

Chapter 1

1.1 Introduction

Natural disasters have played a significant role in the history of Jersey County. While the county has experienced its share of damage from tornadoes, straight line winds and flash flooding (the latter being responsible for the most deaths due to natural hazards), the devastating and prolonged flood of 1993 stands without equal. When the swollen rivers of the Mississippi, Missouri and Illinois overran their banks in the spring of 1993, Jersey County, positioned at the crossroads of these three mighty rivers, found itself at the center of a historic flood. Official records place the length of the 1993 flood at 195 days between April and October, but its impact on county and municipal government continues to this day. At its height, the Mississippi River crested at approximately 20 feet over flood stage in Grafton. Hundreds of residents were displaced, some permanently, by the floodwaters. The Jersey County Assessors Office recorded a reduction of property assessment of more than \$3 million due to damage caused by the flood.¹ Damage to agricultural land caused the County's crop production to fall by 3 percent from 1992 production levels in a year when state crop production rose by some two percent. Incalculable costs from disrupted transportation were also incurred. Approximately 35 miles of county roads were inundated, including the Great River Road, the main transportation route for goods and people between Jersey County and metro St. Louis communities on both sides of the Mississippi. During the flood, only five businesses out of 85 remained open in Grafton while all seven businesses in Elsah were closed.²

The impact of the 1993 flood has changed the entire character of some areas of the county. The City of Grafton experienced a loss of population and a change in its economic structure, but is experiencing continuing commercial and residential development. Restoration of damaged historic buildings in the Village of Elsah, itself a national registered historic landmark, took nearly ten years to complete. As we will document in this mitigation plan, significant steps have been taken to mitigate future floods, but continued flood related-mitigation efforts remain a priority.



Otter Creek 1993

¹ C.C. Hopper and Associates, *Draft of Economic Impact Analysis and Flood Recovery Strategy for Greene Jersey, and Calhoun Counties*

² C.C. Hopper and Associates.

While the 1993 flood provides us with an actual worst-case scenario for mitigation planning, flooding remains only one of several notable natural hazards facing the county. Indeed, the county's geographic position makes it susceptible to a mixture of natural hazards not found in a majority of U.S. counties. The U.S. Geological Survey reports that a group of scientists studying the New Madrid Seismic Zone, the seismic zone of most concern to Jersey County, estimates that an earthquake with magnitude 6 or larger has a 25 to 40 percent chance of occurring in the next 50 years.³ Historically, Illinois has witnessed over twenty major earthquake events, including a magnitude 5.1 in 1917 and a magnitude 5.2 earthquake in 1968. One significant seismic event which occurred in the last five years was a magnitude 5.2 earthquake which had an epicenter near Bellmont, Illinois, and could be felt as far away as St. Louis.⁴

County residents also keep a close watch on the skies, particularly in spring and summer months. A National Weather Service data shows that from 1991-2010; Illinois averaged 9 tornadoes per 10K square miles, a figure which tied it for third most of any state, trailing only Kansas and Florida and on par with states including Oklahoma, Iowa, and Mississippi.⁵ The State of Illinois is struck by on average 1.4 tornadoes a year that register as an F3 or higher. Over the past 60 years Jersey County has experienced 13 tornadoes, the strongest of which were three F2s.⁶ Combined, these statistics show that Illinois and Jersey County are regularly susceptible to the dangers of tornados.⁷ High winds, hail and flash flooding that accompany severe thunderstorms are also notable natural hazards of concern for county residents. Between January 1996 and February 2013, Jersey County has witnessed 134 such events, including a flash flood on May 5, 2003 that resulted in the county's only reported weather related fatality at that time in almost 20 years.⁸ Since 2003 the county experienced heavy rains in December of 2015 creating flooding and flash flooding of creeks. In Grafton the velocity of a creek swept a woman away as she attempted to cross the creek by foot to return to her home. Her body was discovered a month later miles down the Mississippi River.

Winter months bring the risk of various forms of dangerous winter precipitation to the county. Between January 2009 and December 2015, Jersey County saw 5 heavy snow events, 7 winter storms. As county residents know all too well from the summer of 2012, the county can also experience excessive heat and drought. Between January 1996 and February 2013, the county experienced 14 days of excessive heat.⁹ All five recorded drought events since 1996 have occurred between 2005 and 2012.¹⁰

³ U.S. Geological Survey. USGS,. Fact Sheet 2009-3071. August 2009.

⁴ Center for Earthquake Research and Information. Recent Earthquakes in the Central U.S. http://www.ceri.memphis.edu/mag5-2_041808/index.html (date accessed, October 1, 2012).

⁵ NOAA; s National Weather Service Storm Prediction Center WCM Page. Average Annual Tornadoes per 10K Square Miles per State (1991-2010). <http://www.spc.noaa.gov/wcm/#torclim> (date accessed, June 1, 2013).

⁶ Illinois State Water Survey. Tornado Maps of Each County and Illinois. <http://www.isws.illinois.edu/atmos/statecli/tornado/NewMaps/Tornadoes-Jersey-County-Illinois.png> (date accessed, June 29, 2013)

⁷ <http://www1.ncdc.noaa.gov/pub/data/cmb/images/tornado/clim/totavg-ef3-ef5-torn1991-2010.gif>

⁸ National Climatic Data Center Storm Events Database. Jersey County, IL. <http://www.ncdc.noaa.gov/stormevents> (date accessed, June 1, 2013).

⁹ National Climatic Data Center Storm Events Database. Jersey County, IL <http://www.ncdc.noaa.gov/stormevents> (date accessed, Dec. 2015). An excessive heat event is when the heat index is 105 degrees Fahrenheit or greater for

1.2 Jersey County Profile

Geologically, Jersey County is at the southern edge of the ice sheet of the Ice Age. The scrapping of the ice sheet followed by uplift and erosion define the shape of the land. One of the most prominent features of Jersey County and a significant tourist attraction are the bluffs along the southern and western edges of the county. The other prominent feature of the county is the rivers – the Mississippi, Illinois and Missouri.

