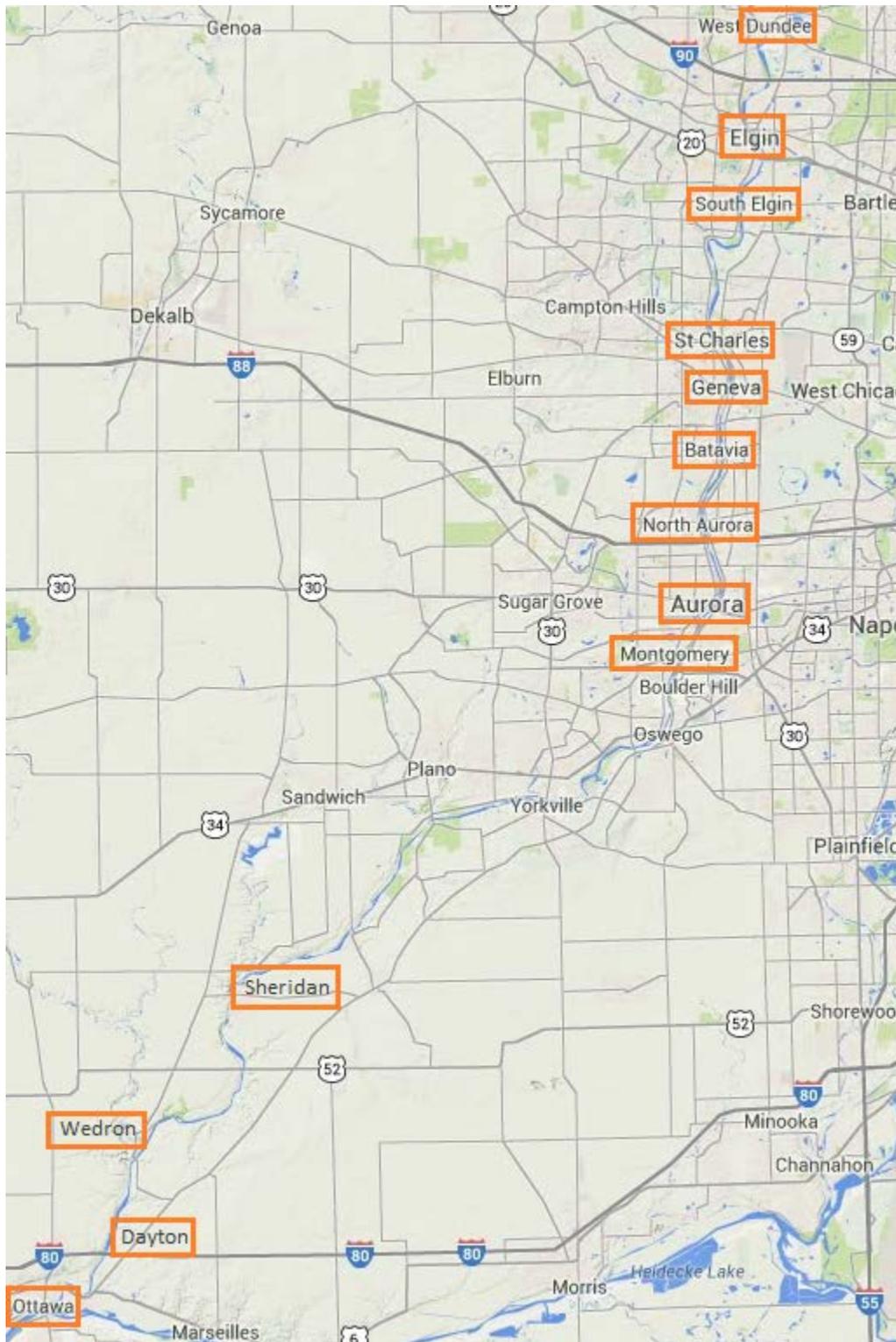
Ice jams and associated flooding at various times were reported at numerous locations along the Lower Fox River, with nine separate comments submitted at the Discovery and Action Discovery Meetings. The City of Aurora, Kane County, LaSalle County, the City of Ottawa, and the Village of Sheridan reported ice jams and ice jam flooding including within areas outside of the Special Flood Hazard Area that have experienced frequent flooding and locations experiencing limited access during ice jam events.

Specific reaches identified were the Lower Fox River from the confluence with the Illinois River to Sheridan, IL, (includes LaSalle County, Ottawa, Dayton, Wedron, and Sheridan) and the Fox River throughout Kane County (including Montgomery, Aurora, North Aurora, Batavia, Geneva, St. Charles, South Elgin, Elgin and Dundee).



Fox River Ice Jam- Provided by the City of Ottawa

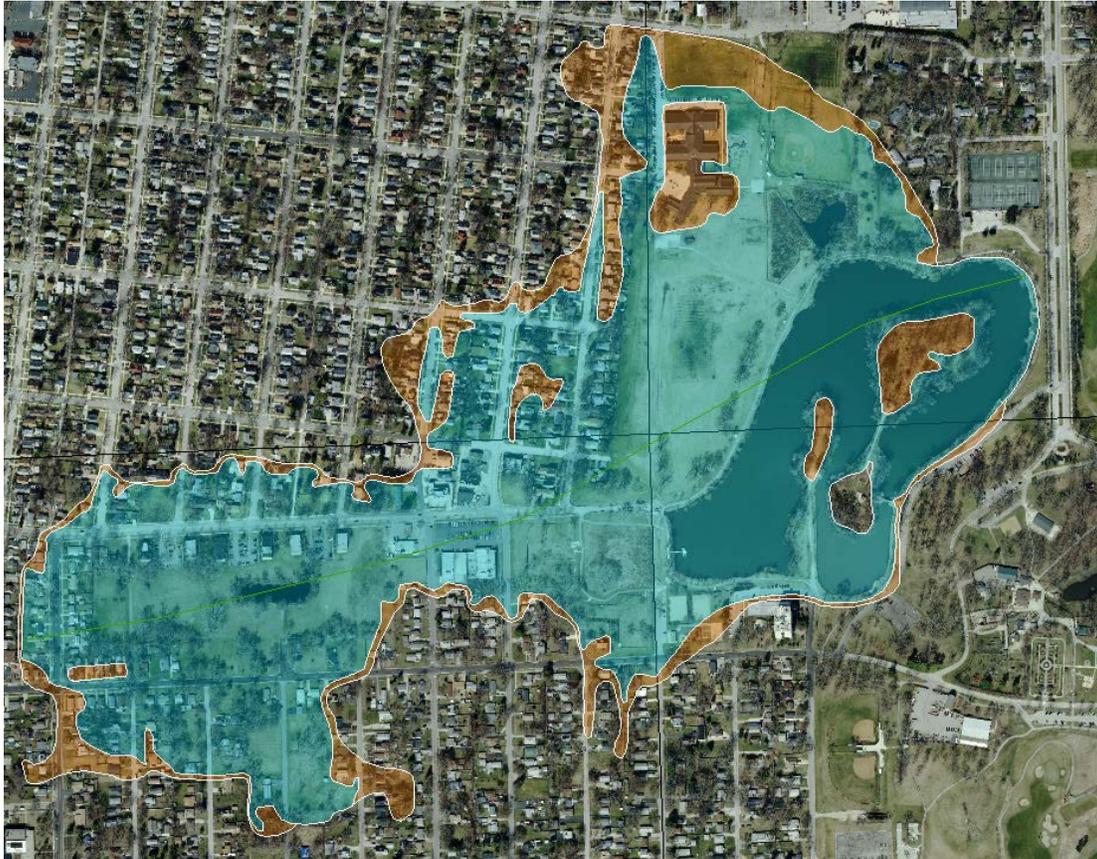
A comprehensive report on historical ice jam flooding could assist floodplain managers, communities, and FEMA in mitigating risks due to ice jams. A report detailing the location, extent, elevation, and frequency of historical ice jams with appropriate mapping products can be used as educational materials to help individuals and communities understand their flood risk and take mitigating actions. The report could also be used as a tool for floodplain administrators looking to enforce floodplain ordinances in known flood-prone areas outside of the Special Flood Hazard Area (requested by Ottawa, LaSalle County, and Sheridan), and to FEMA as a tool at a key decision point when considering whether ice jam analysis should be included in a future restudy of the Fox River (restudy requested by Ottawa, LaSalle County, Batavia, Millington, Kendall County, Norway). Information is available from communities, the USACE, the Cold Regions Research and Engineering Laboratory (CRREL), and IDOT.



