SURVIVAL FACTORS ATTACHMENT

Effingham County Emergency Management

Utilized Annexes

Teutopolis, IL

HWY23MH017

(61 pages)

Draft

Effingham County Multi-Jurisdictional All Hazards Mitigation Plan

Effingham County, Illinois

Participants:

Beecher City, Village of
Beecher City CUSD #20
Dieterich, Village of
Effingham, City of
Effingham County
Mason, Town of
Mound Township
Shumway, Village of
Teutolpolis, Village of
Watson, Village of
Watson Township

May 2020

The five year update of this Plan must be completed on or before (date).

EFFINGHAM COUNTY MULTI-JURISDICTIONAL ALL HAZARDS MITIGATION PLAN

EFFINGHAM COUNTY, ILLINOIS

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Researched and written for the Effingham County Multi-Jurisdictional
All Hazards Mitigation Planning Committee
by American Environmental Corporation

1.0 INTRODUCTION

Each year natural hazards (i.e., severe thunderstorms, tornadoes, severe winter storms, flooding, etc.) cause damage to property and threaten the lives and health of the residents of Effingham County. Since 1996, Effingham County has been included in three federally-declared disasters. **Figure I-1** identifies each declaration including the year the disaster was declared and the type of natural hazard that triggered the declaration. The natural hazard(s) recognized as contributing to the declaration for Effingham County is identified in bold.

Figure I-1
Federal Disaster Declarations: Effingham County

Declaration #	Year	Natural Hazard(s) Covered by Declaration
1112	1996	***severe storms; flooding***
1416	2002	***severe storms***; tornadoes; ***flooding***
1960	2011	***severe winter storm***; snowstorm

In the last 10 years alone (2010-2019), there have been 68 heavy rain events, 57 thunderstorms with damaging winds, 22 flash flood events, 21 excessive heat events, 16 severe winter storms, 10 severe storms with hail one inch in diameter or greater, six riverine flood events, four tornadoes, two droughts, two extreme cold events, and one lightning strike verified in the County.

While natural hazards cannot be avoided, their impacts can be reduced through effective hazard mitigation planning. This prevention-related concept of emergency management often receives the least amount of attention, yet it is one of the most important steps in creating a hazard-resistant community.

What is hazard mitigation planning?

Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and man-made hazards. This process helps the County and participating jurisdictions reduce their risk from these hazards by identifying vulnerabilities and developing mitigation actions to lessen and sometimes even eliminate the effects of a hazard. The results of this process are documented in an all hazards mitigation plan.

Why develop an all hazards mitigation plan?

By developing and adopting an all hazards mitigation plan, participating jurisdictions become eligible to apply for and receive federal hazard mitigation funds to implement mitigation actions identified in the plan. These funds can help provide local government entities with the opportunity to complete mitigation projects and activities that would not otherwise be financially possible.

The federal hazard mitigation funds are made available through the Disaster Mitigation Act of 2000, an amendment to the Robert T. Stafford Disaster Relief and Emergency Assistance Act, which provides federal aid for mitigation projects, but only if the local government entity has a Federal Emergency Management Agency (FEMA) approved hazard mitigation plan.

How is this plan different from other emergency plans?

An all hazards mitigation plan is aimed at identifying projects and activities that can be conducted prior to a natural or man-made disaster, unlike other emergency plans which provide direction on how to respond to a disaster after it occurs. This is the first time that Effingham County has developed a hazard mitigation plan. This update describes in detail the actions that can be taken to help reduce or eliminate damages caused by specific types of natural and man-made hazards.

1.1 PARTICIPATING JURISDICTIONS

Recognizing the benefits of having an all hazards mitigation plan, the Effingham County Board authorized the development of the Effingham County Multi-Jurisdictional All Hazards Mitigation Plan (hereto referred to as the Plan). The County then invited all the local government entities within Effingham County to participate. **Figure I-2** identifies the participating jurisdictions that are represented in the Plan update.

Figure I-2
Participating Jurisdictions Represented in the Plan

- Beecher City, Village of
- Beecher City CUSD #20
- Dieterich, Village of
- Effingham, City of
- Effingham County
- Mason, Town of
- Mound Township
- Shumway, Village of
- Teutopolis, Village of
- Watson Township
- Watson, Village of

1.2 COUNTY PROFILE

(Name) County is located in (region) Illinois and covers approximately (number) square miles. **Figure I-3** provides a location map of the County and the participating municipalities while **Figures I-4** and **I-5** identify the township boundaries and the Beecher City Community Unit School District #20 boundaries. The topography is described as a nearly level till plain dissected with gently sloping, shallow drainage ways and sand deposits along the East side of the Little Wabash River. The County is bounded on the north by Shelby and Cumberland Counties, to the east by Jasper County, to the south by Clay and Fayette Counties and to the west by Fayette County. The City of Effingham is the county seat.