The Mississippi River delineates the southern line of Jersey County. The Illinois River delineates much of the western line of the county, separating Jersey from Calhoun County. As the earth's crust uplifted, the great rivers eroded downward, carving the bluffs and meandering back and forth, creating floodplains. The western edge of the county drops from the bluffs on to the Illinois River floodplain (in an area known as Nutwood). The southern bluffs drop to the river (or the Great River Road, which hugs the base of the bluffs for nearly thirty miles). One can stand on these bluffs looking southward across the floodplain of St. Charles County (Missouri), the Missouri River, and the far bluffs in St. Louis County (Missouri). This entire expanse was covered to the treetops in the flood of 1993.

The county is also at the northern end of the New Madrid earthquake fault line. Perhaps the most important modern (in geologic terms) event was the series of New Madrid, Missouri earthquakes of 1811-12 that, according to the USGS, “were among the largest to strike North America since European settlement”¹¹ As the authors of this USGS report note, the area impacted by these events was 2-3 times as large as the 9.2 magnitude Alaskan earthquake and 10 times as large as the 7.8 magnitude 1906 San Francisco earthquake. The region continues to be active, with minor tremors being felt, albeit infrequently, in Jersey County.

On the south and west, Jersey County is defined by its bluffs and the hollows and ravines that are carved into them. These areas are generally the most natural parts of the county, home to Pere Marquette State Park, the largest in the state, and Principia College, which maintains much of its 2,600 acres in natural state (including in state-designated grasslands). Other portions of this area are protected by private landowners, such as the Great Rivers Land Trust, and conservation easements.

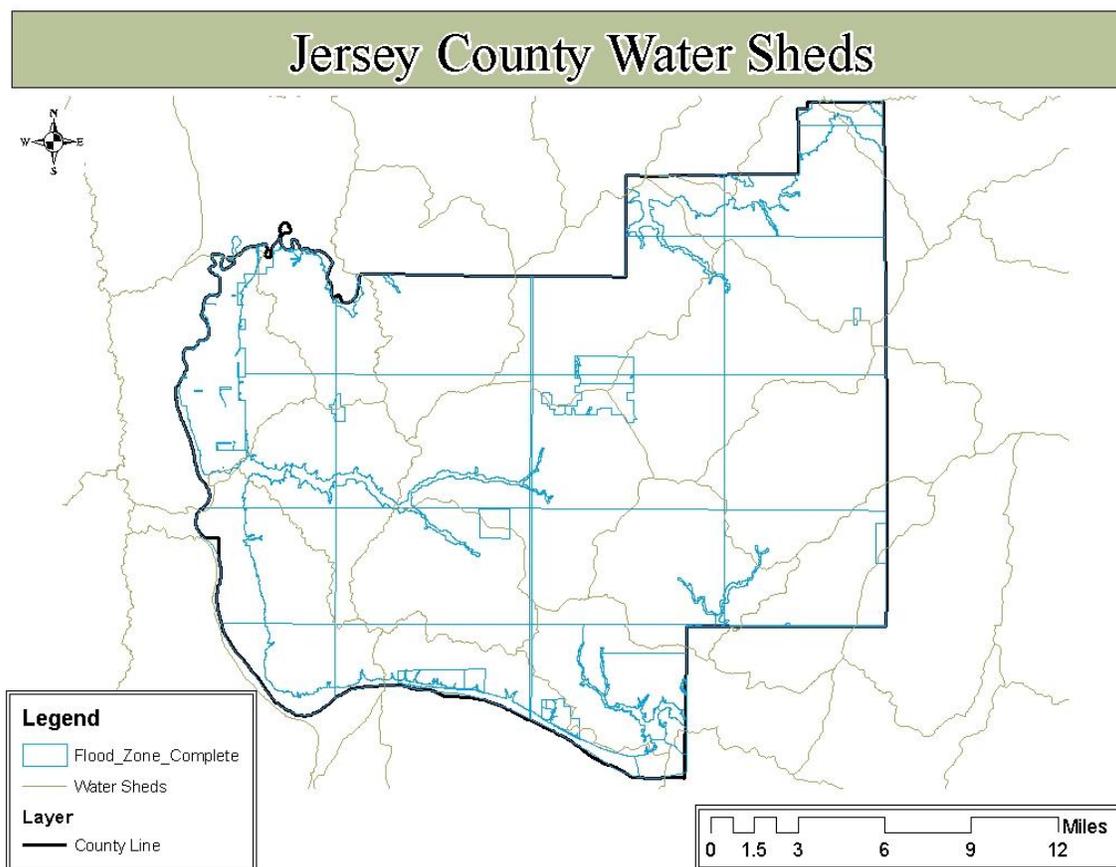
The county is crossed by three watersheds. Flowing westward to the Illinois River from the central Illinois plains along the northern border of Jersey (with Greene County) is the Macoupin Creek watershed. Flowing westward to the Illinois River across the center of the county is the smaller Otter Creek watershed. Flowing fanlike south to the Mississippi River is the Piasa Creek watershed as depicted in Fig.1.2.1

more than 3 hours a day for two consecutive days or when the heat index reaches 115 degrees Fahrenheit or more at any time during a day.

¹⁰ Richard L. Dart and Christina M. Volpi. *Earthquakes in the Central United States, 1699-2010*. Washington, D.C.: USGS. 2010, 5.

¹¹ Richard L. Dart and Christina M. Volpi. *Earthquakes in the Central United States, 1699-2010*. Washington, D.C.: USGS. 2010, 5.