Communities Reporting Ice Jam Flooding on the Lower Fox River during Discovery

Mastodon Lake and adjacent SFHA- City of Aurora

The South Park Subdivision, a residential area north of Montgomery Road and West of Hill Avenue in Aurora, was first constructed in 1930. The area is located in the floodplain adjacent to Mastodon Lake (an interior draining lake) and experiences first floor and basement flooding.



The proposed mitigation action would be to construct a storm sewer to provide positive drainage from the depressional area. The project is expected to protect thirty-eight low-to-moderate income homes and four roads from flood damage. Preliminary engineering has been completed, and the project is expected to cost \$1,100,000 and could be completed in 12-18 months. The cost could be covered by a combination of local contribution, Aurora Township, Kane County, and FEMA.

Reports on frequent flooding reveal events at least as early as the 1960's and continuing to present. A 1981 Flood Hazard Reconnaissance Study Report by the USDA found the natural depressional area to be drained by a 5,000 foot long, 18 inch pipe that was restrictive enough to cause large areas of flooding. The report indicated that some structures would be inundated during frequent (20% annual chance) events with average annual damages in 1981 estimated at \$40,000. The area was restudied for the March 3, 1997 City of Aurora FIS using NRCS TR-20. It is currently a Zone AE with Stillwater, listed as valid in CNMS. There is no floodway for this area on the effective mapping, and the available reports indicate that fill has increased the flooding depths in this area as storage volume has been reduced.

Fox River Tributary – City of Aurora

Single family homes constructed in the 1970's along Johnston and Lindenwood Drives south of Jericho Road in Aurora, IL are subject to first floor and basement flooding near a CNMS unverified Zone A floodplain from Fox River Tributary. The current tributary alignment is clearly outside of the mapped Zone A floodplain, as are a number of the homes experiencing first floor and basement flooding.



A flood study of the area and concept level engineering has been completed for a project to resculpt the topography on an adjacent 5-acre farm parcel to the east of Lindenwood Drive and create a detention storage for floodwaters that previously impacted the neighborhood. The project is expected to alleviate flooding for nine or more homes and two roads. The project is

expected to cost \$300,000 and take between 12 and 18 months. The cost could be covered by a combination of local contribution, Aurora Township, Kane County, and FEMA.

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Appendix A. Discovery Meetings

Four Discovery meetings were held. The dates, times, and locations are listed in Table A1. The list of attendees is provided in Table A2.

Table A1. Discovery Meetings

County	Date	Time	Location
DeKalb	Tuesday, November 9, 2010	2:00 - 4:00 pm	Center for Agriculture 1350 West Prairie Drive Sycamore, IL 60178
Kane	Wednesday, November 17, 2010	10:00 am - 12:00 pm	University of Illinois Extension Kane County Office 535 South Randall Road St Charles, IL
Kendall	Tuesday, November 16, 2010	1:00 - 3:00 pm	Kendall County Fairgrounds Education Building Rt. 71, 1 mile west of Rt. 47 Yorkville, IL
LaSalle	Wednesday, November 10, 2010	10:00 am - 12:00 pm	University of Illinois Extension LaSalle County Office 1689 N. 31st Road, Suite 2 Ottawa, IL

Table A2. Lower Fox Watershed Discovery Meeting Attendance

<i>First Name</i>	<i>Last Name</i>	<i>Job Title/ Organization</i>	<i>Address</i>	<i>Community/ State/Zip</i>	<i>Email</i>
Tim	Dusell	City of Aurora	44 East Downer Place	Aurora, IL 60506	tdusell@aurora-il.org
Fran	Caffee	Sierra Club	726 West Downer Place	Aurora, IL 60506	fran.caffee@gmail.com
Alena	Bartosova	ISWS	2204 Griffith Drive	Champaign, IL 60820	alena@illinois.edu
Will	Gillespie	ISWS	2204 Griffith Drive	Champaign, IL 60820	gwill06@illinois.edu
Jim	Urek	CDM	125 South Wacker Drive	Chicago, IL 60606	ureksf@cdm.com
Megan	Elberts	CHAM Chicago Metro Ag Planning	233 South Wacker Drive, Suite 800	Chicago, IL 60606-6415	melberts@cmap.illinois.gov
Deann	Cada	Program Manager	2600 DeKalb Avenue	DeKalb, IL 60115	deanna@dekalbccf.org
Andrea	Litewski	Community Initiatives Intern	2600 DeKalb Avenue	DeKalb, IL 60115	andrea@dekalbccf.org
Pat	Vary	County Board Member	138 Mattek	DeKalb, IL 60115	pvary@niu.edu
Rebecca	VonDrasek	Assistant Planner	110 East Sycamore Street	DeKalb, IL 60115	rvandrased@dekalbcounty.org
Cody	Wright	Red Cross Emergency Service	964 Arvie Circle	DeKalb, IL 60115	cody-wright87@yahoo.com
Dean	Johnson	DeKalb County SWCD	1350 West Prairie Drive	DeKalb, IL 60115	dean.johnson@il.nacdn.net
John	Nevenhoven	Village of Elburn	422 East North Street	Elburn, IL 60119	jnevenhoven@Elburn.IL.us
Karen	Kosky	Kane County	719 Batavia Avenue, Building A	Geneva, IL 60156	koskykaren@co.kane.il.us
Rich	Boris	Village President	P.O. Box 231	Lee, IL 60530	-
Mike	Pubentz	Village of Montgomery	890 Knell Road	Montgomery, IL 60538	pubentz@ci.montgomery.il.us
Jim J	Jenson	Village of Oswego	3525 Route 34	Oswego, IL 60343	jjensen@oswegopoliceil.org
Rich	Burton	Village of Sheridan Attorney	227 West Madison	Ottawa, IL 61350	
Mary	Kazmarek	Ottawa GIS	301 West Madison	Ottawa, IL 61350	gis@cityofottawa.org
Lawrence	Linzer	LaSalle County Engineer	P.O. Box 128	Ottawa, IL 61350	linzer@lasallemountainhighway.org
Dave	Noble	Ottawa City Engineer	301 West Madison	Ottawa, IL 61350	cityengineer@cityofottawa.org
Richard	Scott	LaSalle County Board, District 22	2767 East 1779th Road	Ottawa, IL 61350	