Figure I-3
Location Map

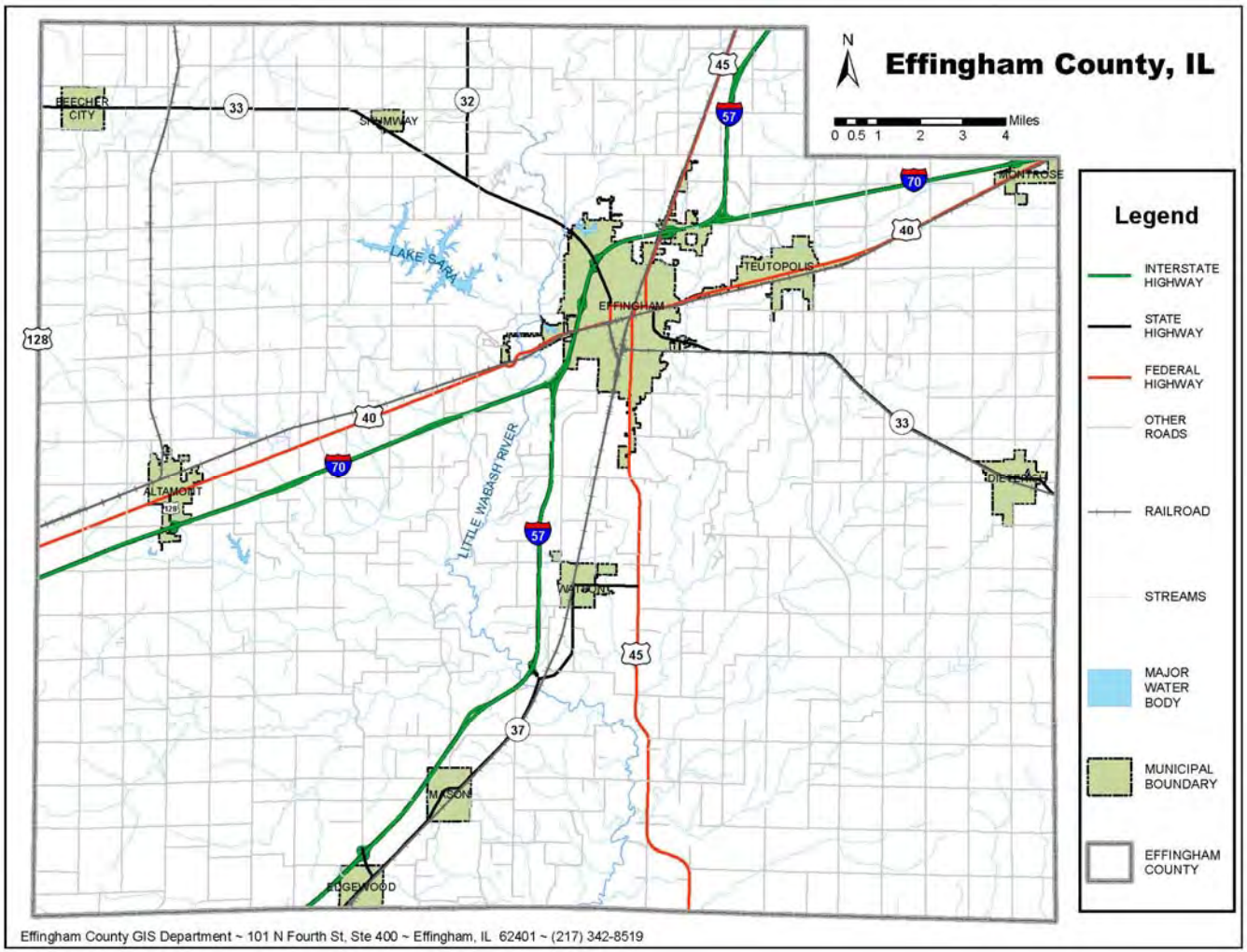


Figure I-4
Township Boundary Map