Figure 1.2.1 Jersey County Water Sheds



Jersey County is approximately 700 feet above sea level. More obvious though is that upland Jersey County is about 250-300 feet above the Mississippi and Illinois Rivers. The designated elevation of Alton Lake, the expansion of the Mississippi River spreading along the southern edge of the county due to the Melvin Price Lock and Dam complex at Alton, is 419 above sea level. Jersey County is 241,546 acres. Twelve percent of the county is in federal-designated flood plain.¹²

Location, History, and Development

Jersey County is located in what is considered southwestern Illinois, overlooking the confluence of the Mississippi, Missouri, and Illinois Rivers. Though predominantly rural, the county is part of the St. Louis Standard Metropolitan Statistical Area. Depending on traffic, residents of Jersey County can reach downtown St. Louis for a Cardinals' baseball game, a Rams' football game, the symphony, or a flight from Lambert St. Louis International Airport in an hour's drive.

¹² Data obtained from the Jersey County Code Administrator's Office. June 2013.

Jersey County is not an origination or destination point for most of the transportation in, near or above the county. Instead, Jersey County is a transit region. This is an historical reality. Native Americans used the rivers and trails to move across and beyond the region. The Piasa Bird, a local symbol and school mascot, comes from the legend of a phoenix-like half-bird, half-dragon rising from the Great River. The hamlet on the opposite side of the Mississippi River from Principia College was aptly named Portage de Souix, crossing place for the Souix Indians.



Figure 1.2.2 Location of Jersey County in Illinois

Early explorers, including Joliet and Pere Marquette, after whom our state park is named, floated down the Illinois River. The two French explorers made landfall at a point just west of the City of Grafton. George Clark and Meriweather Lewis began their epic journal at the mouth of the Missouri River, within site of the Jersey County bluffs. Historical records suggest that a branch of the National Road, and extension of the turnpike that crossed through the Cumberland Gap in the early years of the Republic, terminated just east of the Village of Elsay.¹³

In 1821, with the establishment of Greene County, it ceased to be a part of Madison County, a relation it had held since the latter was formed by Gov. Edwards in 1818. The part of Greene County that now constitutes Jersey County, continued to be included in Greene County until August 5, 1839. The Enabling Act passed by the Legislature, February 28, 1839, provided that on August 5, following at an election held for that purpose, a proposition should be submitted to the voters of the latter county, for and against the separation of Jersey County from Greene County, for their determination. At that election, there were 1, 239 votes for and 714 against the proposition, a majority of 525 out of a total of 1, 953 votes. From 1821 until 1839, however, the history of Jersey County is naturally included in that of Greene, and is so given.¹⁴

Jersey County was not central to opening of the west, deferring to the great cities of Alton and St. Louis further south. However, the railroads had a major impact on the region. Ultimately, short lines connected most corners of the county, including hauling limestone from Grafton. Major national railroads crossed the county, which was originally part of neighboring Greene

¹³ Oscar Brown Hamilton, ed.. *History of Jersey County, Illinois*. Chicago: Munsell Publishing Co. 1919.

¹⁴ *Ibid*.

County. Greene, more than Jersey, was a crossing point between north-south and east-west lines. The Greene County town of Roodhouse, recalling the railroad Roadhouse, still has many of the tracks.¹⁵

The Mississippi, Missouri, and Illinois Rivers—three great commercial arteries—border or are within sight of Jersey County. Yet, today, except for two ferry services and private pleasure craft, commercial traffic bypasses the county. Jersey County is hopeful that the new “Westside” expressway, currently designated US 67, will make a positive contribution to the economic development of the county once it is completed. The limited, four-lane expressway is to connect the St. Louis region with the Quad Cities. Upon completion, it will be the only north-south expressway in the western side of the state. According to the Illinois Department of Transportation, as of FY 2012, more than \$929 million in improvement costs for this 220 mile corridor project have been awarded, with \$4.6 million programmed for FY 2013 and \$109 million for FY 2014 – FY 2019.¹⁶ In July 2013, a stretch of four lane travel between Delhi to Godfrey was finished, marking the most recently completed stage of the project within county lines.¹⁷ The Jersey County Business Association has been working with state transportation officials to “encourage the re-allocation of \$42 million of preliminary engineering and by-pass bridge construction to extend expressway constructions of U.S. 67 from New Delhi to Crystal Lake Road”¹⁸ with a hopeful completion of 2016. According to the National Pipeline Mapping System (<https://www.npms.phmsa.dot.gov/>) and the U.S. Energy Information Administration (<http://www.eia.gov/state/maps>), a hazardous liquid pipeline traverses approximately 15 miles of the county without terminals or access points within the county.

Jersey County has 594 miles of roads, both seasonal and all-weather. The roads include dirt, gravel, oil and chip, concrete, and blacktop. The roads include township, county, state, and federal roads. The roads are maintained by townships, the county, and the Illinois Department of Transportation. The county monitors the condition of its roads through the office of the County Highway Engineer. The County Highway Engineer maintains a database of all public county roads, regardless of jurisdiction. This database is cross maintained with the county’s GIS project and the county’s 911 program. The County Highway Engineer maintains a program of periodic inspections and upgrades, when funded by the County Board. The County Highway Engineer was an initial part of the Hazard Mitigation planning process and continues to be involved and committed to hazard mitigation. This individual is a member of the county’s Special Projects Committee that monitors the implementation of the Natural Hazards Mitigation Plan.

Jersey County is experiencing increased suburbanization, especially in the form of small housing developments. The scale of the developments is generally small, although the homes within the developments vary greatly in size. Jersey County has no zoning ordinance or land use controls,

¹⁵ Ibid.

¹⁶ Illinois Department of Transportation. U.S. 67 Corridor Project Overview. www.dot.state.il.us/us67/Overview.html (date accessed, July 3, 2013)

¹⁷ Robert Lyons. “U.S. 67 Expands to Three Lanes.” *Jersey County Journal*, May 31, 2013. On-line edition (date accessed, July 3, 2013).