Table A2. Concluded

<i>First Name</i>	<i>Last Name</i>	<i>Job Title/ Organization</i>	<i>Address</i>	<i>Community/ State/Zip</i>	<i>Email</i>
Matt	Stafford	Supervisor of Field Operations	119 West Madison, Room 107	Ottawa, IL 61350	mstafford@lasallecounty.org
Mike	Sutfin	Building and Zoning Official	301 West Madison	Ottawa, IL 61350	buildingandzoning@cityofottawa.org
Reed	Wilson	Director of Economic Development	301 West Madison	Ottawa, IL 61350	ecdev@cityofottawa.org
Herman	Wisslead	USDA RD Director	1689 North 31st Road	Ottawa, IL 61350	
Arratta	Znaniiecki	LaSalle County Board	2532 East 1251st Road	Ottawa, IL 61350	aznaniiecki@hotmail.com
Scott	Cofoid	ISO, Inc.	1126 Schuyler Street	Peru, IL 61354	scofoid@iso.com
Nancy	Martin	Kendall County	14255 River Road	Plano, IL 60545	NDJM@aol.com
John	McGinnis	City Planner	17 East Main Street	Plano, IL 60545	planopublicworks@comcast.net
Chuck	Borchsenius	LaSalle County Board District 4	3654 N IL 71	Sheridan, IL 60551	
Greg	Chismark	WBK Associates	116 West Main Street	St. Charles, IL 60134	gchismark@wbkengineering.com
Brian	Herrmann	St. Charles	2 East Main Street	St. Charles, IL 60134	bherrmann@stcharlesil.gov
Candice	Jacobs	KDSWCD	2315 Dean Street, Suite 100	St. Charles, IL 60134	candice.jacobs@il.usda.gov
James	Bernahl	St. Charles	2 East Main Street	St. Charles, IL 60156	jbernahl@stcharlesil.gov
Herman	Bruns	LaSalle County Board	1522 Manhattan Drive	Streator, IL 61364	
Tim	Paulson	EEI	52 Wheeler Road	Sugar Grove, IL 60554	tpaulson@eeiweb.com
Donna	Prain	KREP	25179 Shannon Lane	Sycamore, IL 60178	dprain@niu.edu
Kevin	Collman	YBSD	304 River Street	Yorkville, IL 60560	kevin@YBSD.org
Les	Maierhofer	USDA - FSA	7775 A Rt. 47	Yorkville, IL 60560	les.maierhofer@il.usda.gov
Pete	Wallers	EEI	52 Wheeler Road	Yorkville, IL 60560	
Joe	Wywrot	Yorkville	800 Game Farm Road	Yorkville, IL 60560	jwywrot@yorkville.il.us
Angela	Zubko	Kendall County	111 West Fox Street	Yorkville, IL 60560	azubko@co.kendall.il.us

Appendix B. Summary of Discovery Meeting Comments

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/16/2010	Proposed flood mitigation project	DeKalb County	DeKalb		Not mapped. Very interested in the flood grids and water depth layers. (Depth Grid) Percent annual danger of flood grid. The DeKalb County comment foundation is committed to providing tools and resources to municipality officials to make good land use decisions. The layers would be a great educational tool.	Risk MAP product request
11/9/2010	Proposed flood mitigation project	DeKalb County	DeKalb		Many emergency services, departments, and agencies would benefit from depth grid analysis and velocity analysis to better serve their communities	Risk MAP product request
11/9/2010	Known flooding issue	Hinckley	DeKalb		Property owner filled-elevation may be incorrect. Floodplain may not represent current flooding	If fill placed without LOMR-F approved then potential violation. Report to NFIP Coordinator.
11/9/2010	Known flooding issue	Hinckley	DeKalb		At Rumsnider and Duffy Road crossroad, water over road caused wreck	Updated Discovery Map
11/9/2010	Proposed flood mitigation project	DeKalb County	DeKalb		The depth grid was very helpful. DeKalb County is in the process of stormwater management. We have 2-foot contours, a layered GIS on our website – 2009 aerial photography accessible now. We have some FEMA data. FEMA needs our 2-foot contours. Phase 1 – update stormwater plan – done. Phase 2 – 2-foot contours – done; ID wetlands and floodplains – doing; ID areas for mitigation – watershed approach. Phase 3 – money to act – start mitigation.	Risk MAP product request
11/10/2010	Known flooding issue	Ottawa	LaSalle		Ice jam, detail by email	Note local confirmation of reported ice jam
11/10/2010	Other		DeKalb		CREP Easements and CRP practices	Noted
11/10/2010	Other		DeKalb		Subdivision - City of Sandwich near Waterman	Added to Study Needs database (CNMS)

Appendix B. Continued

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/10/2010	Known flooding issue		DeKalb		Water overtops Pritchard Road	Updated Discovery Map
11/10/2010	Known flooding issue		DeKalb		Water floods Rt. 23 at railroad	Outside watershed
11/10/2010	Other		DeKalb		Somonauk Creek study shows large areas of lodging of trees in creek	Noted
11/9/2010	Known flooding issue	Waterman	DeKalb		Homes receive floodwater from fields/creek	Added to Study Needs database (CNMS)
11/10/2010	Proposed flood study	Ottawa	LaSalle		LOMC, detail by email	Community contact initiated
11/10/2010	Known flooding issue	Ottawa	LaSalle		Aqueduct, detail by email	Community contact initiated
11/10/2010	Other	Ottawa	LaSalle		High school levee, detail by email	Community contact initiated
11/10/2010	Current flood mitigation project	Ottawa	LaSalle		Flats buy-out, detail by email	Updated Discovery Map
11/10/2010	Known flooding issue	Ottawa	LaSalle		Fox River stream bank erosion, detail by email	Updated Discovery Map
11/9/2010	Current development	Waterman	DeKalb		Area has become developed	Updated Discovery Map
11/9/2010	Current development	Maple Park	DeKalb/ Kane	East Branch South Branch Kishwaukee River, Union Ditch No 1. (not Fox River Watershed)	Currently Zone A with tremendous development. Multi-County - DeKalb/Kane Counties. Kishwaukee watershed in Union Ditch with Virgil Ditch sub watersheds	Added to Study Needs database (CNMS)

Appendix B. Continued

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/9/2010	Known flooding issue, Other: LOMC's lots		DeKalb	Little Rock Creek	Possible LOMC cluster; Zone A; 100 year ago, farmer sold land that flooded and someone built houses	Added to Study Needs database (CNMS)
11/10/2010	Current flood mitigation project	Ottawa	LaSalle		Sewer treatment plant flood wall, detail by email	Updated Discovery Map
11/10/2010	Current flood mitigation project	Ottawa	LaSalle		Central School buy-out, detail by email	Updated Discovery Map
11/10/2010	Proposed flood mitigation project	Ottawa	LaSalle		Green Street Elevation, detail by email	Updated Discovery Map
11/10/2010	Proposed flood mitigation project	Ottawa	LaSalle		Ottawa Regional Hospital flood protection and mitigation planning, detail by email	Updated Discovery Map
11/10/2010	Known flooding issue	LaSalle County	LaSalle		Ice jams do occur. New bridge County Highway 18 (North 31st), which may reduce ice jam issue. Question if current 100-year levels accurate; damage outside of mapped floodplain; did not qualify for severe repetitive loss 11_9_10_2DM	Added to Study Needs database (CNMS)
11/10/2010	Known flooding issue	LaSalle County	LaSalle		Ayer's Landing/River Road/Sulfer Springs and other areas have flooding from ice jams. Houses on East side are not in floodplain but consistently flood. "Always happens" -Matt 11_9_10_2DM	Added to Study Needs database (CNMS)
11/10/2010	Proposed flood study	LaSalle County	LaSalle		Area of concern - West of County is in floodplain. East is not on the map, but many homes built in the area experience water issues/events. Ice jam area, backwater created and LOMC cluster, homes nearly taken out, erosion, limited access, emergency services issue: Need Study 11_9_10_2DM	Added to Study Needs database (CNMS)
11/10/2010	Known flooding issue	LaSalle County	LaSalle		Ice jam area, backwater created and LOMC cluster, homes nearly taken out, erosion, limited access, emergency services issue	Updated Discovery Map