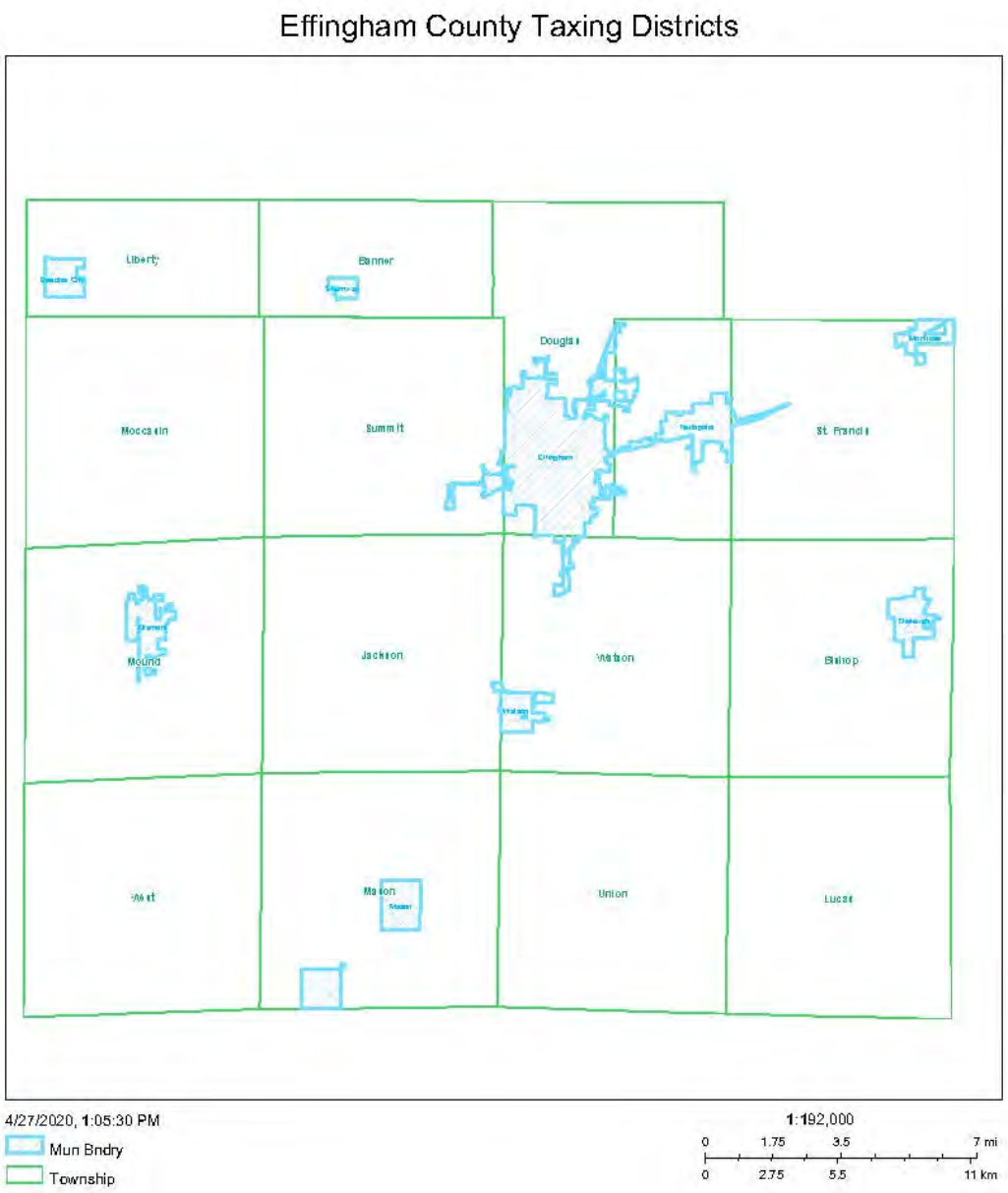
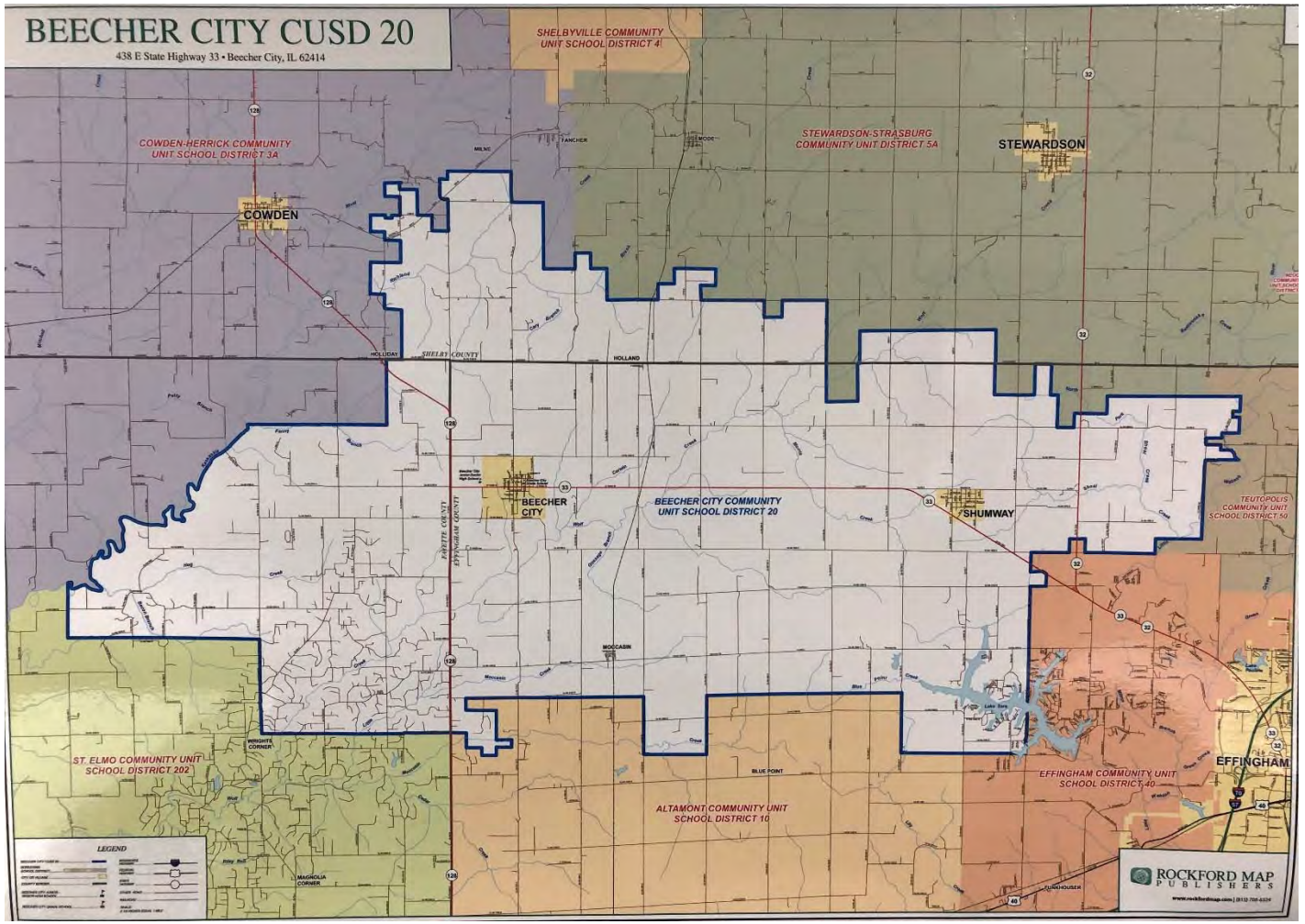