¹⁸ Tom Bott. “Jersey Basks in Business Developments.” *Alton Telegraph*, September 13, 2012. On-line edition. (date accessed, July 3, 2013).

but does record annual building permits. The number of building permits for new homes and mobile homes from 2008-2015 is listed in Table 1.2.1¹⁹.

Table 1.2.1 Jersey County Building Permits for New Homes and Mobile Homes

<i>Year</i>	<i>New Home Construction</i>	<i>Mobile Homes</i>	<i>Commercial Construction</i>
2008	33	11	7
2009	23	11	1
2010	19	10	1
2011	17	10	1
2012	15	11	4
2013	15	9	2
2014	16	10	3
2015	12	8	2

Source: Jersey County Building Permit Administrator's Office, Dec. 2015

Governmental and Regulatory Structure

Jersey County is divided into 12 townships, and has six quasi-independent municipalities. There is no home-rule charter, so there is some overlapping jurisdiction. The county is divided into independently managed fire protection districts. For taxing purposes, there are separate districts (and governing bodies) for the library, the community hospital, and the community college (which is located in a neighboring county). There are separate water and sewer districts, with most of the county served by a rural water authority.

Unincorporated Jersey County has no zoning code. In the early 1990s, the Jersey County Board adopted a countywide zoning ordinance. The citizen response was immediate, vociferous, and at times deeply concerning to law enforcement. Citizens rejected zoning in a countywide referendum on January 14, 1991. Within six months, the county board abandoned efforts at zoning scheme. Jersey County has no land use ordinance. Currently, land development is limited by the state plat act (which requires platting of parcels less than five acres). Land use is limited by state laws, if any, such as the regulations on construction of landfills. Thus, there are no limitations on the development of hog farm factories, airstrips, landfills, or junkyards (to list a few that rise citizen ire).

Until 2004, the county had no building code. After intense negotiations, in 2005, the county building regulatory scheme moved to the requirement that new residential buildings use the BOCA Code National Electrical Building Code and the State of IL Plumbing Code. Further

¹⁹Data supplied by Jersey County Building Permit Administrator's office, Dec. 2015

deliberations ensued over the next three years and in 2008 the Jersey County Board adopted the 2006 ICC codes, which aligned the county with the city of Jerseyville and the city of Grafton. Also in August of 2004 Public Act 093-0936 (Illinois Energy Conservation Code for Commercial Buildings) was signed into law and became effective April 8, 2006. On October 9, 2007 the law was revised in favor of the International Energy Conservation Code. The act was amended in 2009 to include residential buildings which became effective in 2010²⁰. Any local government that issued permits for construction must adopt the code.

Jerseyville, the largest municipality in the county (population 8,465 per 2010 Census),²¹ has a land use plan, zoning, and a building code. They have hired a fulltime professional staffer to monitor and enforce both zoning and the ICC building code. The City of Grafton is the second largest municipality in the county (population 674 per 2010 Census),²² has both zoning and the 2006 ICC building code. It also employs a part-time building inspector. This advance, in the face of anti-regulatory sentiments, was one of the results of the flood of 1993. In 2011, the Village of Elsah also adopted the ICC codes and in January 2012, the Village of Elsah entered into an Intergovernmental Agreement²³ with Jersey County Board to authorize the county building code inspector to issue building permits and perform inspections on new construction within the corporate limits, however, the Zoning Board of Elsah must issue a Zoning Permit first, in keeping with the historical appearance aspects of the Zoning Ordinance.

In addition to the ICC, the most vigorous form of land use or building code regulation is the NFIP a federal program created by Congress to mitigate future flood losses. Participation in the NFIP is an agreement with the Federal Government that the community will adopt and enforce a floodplain management ordinance. The program stipulates construction requirements, including elevations, for structures. The local jurisdiction is responsible for application of the program and enforcement of the regulations. Failure of any structure can jeopardize participation in the program for all other structures.²⁴ Jersey County employs a full-time Certified Floodplain and Building Inspector to implement the programs.

Jersey County Critical Facilities

The critical facilities were identified by the County and each municipality for the update of the Plan. Jersey County uses and maintains the GIS and has layers for critical facilities. Hazardous materials, other than those being transported through the county, are not a significant concern for Jersey County. There are no nuclear generation, manufacturing, storage or disposal facilities in Jersey County. There are no EPA Superfund sites in Jersey County. While there are no chemical manufacturing sites in Jersey County, there are a number of chemical storage and distribution sites in the county. All of these sites involve chemicals, such as fertilizers, used in agriculture. There are only three bio-chemical sites in the county—the Jersey Community Hospital (including radiological), the Jersey Community High School (chemistry and biology

²⁰ Illinois Dept. of Commerce & Economic Opportunity <https://www.illinois.gov/dceo> (date accessed 4/9/15)

²¹ <http://censusviewer.com/city/IL/Jerseyville> (date accessed 6/10/2013)

²² <http://censusviewer.com/city/IL/Grafton> (date accessed, June 10, 2013).

²³ Intergovernmental Agreement dated Jan. 10, 2012; recorded on Jan. 19, 2012 Book 1748 Page 123

²⁴ Federal Emergency Management Agency. *National Flood Insurance Program: Answers to Questions About the NFIP*. FEMA F-084. March 2011.

labs for teaching), and Principia College (chemistry and biology labs for teaching). A complete listing of all critical facilities in the county is discussed in detail in Chapter 2.

1.3 The Planning Process

The Jersey County Multi-Jurisdictional Plan was first developed in 2004 and utilized the four phases or steps recommended by FEMA’s *Mitigation Planning How-To-Guides*. The 2015 Plan update utilized the 10-step process recommended by FEMA and the Community Rating System.