Appendix B. Continued

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/10/2010		Ottawa	LaSalle		None	No action, just contact information
11/10/2010	Known flooding issue	Sheridan	LaSalle		Repetitive loss	Added to Study Needs database (CNMS) and updated Discovery Map
11/10/2010	Known flooding issue	Sheridan	LaSalle	Tributary confluence with Fox River	Repetitive loss, County Highway 3, flood road north of Bridge	Updated Discovery Map
11/10/2010	Known flooding issue	Sheridan	LaSalle		Repetitive loss, see panel 405: Thompson Creek	Updated Discovery Map
11/10/2010	Current development	Sheridan	LaSalle	Fox River	Development area	Added to Study Needs database (CNMS) and updated Discovery Map
11/10/2010	Known flooding issue	Sheridan	LaSalle		Repetitive flood area	Added to Study Needs database (CNMS), and updated Discovery Map
11/10/2010	Current development	Sheridan (Norway)	LaSalle	Fox River	New development	Added to Study Needs database (CNMS), and updated Discovery Map
11/10/2010	Known flooding issue	Sheridan	LaSalle	Fox River	Development with water runoff	Added to Study Needs database (CNMS) and updated Discovery Map
11/10/2010	Known flooding issues	(Norway) Sheridan	LaSalle	Fox River	Stream bank issues	Updated Discovery Map

Appendix B. Continued

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/16/2010	Proposed flood study, Other: Flood warning	Montgomery	Kane, Kendall		No detailed flood study, Qs [discharge] developed using regression Eqs -needs re-study in both Kane and Kendall County. Flood Stage-Gage Station at Montgomery would be helpful for establishing a flood warning system. Parkview Estates has "partial" flood protection from 1975 levee system- once overtopped properties; floods quickly!	Updated Discovery Map
11/16/2010	Other	Montgomery	Kendall		Check with Fox Metro Sanitation to see if this area floods	Updated Discovery Map
11/17/2010	Proposed flood study	St. Charles	Kane		City is currently working with FEMA to remodel 7th Avenue Creek Tributary. City performed FIS (flood study) in 09/10 and FEMA has approved it. It is recommended that the tributary stream (7th Avenue Creek Tributary) be extended farther north.	Added to Study Needs database (CNMS)
11/17/2010	Proposed flood study; Proposed development	Batavia	Kane		Downtown Batavia is considering redevelopment. An accurate Fox River study and depth/velocity grids would be powerful tools to communicate to the community.	Added to Study Needs database (CNMS); request for Risk MAP products
11/17/2010	Proposed flood study	St. Charles	Kane	State Street Creek (Zone AE)	Needs to be remodeled. Severe flooding in 2007, 2008, 2010	Added to Study Needs database (CNMS) and updated Discovery Map
11/17/2010	Proposed flood study	St. Charles	Kane	Norton Creek, unnamed tributary, unmapped SFHA	Norton Creek, near cross section (B-B) Panel 258 tributary creek has severe erosion and needs to be modeled/FIS. This area has many interlocking parts that had severe sediment intake in 2007, 2008, and 2010 rain events.	Added to Study Needs database (CNMS) and updated Discovery Map
11/17/2010	Proposed flood study	Yorkville	Kane		108A-City of Yorkville has modeled Rob Roy Creek and produced floodplain maps.	Community contact initiated

Appendix B. Continued

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/16/2010	Known flooding issue	Kendall County	Kendall		Flooding issues occur in the unincorporated Fox Lawn subdivision (near Yorkville) located near an un-named creek. A storm in 2004 flooded this area. The most significant flooding occurs just south of Fox Road (indicated by the arrow on the print). Fox Lawn aerial photo and drainage report were attached. Noted that Fran Klaas, the Kendall County highway engineer, may have more information on drainage in this area.	Added to Study Needs database (CNMS)
11/16/2010	Other	Kendall County	Kendall		Heavily traveled road	Noted
11/16/2010	Current development	Kendall County	Kendall		Willow Springs/Black Hawk Springs - new development	Updated Discovery Map
11/16/2010	Known flooding issue	Oswego	Kendall		Long existing creek starts at approximately Monroe Street and runs down to the Fox River. Creek located between Vanburen and Tyler. This creek flooded during 100-year flood and has houses up and down.	
11/17/2010	Current development	Elburn	Kane	Elburn Run (Zone AE)	Under development	Updated Discovery Map
11/16/2010	Proposed flood study	Yorkville	Kendall	Rob Roy	Rob Roy Creek needs to be shown on FEMA maps! City of Yorkville hired EEI to perform flood study. Study is nearly complete-Community using as best available data.	Community contact initiated
11/16/2010	Other	Yorkville	Kendall	Blackberry Creek	Proposed removal of Blackberry Creek dam. This is a USACE, Rock Island project.	Community contact initiated
11/16/2010	Proposed flood study	Yorkville	Kendall	Unnamed creek	Unnamed creek along Pavilion Rd. >1 square mile drainage area - needs study	Added to Study Needs database (CNMS)
11/16/2010	Other	Yorkville	Kendall	Blackberry Creek	Discovery map shows ice jam location on Blackberry Creek just west of Rt. 47. We are unaware of this being a problem location.	Noted
11/17/2010	Current development	Elburn	Kane		Area currently being developed	Updated Discovery Map
11/17/2010	Proposed flood study	St. Charles	Kane	7th Ave Creek	Recommend performing flood study to extend the City of St. Charles latest approved flood study (Tyler Road to Kirk) farther east due to increased volumes.	Added to Study Needs database (CNMS)

Appendix B. Continued

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/17/2010	Current development	Campton Hills	Kane	Mill Creek Tributary #2 (Zone A transitions to Zone AE)	Flood profile development for VOV-numbered "A" Zone - tributaries to Mill Creek	Added to Study Needs database (CNMS)
11/16/2010	Known flooding issue	Montgomery	Kane	Blackberry Creek	Area of known flooding-part of the Montgomery overflow of Blackberry creek. See panel: Kane panel 401 - flood path shown See panel: Kendall - 51 and 53 Flood plain should continue through Fox metro to Fox River	Added to Study Needs database (CNMS)
11/16/2010	Proposed development	Plano	Kendall	East Branch Little Rock Creek	Panel 10 of 225. East Branch Little Rock Creek. There is proposed development upstream of section H-H	Updated Discovery Map and added to Study Needs database (CNMS)
11/16/2010	Other	Plano	Kendall	Mill Creek	Panel 20 of 225 - He did not believe that the homes along Mill Creek Road had any flooding in 1996	Noted
11/18/2010	Current flood mitigation project	Kane, DuPage, Soil and Water Conservation District (SWCD)	Kane, DuPage		Community has open acquisition	Updated Discovery Map
11/18/2010	Other	Kane, DuPage, SWCD	Kane, DuPage		Compton Hills is now community just annexed	Updated Discovery Map
11/18/2010	Current flood mitigation project	Kane, DuPage, SWCD	Kane, DuPage		Stearns Road Bridge mitigation project	Updated Discovery Map
11/18/2010	Proposed development	Kane, DuPage, SWCD	Kane, DuPage		Large proposed development	Updated Discovery Map
11/18/2010	Current development	Kane, DuPage, SWCD	Kane, DuPage		Norton Lake Subdivision	Updated Discovery Map
11/18/2010	Other	Kane, DuPage, SWCD	Kane, DuPage		Fox Mill/Waso sanitary district	Noted
11/18/2010	Proposed flood study	Kane, DuPage, SWCD	Kane, DuPage	Big Rock Creek	Requested updated engineering (CUIUA replacement on Big Rock Creek)	Noted