Step 2 of the planning process involves the public and their input, particularly residents and businesses of the mitigation planning area. In consultation with elected officials at the county and municipal levels, the original Hazard Mitigation Planning Team in 2004 proposed that the planning area should be defined as the entirety of Jersey County. Jersey County includes extensive unincorporated areas along with a number of incorporated jurisdictions—cities of Jerseyville and Grafton, and villages of Brighton, Elsah, Fieldon, and Otterville. Defining the entire county, including all incorporated areas, results by definition in a multi-jurisdictional plan. In 2008, a multi-jurisdictional plan was developed, approved by FEMA, and included the jurisdictions listed above with the exception of Brighton and Otterville (see explanation below). These same jurisdictions are part of this multi-jurisdictional plan update.

One of the first acts of the Hazard Mitigation Task Force in 2004 when the county’s original Natural Hazards Mitigation Plan was being developed was to approach each municipality and present the need for hazard mitigation planning, the proposal for multi-jurisdictional planning, and an invitation to join in the multi-jurisdictional plan. Each presentation was made before municipal boards and public, with opportunity for community participation and response.

In the summer of 2011, members of the planning team revisited each of these communities to remind, and in the case of public officials elected after the completion and adoption of the current mitigation plan, inform them of the need to update the plan. Planning team members reviewed the original impetus for the plan, leading goals of the plan, and process for updating the plan. They were also invited to participate in the planning process by providing periodic input on various aspects of the plan and data needed to ensure the most accurate portrayal of relevant features of their municipalities. Elected officials provided verbal support for this planning process and their jurisdiction’s inclusion in the updated multi-jurisdictional plan.

Table 1.3.3 Meetings and Public Hearings in June 2009 through April 2015 with Municipalities in Jersey County

<u>Jurisdiction</u>	<u>Special Projects Committee Representative(s)</u>
City of Grafton	John Williams, Professor, Principia College Cindy Cregmiles, County Code Administrator
City of Jerseyville	Brian Roberts, Professor, Principia College John Williams, Professor, Principia College Jeff Soer, City Building Inspector

Village of Elsayh	Linda Davidson, County Code Administrator’s Office Cindy Cregmiles, County Code Administrator Brian Roberts, Professor, Principia College
Village of Fieldon	Linda Davidson, County Code Administrator’s Office Brian Roberts, Professor, Principia College John Williams, Professor, Principia College

As they did prior to the adoption of the 2008 plan, all of the incorporated communities wholly inside the county concurred that a multi-jurisdictional plan was the appropriate approach. Consistent with FEMA’s rationale for developing multi-jurisdictional plans, municipalities determined that they possessed insufficient resources to develop a mitigation plan on their own. They decided to benefit from resources marshaled by the county with the acknowledgement that mitigation strategies would ultimately be consistent with local objectives. As noted above, care was taken to include members of the different incorporated communities in the planning process. Mayors or board presidents of almost all of the jurisdictions have participated routinely in task force activities and meetings. Only three municipalities, the City of Brighton, Village of Fidelity, and the town of Otterville, expressed some initial reluctance to engage in the process, but their exclusion from this process seemed appropriate given the fact that the much larger portion of the City of Brighton – both in land and population – is located in adjacent Macoupin County. The villages of Fidelity and Otterville have a very small population and chose not to participate. The public at-large has been included through their invitation to attend these open meetings and hearings. Surveys about natural hazards and hazard mitigation administered by plan researchers and the related news coverage of these surveys have also served as mechanisms of public involvement in the planning process. Several op-eds about the hazard mitigation planning process authored by Professor Williams have also appeared in the county’s leading news source, the *Jersey County Journal*. Sample copies of news coverage and op-ed pieces are included in the Appendix of this plan.

Planning Team



Figure 1.3.1 Jersey County Special Projects Committee Meeting

Since 2008, the county’s Special Projects Committee, an official county board committee, has been overseeing the bi-annual meetings with additional individuals from the public and private sectors as listed in Table 1.3.1. After the 2014 political election several of the committees were combined and renamed. As a result the new committee that will oversee the revised Plans is the Committee on County Service Offices and Public Safety, however for the sake of this Plan writing it will still be referred as Special Projects. Refer to Table 1.3.2

Table 1.3.1 Frequent Attendees at Special Projects Committee Meetings (2009-2015)

Jersey County Board Member (Committee Chair)	Mary Kirbach
Jersey County Board Member	Pam Heitzig
Jersey County Board Member	Jerry Wittman
Jersey County Board Member	Gary Hayes (2009-2013)
Jersey County Board Member	Rhonda Linders
Jersey County Board Member	Ron Henerfouth
Jersey County Floodplain Manager, Code Administrator & Plan Program Administrator	Mike Prough (2009-2013)
Jersey County Code Administrator’s Office	Cindy Cregmiles (2009-2012)
Jersey County Code Administrator’s Office	Linda Davidson (2009-2014)
Jersey County Code Administrator’s Office	Natalie Walsh (2013-2015)
Supervisor, Jersey County Highway Department	Tom Klasner
Professor, Principia College	John Williams
Professor, Principia College	Brian Roberts
Director, Great Rivers Land Trust	Ally Ringhausen
Building Inspector, City of Jerseyville	Jeff Soer
Resource Conservationist, Soil and Water Conservation District	Jeff Blackorby
Environmental Health Manager, Jersey County Health Department	Dale Bainter (2009-2013)
CEO, Jersey County Business Association	Alan Gilmore (2009)
City of Grafton	Tom Thompson
Town of Fieldon	Betty Duggan

Plan Coordinators, Investigators, Evaluators

The individuals who have worked on the development of the 2008 plan and its implementation (including monitoring and evaluation) as well as this updated 2015 plan, can be divided into two primary categories. Central to the process are the following individuals: Cindy Cregmiles, Jersey County Certified Floodplain Manager and County Code Administrator, Building Inspector and Mitigation Plan Project Administrator —responsible for overall management of the process; Linda Davidson, County Code Administrator’s Office—primary data collector and assistant editor; Brian Roberts, Principia College Political Science Professor —lead investigator, writer and editor; and John Williams, Principia College Political Science Professor —lead investigator, writer and editor.