Appendix B. Continued

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/18/2010	Proposed development	Kane, DuPage, SWCD	Kane, DuPage		Proposed development subdivision In Montgomery	Updated Discovery Map
11/18/2010	Other	Kane, DuPage, SWCD	Kane, DuPage	Fox River	Yorkville Dam on the Fox River	Added to Study Needs database (CNMS)
11/18/2010	Current flood mitigation project	Kane, DuPage, SWCD	Kane, DuPage		Blackberry Creek headwaters open space	Updated Discovery Map
11/18/2010	Other	Kane, DuPage, SWCD	Kane, DuPage		Nelson Lake Extension of F.P. 330 acres	Noted
11/18/2010	Known flooding issue	Kane, DuPage, SWCD	Kane, DuPage		Frequent flooding Rt. 64 and 47	Updated Discovery Map
11/18/2010	Proposed development	Kane, DuPage, SWCD	Kane, DuPage		Proposed development (subdivision)	Updated Discovery Map
11/16/2010	Other	Kane County	Kane	Indian and Selmarten Creeks	Additional letters of map change will come through for residences on Indian/Selmarten Creeks	Community contact initiated
11/16/2010	Current flood mitigation project	Kane County	Kane		Three buy-outs recently completed	Updated Discovery Map
11/16/2010	Proposed flood study	Kane County	Kane	Mill Creek	Proposed annexation of property along Randall Road-could use updated engineering data	Added to Study Needs database (CNMS)
11/16/2010	Known flooding issue	Kane County	Kane	Fox River	Ice jam near Dundee - caused by channel configuration, bridge abutments, IDNR did trial of ice jam booms but have since concluded the trial	Note local confirmation of reported ice jam
11/16/2010	Other	Kane County	Kane	Ferson-Otter Creek	Low-head dams removed on Ferson-Otter Creek	Added to Study Needs database (CNMS)
11/16/2010	Other	Kane County	Kane		Some data available through ISWS for Big Rock/Welch Creek and tributaries	Noted
11/16/2010	Other	Kane County	Kane	Brewster Creek	Brewster Creek dam removal-data available through USGS	Added to Study Needs database (CNMS)

Appendix B. Continued

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/17/2010	Proposed flood study	Aurora	Kane		Question recent status of Blackberry Creek survey	Added to Study Needs database (CNMS)
11/17/2010	Proposed flood study	Aurora	Kane	Wabaunsee Creek	Update study of Wabaunsee Creek and tributaries	
11/17/2010	Other	Aurora	Kane	Rob Roy Creek	Identify Rob Roy Creek	Updated Discovery Map
11/17/2010	Other	Aurora	Kane	Blackberry Creek	Blackberry Creek dam at Fox River in Yorkville	Noted
11/17/2010	Known flooding issue	Aurora	Kane	Fox River	Ice jam occurrence Illinois AU on Fox River	Updated Discovery Map
11/16/2010	Other	Yorkville	Kendall	Fox River	Possibility of stage gage installation Yorkville/Bristol water treatment plant but needs cost share from USGS	Noted
11/16/2010	Known flooding issue	Kendall County	Kendall	Fox River	Willow Springs/Black Hawk Springs - Properties are in the floodplains that do not flood. They were not on the map before new maps.	Noted
11/16/2010	Proposed flood study	Kendall County	Kendall	Fox River	Needs updated engineering study	Added to Study Needs database (CNMS)
11/16/2010	Known flooding issue	Kendall County	Kendall	Fox River	Repetitive loss property flooding	Updated Discovery Map
11/16/2010	Known flooding issue	Kendall County	Kendall	Fox River	Farnsworth House is a repetitive loss property	Updated Discovery Map
11/17/2010	Proposed flood study	St. Charles	Kane	Ferson-Otter Creek	Need update of flood study for Ferson Creek/Otter Creek. City benchmark data and zoning map available at city website www.stcharlesil.gov . Separate comment on same Discovery Map different location - New flood study performed in 2009/10. St. Charles is working with FEMA. Another separate comment (same Discovery Map) - Prioritize flood study for Norton Creek.	Added to Study Needs database (CNMS)

Appendix B. Concluded

<i>Date</i>	<i>Comment Type</i>	<i>Community</i>	<i>County</i>	<i>Flooding Source</i>	<i>Comment</i>	<i>Response</i>
11/16/2010	Known flooding issue	Montgomery/Oswego	Kane/Kendall		Adjacent farm field half in Kane County and half in Kendall County that has a For Sale sign for condos. The Discovery Map shows this area as a lake.	Noted
11/16/2010	Known flooding issue	Montgomery/Oswego	Kane/Kendall		A FEMA purchased area of destroyed homes from 1996 flood	Updated Discovery Map
11/16/2010	Known flooding Issue	Oswego	Kendall		Hudson Crossing Park at the corner of Rt. 34 (Washington) and Harrison floods every year.	Added to Study Needs database (CNMS)
11/16/2010	Known flooding issue	Kendall County	Kendall		Culvert is too small and causes water to come up over the roadway (Wolf Road). Needs engineering data. 11_16-17_2_DM	Updated Discovery Map
11/17/2010	Proposed development	Elburn	Kane	Pouley Run and Pouley Run North (Blackberry Creek tributaries)	Developer is currently working on a proposal for residential development in this area	Updated Discovery Map
11/17/2010	Other	Kane County	Kane	Pouley Run and Pouley Run North (Blackberry Creek tributaries)	Kane County is proposing a two-lane road with the potential for a four-lane right of way	Updated Discovery Map
11/17/2010	Known flooding issue	Elburn	Kane	Welch Creek	Insufficient capacity to carry stormwater from north side of Union Pacific Railroad to Welch Creek. Stormwater pipe is too small (6") to carry enough water during significant rain events.	Updated Discovery Map

Appendix C. Summary of Community Data Identified

<i>Type</i>	<i>Description</i>	<i>Location / Extent</i>	<i>File Format</i>
Base map	Stream centerline	DeKalb County	GIS layer
Base map	Orthophotography, 2005, 2006, 2007, 2009, 2010	DeKalb County	GIS layer
Base map	Aerial photos, 1985–2003	DeKalb County	Assume raster
Base map	Topography, 2-foot and 10-foot contours	DeKalb County	GIS layer
Base map	County, township, municipal boundaries	Kane County	GIS layer
Base map	Topography, 2-foot contours semi-annually	Kane County	GIS layer
Base map	Zoning and assessors data	Kane County	GIS layer
Base map	Municipal boundaries, roads, and stream centerline	Ottawa, City of; LaSalle County	GIS layer
Base map	Orthophotography, 2006	Ottawa, City of; LaSalle County	GIS layer
Base map	Assessor's data	Ottawa, City of; LaSalle County	unknown
Base map	Zoning plan map, January 5, 2010	Ottawa, City of; LaSalle County	PDF received (GIS layer from website)
Base map	Land use maps	Ottawa, City of; LaSalle County	GIS layer
Base map	Orthophotography, 2006	LaSalle County	Assume GIS raster
Base map	2-foot contour maps nearly complete	LaSalle County	Assume GIS vector
Base map	Assessor's data, land use and zoning	LaSalle County	GIS layer
Base map	Dams on Fox River	Fox River	Shapefile
Engineering	Soil surveys, soil maps, hydric soil layer	DeKalb County	GIS layer

Appendix C. Concluded

<i>Type</i>	<i>Description</i>	<i>Location / Extent</i>	<i>File Format</i>
Engineering	New bridge as-builts	Kane County	Unknown
Engineering	7th Avenue Creek Flood Insurance Study Extension, by Wills Burke Kelsey Assoc., August 13, 2009	St. Charles, City of; Kane County	PDF
Engineering	Goose Creek hydrologic and hydraulic study, 1999	Ottawa, City of; LaSalle County	PDF
Engineering	Subdivision and rivers	LaSalle County	Unknown
Engineering	Subdivision drainage plans, 1990- present	LaSalle County	Unknown
Engineering	Soil survey, 2007 or 2008	LaSalle County	Unknown
Engineering	Fox Lawn Subdivision Drainage Report, June 30, 2004	Yorkville, City of; Kendall County	PDF report and photos
Flood mitigation activities	Repetitive loss - 18 areas with 100+ properties	Kane County	Unknown
Historical flood	High water marks Blackberry, Kishwaukee headwaters; Big Rock, Welch, and Indian Creeks	Kane County	Unknown
Historical flood	Fox River high water level recorded at Municipal Center 08/24/2007 and USGS rainfall for 09/13/2008	St. Charles, City of; Kane County	Unknown
Historical flood	Ice jams	Lower and Upper Fox Watersheds	Shapefile
Historical flood	Flood articles from 2008 and 2010, points are approximate locations of news articles about flooding	Watershed	Shapefile
Risk assessment	Critical facilities survey	Kane County	Unknown
Risk assessment	Countywide assessment conducted annually	LaSalle County	Believe to be digital

Appendix D. Action Discovery Outreach

The Action Discovery phase provided a continuation of past Discovery efforts that focused upon more intensive coordination with communities possessing a higher mitigation action potential. The Lower Fox Action Discovery Project emphasized reducing flood risk through mitigation actions that would ultimately result in safer communities. Prior to the start of the project the Illinois State Water Survey (ISWS) conducted a project team conference call with FEMA and appropriate state and federal officials to gather relevant information concerning the watershed communities.

Lower Fox Action Discovery Tier 1 and Tier 2 communities were selected based upon the FEMA Community Action Potential Index (CAPI) scores, County Hazard Mitigation Plans, comment data collected during the Discovery phase, a draft AoMI dataset, and input from FEMA and Illinois state agencies. Once the Tier 1 and Tier 2 watershed communities were designated, contact information was updated and approximately four weeks prior to the Action Discovery meeting, ISWS sent invitations to selected communities. Prior to the Action Discovery meeting outreach began with a one-on-one phone call with the Tier 1 communities during which time unique local flood-related issues, plans, existing resources and tools, and mitigation priorities were discussed. The Tier 1 community outreach information, meeting invites, contact information, and CAPI rankings are available in the Appendix G folder.

The Lower Fox Action Discovery meeting was held at the following place, date, and time.

Wednesday, July 23, 2014, 1:30 – 3:30 PM

Montgomery Village Hall

200 North River Street

Montgomery, IL 60538

The Action Discovery meeting was approximately two hours in length and consisted of introductory presentations followed by a break-out session in which stakeholders reviewed and Discovery comments and Action Discovery maps, and provided information for needed community mitigation action projects.

Presentations were given describing FEMA's Risk MAP program goals, Community Rating System (CRS), Mitigation Action Tracker and mitigation ideas for local flood risk issues, and the Action Discovery meeting goals and objectives. The meeting handouts and presentations are available in the Appendix H folder.

For the break-out session, Action Discovery maps labeled with Discovery comment numbers were available for review at approximately six stations, and each station was staffed by ISWS personnel. After reviewing the maps and clarifying any questions, stakeholders updated Discovery meeting comments and completed mitigation action forms that included their contact information and recommended mitigation projects for local flood risk areas. The meeting attendance is available in Table D1. A summary of updated comments is available in Appendix E and a summary of submitted Mitigation Action Forms is available in Appendix F. The Action Discovery Maps are available in

the Appendix I folder. Narratives of the priority mitigation projects are included in the mitigation section of the Discovery report and have been entered into FEMA’s Mitigation Action Tracker.

Table D1. Lower Fox Watershed Action Discovery Meeting Attendance

<i>Community</i>	<i>Name</i>	<i>Title</i>	<i>Email</i>	<i>Phone</i>
Aurora	Steve Andras	Assistant City Engineer	sandras@aurora-il.org	630-256-3200
Batavia	Andrea Podraza	Civil Engineer	apodraza@cityofbatavia.net	630-454-2757
DeKalb County	Nathan F. Schwartz	DeKalb County Engineer	nschwartz@dekalbcounty.org	815- 756-9513
FEMA Region V	Thomas Smith	Planner	Thomas.Smith6@fema.dhs.gov	312-408-5220
FEMA Region V	Bill Heyse	Engineer	william.heyse@fema.dhs.gov	312-408-5323
Geneva	Brian Schiber	City Engineer	bschiber@geneva.il.us	630-232-1539
Geneva	Elton Orozco	City Engineer	corozco@geneva.il.us	630-232-1501
IDNR	Brian Eber	NE IL Floodplain Program Coordinator	Brian.eber@illinois.gov	847-608-3100 Ext 32059
ISO	Scott Cofoid	ISO / CRS Specialist	scofoid@verisk.com	815-220-1002
ISO	Lou Ann Patellaro	CRS Field Specialist	lpatellaro@iso.com	954-651-5021
ISWS	Sally McConkey	Project Manager	sally@illinois.edu	217-333-5482
ISWS	Glenn Heistand	Engineering Manager	heistand@illinois.edu	217-244-8856
ISWS	Greg Byard	Project Engineer	byard@illinois.edu	217-244-0360
ISWS	Mary Richardson	Engineering Assistant	mjr@illinois.edu	217-300-3479
ISWS	Pat Hubbart	Outreach Coordinator	hubbart@illinois.edu	217-649-9049
Kane County	Don Bryant	EMA Director	bryant@kcoem.org	630-208-2051
Kane County	Scott R. Hajek	Water Resources Manager	hajekscott@co.kane.il.us	630-232-3496
Kendall County	Megan Andrews	Resource Conservationist	megan.andrews@il.nacdnet.net	630-553-5821
Kendall County	Don Clayton	GIS Coordinator	dclayton@co.kendall.il.us	630-553-4030

Table D1. Concluded

<i>Community</i>	<i>Name</i>	<i>Title</i>	<i>Email</i>	<i>Phone</i>
Kendall County	Joseph Gillespie	EMA Director	ygillespie@co.kendall.il.us	630- 553-7500 ext 1148
Kendall County	Angela L. Zubko	Planning & Zoning Manager	azubko@co.kendall.il.us	630-553-4139
LaSalle County	Connie Brooks	EMA	lascoema1@gmail.com	815-433-5622
LaSalle County	Thomas Walsh	LaSalle County Board	thomaswalsh2@yahoo.com	815-228-7799
Montgomery	Jerad Chipman	Senior Planner	chipman@ci.montgomery.il.us	630-896-8080 ext 1224
Montgomery	Pete Wallers	Village Engineer	pwallers@eeiweb.com	630-466-6700
Montgomery	Rich Young	Director of Community Development	ryoung@ci.montgomery.il.us	630-896-8080
North Aurora	Nathan Dornfeld	Civil Engineer	ndornfeld@rsaenr.com	630-846-0238
Oswego	Jennifer Hughes	Publics Works Director	jhughes@oswegoil.org	630-551-2366
Ottawa	Mike Sutfin	Floodplain Administrator	buildingandzoning@cityofottawa.org	815-433-0161 ext 219
South Elgin	Marc McLaughlin	Planner	mmclaughlin@southelgin.com	847-741-3894
South Elgin	Justin Ranney	Planner	jranney@southelgin.com	847-741-3894
St. Charles	Christopher Tiedt	Development Engineering Division Manager	ctiedt@stcharlesil.gov	630-443-3677
St. Charles	Paul Bumba	EMA Coordinator	pbumba@stcharlesil.gov	630-762-7091
St. Charles	Brian Herrmann	Mapping Project Coordinator	bherrmann@stcharlesil.gov	630-377-4980