Table 1.3.2 Attendees of the Special Projects Committee meetings to present

Jersey County Board Member	Rhonda Linders
Jersey County Board Chairman	Jerry Wittman
County Board Member	Mary Kirbach
County Code Administrator	Cindy Cregmiles
IT/GIS Coordinator	Linda Davidson
Jersey County Highway Dept. Engineer	Tom Klasner
Jerseyville Building Inspector	Jeff Soer
Jersey County Environmental Director	Doug King
Jersey County Health Department	Teresa Macias
Jersey County Emergency Services Director	Larry Mead
Citizen, retired bank President	John Hefner
Citizen, retired engineer	Dean Heneghan
Mayor of Jerseyville	William Russell
Mayor of Grafton	Tom Thompson
Mayor of Elsayh	Cy Bunting
Mayor of Fieldon	Betty Duggan
Principia College	Professor John Williams
Principia College	Brian Roberts
Trustee of Nutwood Levee District	William Eagleton
Trustee of Nutwood Levee District	Roderick DeVerger
Conservation Officer	Mark Wagner
Jersey County Board Member	Ron Henerfouth
Jersey County Board Member	Brian Kanallakan

The second collection of individuals include Special Projects Committee Members and other representatives from individuals from county and municipal governments units including mayors, building inspectors, health officials, natural resources management professionals, private land trust officials. These individuals have frequent updates on the impact of specific

hazards and the implementation of mitigation plan goals and strategies. They are important because of their professional positions and connections, including, for example, local mayors, city building inspectors, first responders, natural resource management officials and directors and supervisors of county and municipal government divisions (highways, public health, etc.). They have also provided assistance with policy development and policy evaluation (mitigation strategies).

Involvement of Principia College

With the success of the 2008 plan the county once again enlisted the help of the county's only institution of higher learning, Principia College, a small, private, four-year, undergraduate, Liberal Arts College for the 2015 update Plan. Professor John Williams, the chairman of the political science department at Principia College, is a longtime county resident who has served on several local or county boards and task forces. His familiarity with county government made him a natural initial point of contact for the plan. The Principia political science program is committed to educational principles of active learning—whereby students actively engage intellectually in their subject matter; experiential learning—whereby students solidify their theoretical learning by practical experience; and service learning – whereby students engaged in a learning experiences that also benefits a community. The department was familiar with the county, its politics, and its governmental structure. For more than a decade, political science students conducted public opinion polls, both by telephone and as voting day exit polls, and several students served on local campaigns as volunteers and as interns. Assisting with the hazard mitigation process was a logical extension of the educational strategy of the department. Professor Williams, in turn, enlisted the involvement of his colleague, Professor Brian Roberts, who serves as an instructor for the department's senior seminar in public policy analysis and, along with Professor Williams, an instructor in a required research methodology course and required American government and politics course. Over almost a decade, students from all three courses have been involved in the hazard mitigation project to some extent or another. Students have identified the risks facing the county, analyzed the plan's implementation, recommended new plan action items, conducted surveys of county resident awareness of natural hazards mitigation, and facilitated meetings of emergency responders. Professors Williams and Roberts also assumed key roles in the development of this plan, serving as members of the initial Planning Team in 2003 and regular participants in Special Projects Committee meetings – roles they have continued to this date. The county's successful partnership with the college was highlighted in a Ogilvy study of the Community Rating System (CRS) outreach activities.²⁵

During the planning process the county reached out to other agencies that included:

- National Weather Service Advanced Hydrologic Prediction Service
- Illinois Emergency Management
- Illinois Dept. of Natural Resources
- Illinois State Water Survey
- Federal Emergency Management Agency
- Illinois Revenue
- National Climatic Data Center

²⁵ Federal Emergency Management Agency. *Rethinking Outreach in the Community Rating System (CRS): Activity 330 Pilot Program*. Report Submitted by Ogilvy Public Relations Worldwide. January 29, 2010.

- Community Rating Service
- Census Bureau
- State of Illinois
- US Army Corps of Engineers
- Illinois Mitigation Plan

Emergency Responders Involvement

As Alessandra Jerolleman and John Kiefer note in their recent edited volume on hazard mitigation, mitigation is the first phase of emergency management. Response, meanwhile, involves activities aimed at saving lives and property under emergency situations.²⁶ As first responders are responsible for protecting lives during natural hazards ranging from tornadoes to ice storms, they are acutely aware of the complexities involved in responding to various natural hazards and the extent to which mitigation strategies could reduce the nature and level of their initial responses. Accordingly, first responders from the different levels of government in the county were invited to participate in a half-day session at Principia College in 2004. This session was one of the early planning sessions of the county's work on the original mitigation plan. Principia College political science professors Brian Roberts and John Williams and students in Dr. Roberts' upper-division Public Policy Analysis class served as the moderators for the session. Participants were informed of the purpose and process of mitigation planning in an initial plenary session. Breakout sessions were held for the purpose of collecting information about emergency response activities associated with the response to natural hazards.