Appendix E. Updated Comment Forms

Community	County	Comment November 2011	Update July 2014
DeKalb County	DeKalb	The depth grid was very helpful. DeKalb Co. is in the process of stormwater management. We have 2ft contours, a layered GIS on our website-aerial photography-2009-accessible now We have some FEMA data. FEMA needs our 2 feet contour data. <u>Phase 1</u> -update stormwater plan-done. <u>Phase 2</u> -2ft contours-done, ID wetlands & floodplains-doing -ID areas for mitigation-watershed approach phase 3-\$ to act-start mitigation.	DeKalb County is working with NRCS to update locations of wetlands to be more accurate on digital maps of field conditions. Floodplains on digital maps upgraded to match FEMA.
DeKalb County	DeKalb	Possible LOMC cluster; Zone A ; 100 yr ago, Farmer sold land that flooded & someone built houses; Little Rock Creek	No change
DeKalb County	DeKalb	Subdivision-near Waterman	Land is subdivided but most lots are still empty.
DeKalb County	DeKalb	water overtops Pritchard Road	Also occurs during winter causing ice over the road. Road commissioner researching solutions.
DeKalb County	DeKalb	water floods Route 23 at railroad	In LaSalle County, just north of Rt. 34
DeKalb County	DeKalb	Somonak Creek study shows large areas of logging of trees in creek	Water overtops Chicago Road at Govern Beveridge Road. Somonauk Creek. No improvements planned; Water overtops Perry Road at Battle Creek. Bridge being replaced in 2014.
Hinckley	DeKalb	Property owner filled-elevation may be incorrect. Floodplain may not represent current flooding;	No Change
Hinckley	DeKalb	Rumnsnider & Duffy Road Crossroad water over road caused wreck.	Unknown if any improvements have been done.
Waterman	DeKalb	Area has become developed	Subdivision is partially filled.
Waterman	DeKalb	Homes receive floodwater from fields/creek	Village has researched possible solutions
Kane County	Kane	3 buyouts recently completed	Completed. (S Hajek)
Kane County	Kane	Additional letters of map change will come through for residences on Indian/Selmarten Creeks	Completed. Not all homes in area with EC's are out of floodplain. (S Hajek)
Kane County	Kane	Low-head dams removed on Ferson-Otter Creek	Completed by KCDEM (S Hajek)
Kane County	Kane	Some data available through ISWS for Big Rock/Welch Cr. & tributaries	FIRMs updated 2012 (S Hajek)
Montgomery	Kane, Kendall	No detailed flood study, Qs [discharge] developed using regression equations -needs re-study in both Kane & Kendall County. Flood Stage-Gauge Station @ Montgomery would be helpful for establishing a flood warning system. Parkview Estates has "partial" flood protection from 1975 levee system-once overtopped properties flood quickly!	Still needs attention. (P Wallers)
Montgomery	Kendall	Check with Fox Metro Sanitation to see if this area floods	Doing a major expansion soon. (A Zubco)
Yorkville	Kendall	Proposed removal of Blackberry Creek dam. This is a USACE, Rock Island project.	Removed 2013. (A.Zubco)
Kendall County	Kendall	Farnsworth House is a repetitive loss property; Fox River	They are looking how to elevate. (A. Zubco)

Appendix E. Continued

<i>Community</i>	<i>County</i>	<i>Comment November 2011</i>	<i>Update July 2014</i>
Kendall County	Kendall	Flooding issues occur in the unincorporated Fox Lawn subdivision (near Yorkville) located near an un-named creek. A storm in 2004 flooded this area. The most significant flooding occurs just south of Fox Road (indicated by the arrow on the print). Fox Lawn aerial photo and drainage report were attached. Noted that Fran Klaas, the Kendall Co., highway engineer, may have more information on drainage in this area.	Still an issue. Kendall Co. did some engineering studies to try to resolve. Possible culvert under roadway. (A Zubco)
LaSalle County	LaSalle		Ice Jams Dayton and near Norway. The two areas that I'm most aware of are in the attached maps. I'd have to do some digging for the dates. From what I recall, damage on a few houses was sustained due to the water going around and under these the ice jams and not by the "glaciers" themselves. I know that there are probably other areas that have issues with the accumulation of ice... but these are the two areas where we've had public concern and property damage in the unincorporated area of LaSalle County
LaSalle County	LaSalle		Lack of stormwater/sediment and erosion control ordinances/regulations in the lower Fox (especially in LaSalle County). The County board passed an advisory referendum back in 2008 that would look into the establishment of stormwater regulations. The county began the process of putting together a plan a couple of years ago. Much time was spent developing a committee and outline for the plan. When it came time to fund the initiative and put wheels on the planning process, the process got a bit convoluted, and has been pretty quiet since.
LaSalle County	LaSalle		Adoption and enforcement of floodplain regulations in all Lower Fox River Watershed communities
Ottawa	LaSalle	Flats buyout, detail by email	Complete April 2013. (Mike Sutfin)
Ottawa	LaSalle	Sewer treatment plant flood wall, detail by email	Obtained permit from IDNR. No engineering as of this date. Searching for funding source. (MS)
Ottawa	LaSalle	Central School Buy-out, detail by email	Complete. Final surface restoration in progress as of this date. Found sub-surface coal tar contamination. Currently working with NICOR and Ameren to remediate problem. (MS)
Ottawa	LaSalle	Ice Jam, detail by email	March 2014 another serious ice jam. It did break up without damage. (MS)
Ottawa	LaSalle	Aqueduct, detail by email	No progress. Surface debris removed again by IDNR in 2012 . Sand bar continues to be a problem. (MS)
Ottawa	LaSalle	Fox River Stream Bank erosion, detail by email	Bank stabilization continues. No further erosion from April 2013 flood. (MS)

Appendix E. Concluded

<i>Community</i>	<i>County</i>	<i>Comment November 2011</i>	<i>Update July 2014</i>
Ottawa	LaSalle	High School Levee, detail by email	Permit received from IDNR. Search for funding source continues. (MS)
Ottawa	LaSalle	Green Street Elevation, detail by email	Flow study complete. No further engineering. Vertical re-alignment with series of box culverts or a bridge. Search for funding continues. (MS)
Ottawa	LaSalle	Ottawa Regional Hospital Flood Protection & mitigation planning, detail by email	Complete 2011 (MS)
Ottawa	LaSalle	LOMC, detail by email	Complete. All LOMA's revalidated with FEMA map changes of July 2011.
Sheridan; Ottawa	LaSalle		Notes from Mike Sutfin, Rich Burton and Matt Stafford- in the areas noted, the flooding and ice jams are getting worse. Further study should be done on the lower Fox below Sheridan to the mouth in Ottawa. It is possible that sand mining operations in the Dayton area as well as overtopping of their levee system has contributed the channel beginning to fill in. In Ottawa (as noted earlier) a massive sand bar has developed up and downstream of the railroad bridge and the aqueduct. I believe further study will show that there is a conveyance problem. The homes mentioned in comments 34, 35, & 36 would in all likelihood be included in the SFHA with further study.