First Responder's Meeting

A survey administered during the session asked respondents to respond to three questions from their perspective as a first-responder. Responders were asked to rank the likelihood of particular hazards, the extent of harm to individual health and safety, and the extent of damage to various existing structures resulting from a natural disaster. Extreme temperatures, flash floods, thunderstorms, winter storms, tornadoes, and straight-line winds were deemed most likely to occur. While less likely to occur, tornadoes and earthquakes were identified as the hazards capable of imposing the most harm on county residents and extent of damage to structures. The participants also shared insights about the challenges associated with responding to the various

²⁶ Alessandra Jerolleman and John J. Kiefer, eds. *Natural Hazard Mitigation*. Boca Raton, FL: CRC Press. 2013, 24.

hazards – challenges that included facets such as the disruption of communication, impediments to reaching those in need (e.g., high water, debris, treacherous surfaces). When added to the rest of the information and research gathered for Jersey County’s plan, the perceptions of first-responders provide an important perspective in designing mitigation strategies contained in the eventual 2008 mitigation plan.

In 2011, first responders in the county were once again invited to Principia College for a similar working session moderated by students in Professor Williams’ American Government and Politics course. Participants included county board members, mayors of local municipalities, law enforcement officials, the county’s emergency management director, county highway department director, staff from the County Code Administrator’s office and Flood Plain Manager’s office as well as the regional chief of the state conservation police.

Public Participation

Step 3 of the planning process was to obtain information from the citizens in an effort to solicit broader public input on natural hazards and hazard mitigation beyond notices of public meetings (county board, municipal governments), teams of Principia College students from a social science research methods course taught by either Professor Roberts or Professor Williams, have prepared, conducted, compiled and analyzed public opinion surveys of Jersey County residents on three different occasions since 2004. These surveys have been designed to obtain a more accurate assessment of county residents’ concerns about natural hazards, including steps they have taken, or might be willing to take, to mitigate the effects of these hazards. As such, these surveys constitute important components of efforts to develop appropriate mitigation actions – action items designed to minimize the loss of life and protect public health, infrastructure, and public as well as private property. All of the mayors in the other participating communities in the plan distributed questionnaires to residents in their area.

One important aspect of the survey was to discover Jersey County residents’ greatest concerns relating to natural disasters. Given a choice of natural disasters respondents perceived as likely to affect the county, respondents were most concerned about tornadoes (more than 90% in both 2004 and 2012; see Table (1.3.4), this despite the fact that no more than 19% in any one survey (2012) reported having been impacted by a tornado within the last five years of the time of the survey. Certainly some of this concern is attributable to occurrences of not only incidents in the county (see earlier section of this report), but the highly destructive and publicized tornadoes in locations such as Joplin, Oklahoma City and Tuscaloosa in recent years. The damage tornadoes are capable of causing to property and the potential they bring for loss of life also likely accounts for the high level of concern among county residents. Large hail, severe/straight-line winds, and severe winter storms followed closely as disasters of notable concern to respondents. These three were also the leading natural disasters respondents reported as having experienced – results consistent for all three surveys. Roughly 2/3 of respondents in 2004 and 2012 were concerned with flooding. Given the flood of 1993 and significant flooding in 2008, one might expect respondents to be even more concerned with flooding. However, it is important to realize that the majority of those surveyed in each instance do not live in the floodplain. Tests conducted with information from the surveys reveal that the residents living in the floodplain are collectively more concerned about flooding than those residing elsewhere in the county.

Table 1.3.4 Summary of Surveys of Jersey County Residents Experience with and Concern About Natural Hazards

Survey Year	2004	2009	2012
Sample size	306	213	207
	<i>Percentage of Respondents Reporting Experiencing Hazard in Past 5 Years</i>		
Drought	n/a	n/a	24%
Earthquakes	<1%	19%	19%
Floods	8%	10%	21%
Large Hail	29%	27%	39%
Severe Winter Storms	18%	42%	45%
Severe/Straight Line Winds	51%	66%	76%
Subsidence/Soil Erosion	5%	7%	2%
Tornadoes	8%	6%	19%
Wildfires	0%	1%	6%
	<i>Percentage of Respondents Concerned About Hazard</i>		
Drought	n/a	n/a	n/a
Earthquakes	60%	n/a	73%
Floods	60%	n/a	69%
Large Hail	90%	n/a	89%
Severe Winter Storms	81%	n/a	86%
Severe/Straight Line Winds	90%	n/a	88%
Subsidence/Soil Erosion	63%	n/a	76%
Tornadoes	93%	n/a	92%
Wildfires	43%	n/a	69%

Notes: Percentage concerned reflects those who were extremely, very, concerned and somewhat concerned. The 2009 survey, which was primarily focused on how county residents would like to obtain information from the county about natural hazard mitigation, did not ask residents how concerned they were about the hazards impacting the county.

While many respondents were concerned about natural disasters and have taken some steps to protect themselves, the survey revealed a need for public information on measures that would make them and their property less susceptible to hazard mitigation. A majority of those surveyed in 2004 and 2009 (56 percent in both instances) indicated that they had not received any information about natural disaster preparedness. Fortunately, the survey allows the Planning

Team to see what types of communication would be most effective in reaching the largest number of Jersey County residents. In 2004, well over half of those surveyed reported that they did not have Internet access. However, by 2012, 79 percent of respondents said they had Internet access (interestingly, 83% of 2009 respondents responded affirmatively). In 2012, 81% of respondents agreed that the county should have a county web page, an action item that was achieved in January, 2014. The county web page allows Jersey County officials to communicate information to large segments of the population at a fairly minimal cost, particularly compared to mailers or frequent advertisements. Survey results for all three years did, however, reinforce the popularity of the *Alton Telegraph*, *Jersey County Shopper*, *Jersey County Journal*, and St. Louis radio and TV stations (see Table 1.3.5). Respondents evaluated these options as being the most effective potential sources for disseminating disaster preparedness information. More details on how these surveys have informed past and current plan action items are provided in a subsequent chapter.

In addition to the surveys the public was invited to all committee meetings and board meetings with an open public comment period at the end of the meetings. The draft of the updated plan was made available to the public through the county’s web site and was on display at the municipality’s city halls and the county’s board office for public comment. Chapter 3 discusses in detail the process of presenting the findings from this phase to the public and soliciting public input on mitigation goals and objectives.

Table 1.3.5 Sources of Information Used to Learn about Government Action Re: Natural Hazard Mitigation (2012 survey)

Jersey County Journal	68.7%
Alton Telegraph	61.4%
Jersey County Shopper	50.7%
Internet and websites	31.8%
St. Louis radio and television stations	29.3%
Mail, brochures, notices	23.2%
WJBM radio	22.2%
St. Louis Post-Dispatch	15.2%
Public workshops or meetings	12.6%
County website	11.6%
Local schools	9.6%
Local businesses	9.6%

Since one of the chief goals of developing a hazard mitigation strategy is to protect the lives, health, and property of county residents, it was essential that input was gathered from local citizens. The information gathered in this survey should help planners to develop effective mitigation policies by providing information on local concerns, levels of preparedness, and the need for information.

Reports to County Board or Board committees: Team leaders routinely brief the County Board on the status of the planning process. The entire board is briefed at least annually and the Special Projects Committee is briefed at least twice each year in considerably more detail. On occasion, Team members have briefed other key County Board committees. One example was a committee charged with development of a countywide building code. This hearing, which featured a presentation by Prof. Williams on the importance of building codes in hazard mitigation, was attended by local contractors, home inspectors, bankers, and activists. Reports and meeting minutes can be found in the Appendix.

Coordination with Other Studies and Reports: Jersey County has only one countywide planning or operation document, the Emergency Operations Plan of the county's Emergency Services and Disaster Agency. The plan is either tested annually or reviewed after significant emergency or disaster incidents.

The county has no economic development plan, however in 2014 a proposal for the Illinois Enterprise Zone with neighboring counties and municipalities were being discussed. The Illinois Enterprise Zone Act took effect in December of 1982 and was amended in 2012. In 2014 the County, City of Jerseyville and City of Grafton submitted their applications for the zone. The City of Jerseyville has had an economic development or master plan for a number of years and as of 2012 a TIF plan was put in place to attract more economic growth in sections of the city. The City of Grafton has a TIF Economic Plan and a Comprehensive Plan, which was shared with the Planning Team.

References

C.C. Hopper and Associates, *Draft of Economic Impact Analysis and Flood Recovery Strategy for Greene Jersey, and Calhoun Counties*

C.C. Hopper and Associates.

U.S. Geological Survey. USGS,. Fact Sheet 2009-3071. August 2009.

Center for Earthquake Research and Information. Recent Earthquakes in the Central U.S. http://www.ceri.memphis.edu/mag5-2_041808/index.html (date accessed, October 1, 2012).

NOAA; s National Weather Service Storm Prediction Center WCM Page. Average Annual Tornadoes per 10K Square Miles per State (1991-2010). <http://www.spc.noaa.gov/wcm/#torclim> (date accessed, June 1, 2013).

Illinois State Water Survey. Tornado Maps of Each County and Illinois. <http://www.isws.illinois.edu/atmos/statecli/tornado/NewMaps/Tornadoes-Jersey-County-Illinois.png> (date accessed, June 29, 2013)

<http://www1.ncdc.noaa.gov/pub/data/cmb/images/tornado/clim/totavg-ef3-ef5-torn1991-2010.gif>
National Climatic Data Center Storm Events Database. Jersey County, IL.

<http://www.ncdc.noaa.gov/stormevents> (date accessed, June 1, 2013).
National Climatic Data Center Storm Events Database. Jersey County, IL

<http://www.ncdc.noaa.gov/stormevents> (date accessed, Dec. 2015). An excessive heat event is when the heat index is 105 degrees Fahrenheit or greater for more than 3 hours a day for two consecutive days or when the heat index reaches 115 degrees Fahrenheit or more at any time during a day.

Richard L. Dart and Christina M. Volpi. *Earthquakes in the Central United States, 1699-2010*. Washington, D.C.: USGS. 2010, 5.

Richard L. Dart and Christina M. Volpi. *Earthquakes in the Central United States, 1699-2010*. Washington, D.C.: USGS. 2010, 5.

Data obtained from the Jersey County Code Administrator's Office. June 2013.

Oscar Brown Hamilton, ed.. *History of Jersey County, Illinois*. Chicago: Munsell Publishing Co. 1919.

Illinois Department of Transportation. U.S. 67 Corridor Project Overview.
www.dot.state.il.us/us67/Overview.html (date accessed, July 3, 2013)

Robert Lyons. "U.S. 67 Expands to Three Lanes." *Jersey County Journal*, May 31, 2013. On-line edition (date accessed, July 3, 2013).

Tom Bott. "Jersey Basks in Business Developments." *Alton Telegraph*, September 13, 2012. On-line edition. (date accessed, July 3, 2013).

Data supplied by Jersey County Building Permit Administrator's office, Dec. 2015

Illinois Dept. of Commerce & Economic Opportunity <https://www.illinois.gov/dceo> (date accessed 4/9/15)

<http://censusviewer.com/city/IL/Jerseyville> (date accessed 6/10/2013)

<http://censusviewer.com/city/IL/Grafton> (date accessed, June 10, 2013).

Intergovernmental Agreement dated Jan. 10, 2012; recorded on Jan. 19, 2012 Book 1748 Page 123

Federal Emergency Management Agency. *National Flood Insurance Program: Answers to Questions About the NFIP*. FEMA F-084. March 2011.

Federal Emergency Management Agency. *Rethinking Outreach in the Community Rating System (CRS): Activity 330 Pilot Program*. Report Submitted by Ogilvy Public Relations Worldwide. January 29, 2010.

Alessandra Jerolleman and John J. Kiefer, eds. *Natural Hazard Mitigation*. Boca Raton, FL: CRC Press. 2013, 24.