Appendix F. Mitigation Action Forms

<i>Community / County</i>	<i>Type of Flooding / Flood Risk Area</i>	<i>Mitigation Action</i>
Aurora / Kane	Riverine Floodplain	Looking for a more accurate floodplain map reflecting floodwalls, etc.
Aurora / Kane	Tile system and surface runoff from new development and airport	Ongoing IDOT Rt. 30 widening project will mitigate overtopping but possibly create problems downstream.
Batavia / Kane	Tributary to Mahoney Creek	(1) Map tributary; (2) Remove water from pipes; (3) Prevent stream bank erosion
Kendall Co.	A)Douglas and Wolf Road intersection (south leg) (B)Millhurst Road (15426)	A. Culvert blocked or too small causing flooding north of Wolf Road onto Village of Oswego subdivision. / B. Shown as floodway but these homes normally don't flood.
Oswego / Kendall Co.	Collins Road east of Grove Road / Road damage due to lack of drainage facilities along roadway.	Install roadside ditches, particularly along the north side of the road. Add a culvert under the east approach of Collins Road to eliminate overland flow across the pavement from the south to the north.
Oswego / Kendall Co.	Lincoln Station Subdivision / Lincoln Station is downstream of a culvert under US 30. .	The original plans for the residential subdivision anticipated construction of a commercial development between the residential properties and US 30. The stormwater was intended to be routed through the commercial development. Since the commercial development was not developed, the stormwater flows unmitigated into the residential subdivision. Collect stormwater and direct it to an existing 24" pipe which was designed to accommodate the flow.
Oswego / Kendall Co.	Along Unnamed Tributary to Waubonsie Creek between Southbury and Stone Hill Subdivisions / Vegetation overgrowth along creek may be restricting flow through unnamed tributary. The reduction in capacity is causing adjacent basins to hold water above the design normal water elevation.	Remove invasive vegetation, soften embankment slopes, and establish sustainable, maintainable vegetation along stream bank.
Oswego / Kendall Co.	Villas of Southbury Subdivision - Durham Lane / Overland flow from a farm field to the south overwhelms a storm inlet located on Durham Lane. The street and detention basin fill up. Residents have reported water in several basements in the neighborhood.	Expand stormwater collection system to direct overland flow into the basin. Will need to consider capacity of basin. Consider by-passing flow around development to maintain integrity of basin.
Oswego / Kendall Co.	Waubonsie Creek between Adams and Harrison /Riverine flooding along creek with potential damage to one-two homes; one road, one pedestrian, and one railroad bridge; and one pedestrian path.	Slope protection along south bank to protect pedestrian path.
Oswego / Kendall Co.	IL 32 at Washington St. / Washington Street floods during heavy rain events.	Clean storm sewer. Inspect for collapsed pipe. Replace pipe if necessary.
Ottawa / LaSalle	Dayton Hydro Dam / OSF St. Elizabeth Medical Center south (downstream) of the dam	Catastrophic Inundation Study for Dayton Hydro Dam Dayton Hydro Dam / OSF St. Elizabeth Medical Center south (downstream) of the dam. Catastrophic Inundation Study for Dayton Hydro Dam for mapping and evacuation purposes in case of damage to the infrastructure of the dam or dam failure.

Appendix F. Continued

<i>Community / County</i>	<i>Type of Flooding / Flood Risk Area</i>	<i>Mitigation Action</i>
Ottawa / LaSalle	Ottawa / The City of Ottawa's Flood Threat Recognition plan relies on accurately identifying the areas affected by a flood event. The NWS Advanced Hydrologic Prediction identifies the expected flood elevation with approximately 24 hours of advanced notice.	The City of Ottawa can partner with ISWS and AHPS to produce inundation mapping for the City of Ottawa. We currently have 1' contour maps on our GIS that was produced from LIDAR fly over and are considered very accurate, which the ISWS has reviewed as appropriate for flood forecast inundation mapping. With the inundation mapping from AHPS we will know exactly where the flood levels will affect the City. With this information we will be able to warn citizens of flood threats, prepare for action earlier and be better equipped to fight flood events.
Ottawa / LaSalle	Confluence of the Fox/Illinois Rivers and upstream approximately 4000 feet. / In an area just below the Dayton dam extending to the mouth of the Fox River, during winter months the river freezes solid. In the last 5 years these ice events have become noticeably worse. In 2013 the ice jammed in the area of the hospital with mounds almost 15 feet high. During this type of event if a warm spell occurs the resulting accumulation of ice could damage the Route 6 bridge, a railroad bridge and IDNR's aqueduct as well as the Main Street bridge just upstream of the mouth. In 2010 the ice just below the dam was more than 20 feet thick and documented by USACE.	In the area below the Dayton dam it is apparent that the channel has been filling in. Upstream of the dam is a sand quarry. In 2007, 2008 & 2013 their levee over-topped. Recently they have been given permission to discharge water, up to 400,000 gallons per day, which contains sand from hydraulic quarrying operations. A large sand bar has been accumulating both up and downstream from the aqueduct. Debris accumulates in large quantities during flood events in this area. Coupled with ice jams this debris presents danger to the aqueduct and Main Street bridge. Further study of this stretch of the river should be done. The last modeling of this channel was done in the 1990's.
St. Charles / Kane	East of Tyler Road / 7th Avenue Creek. PMR - What is the status of the PMR for the creek east of Tyler Road?	See reference to Action 125 on the map. What is the status of the maps for the 7th Avenue Creek?
St. Charles / Kane	State Street Creek / State Street Creek Tributary; The threat of flooding to structures is not as high along State Street Creek as along 7th Avenue Creek. There are some issues that the City would like to address however.	The following issues are things the City would like to address along State Street Creek. At the confluence with the Fox River the channel is eroded for approx. 70 feet of stream length. The City is planning to correct this situation when funding becomes available. Between 9th and 12th Streets there are areas where flow could be improved by modifying the channel. State Street Creek Tributary is conveyed by a large diameter culvert where it meets State Street Creek. This culvert conveys the 100 years storm event per the current flood study. The City has looked at options of replacing the culvert or using spun wound concrete to rehab what is there. The current flood insurance study for State Street Creek Tributary is outdated based upon a 100 year flow noted as 11 CFS at its mouth. Since we believe the 100 year flow is not accurate for the Tributary, the City would like to have the flood insurance study updated for both State Street Creek and Tributary.
St. Charles / Kane	7th Avenue Creek from Kirk Road to Fox River / The Sept. 2008 rain event indicated that base flood elevations in certain areas of 7th Avenue Creek, and the 100 year flow per the current flood insurance study, were not correct. The City has been working with IDNR and FEMA since 2009 to have the flood insurance mapping extended from Tyler Road to Kirk Road, and have the flood insurance study updated from Tyler Road to the Fox River.	The City has acquired some properties along 7th Avenue Creek that have become available through foreclosure, tax sale, etc. There has been interest from some properties owners that have experienced repeated flooding to sell their homes. Public ownership of the creek channel would give us more options for improvements and stream bank stabilization. There are numerous culverts along the creek that may need to be replaced due to their capacity and/or conditions. The creek has two areas, at a railroad culvert and at the convergence with 7th Avenue Creek Tributary, where the flow direction changes abruptly. These areas would benefit from a rerouting of the flow line to make the change in direction more gradual. Looking at the long term picture the City plans to enhance the creek corridor with storm water flow improvements, landscaping, public access trails, etc. to make the area a community asset, and reduce flood losses to residents.

Appendix F. Concluded

<i>Community / County</i>	<i>Type of Flooding / Flood Risk Area</i>	<i>Mitigation Action</i>
Kane County	South Park Subdivision, Aurora, IL (NE 1/4 Sec 34, T38N, R8E) / Residential neighborhood dating back to the 1930's subject to first floor and basement flooding. Adjacent to the Mastadon Lake floodplain.	Construction of a stormsewer to provide positive drainage from floodprone depressional areas. Project will protect thirty-eight (38) low-to-moderate income homes and four (4) roads from flood damage. Preliminary engineering completed.
Kane County	Johnston & Lindenwood Drives, Aurora, IL (SE 1/4 Sec 30, T38N, R8E) / Single-family residential homes built in the 1970's subject to first floor and basement flooding resulting from a Zone A floodplain.	The Lindenwood detention storage project will re-sculpt the topography on an adjacent 5-acre farm parcel to the east of Lindenwood to create detention storage for floodwaters that previously impacted the neighborhood. Protection for nine (9) or more homes and two (2) roads. Concept level engineering completed. Additional flood study completed.
Kane County	Indian / Selmarten Creek Watershed, Aurora, IL (NW 1/4 Sec 12 T38N, R8E) / Residential neighborhoods subject to first floor and basement flooding located South of I-88 in the Indian Creek watershed. Over 150 homes and structures in an area of 100-year floodplain.	Construction of 100 acre-feet of floodplain storage in the DuPage County Big Woods Forest Preserve to reduce the base flood elevation south of I-88 and remove homes from the floodplain. Problem identified. Proposed solution in planning phase only.
Kane County	West Drive, South Elgin, IL (NE 1/4 Sec 2 T41N, R8E) / Residential neighborhood subject to first floor and basement flooding Unincorporated South Elgin. Two (2) homes in an area of 100-year floodplain subject to repetitive losses.	Buyout of two (2) homes and removal of the existing structures. Initial contact with property owners, looking for source of funding to actively pursue buyouts.