Figure I-5
Beecher City Community Unit School District #20 Boundary Map



Agriculture is the major enterprise in Effingham County. According to the 2017 Census of Agriculture, there were 1,193 farms in Effingham County occupying approximately 97.7% (299,389 acres) of the total land area in the County. The major crops include soybeans and corn while the major livestock includes hogs and cattle. The County ranks 9th in the State for livestock cash receipts and 50th for crop cash receipts.

Manufacturing in the County is primarily located in the City of Effingham. Effingham's unique location and transportation system has been the calling card for numerous industrial and commercial companies which have located in its business park and retail areas. In fact, the City's daytime population doubles because of this vast amount of development.

The largest employment sectors in Effingham County is healthcare and social assistance followed by manufacturing and then retail trade according to the Illinois Department of Commerce and Economic Opportunity. HSHS St. Anthony Hospital and Heartland Dental are the top two employers in the County.

Economic growth is hopeful for Effingham County. The City of Effingham was awarded a new Enterprise Zone on January 1, 2018. The Effingham Enterprise Zone has an initial life of 15 years, with the possibility of a 10-year extension. The original Enterprise Zone was in effect from 1988 to 2017 and resulted in over 475 projects, &700 million in investment, 4,000 new jobs and 2,500 jobs retained.

In 2017 an Opportunity Zone was also passed for Effingham County. The Tax Cuts and Jobs Act passed at the end of December 2017 allows Governors in each state to designate certain census tracts as Opportunity Zones. The Opportunity Zone program was enacted to spur economic development by providing tax benefits to investors encouraging long-term private sector investments in low-income communities.

Figure I-6 provides demographic data on the County and each of the participating municipalities and townships along with information on housing units and assessed values. The assessed values are for all residential structures and associated buildings (including farm homes and buildings associated with the main residence.) The assessed value of a residence in Effingham County is approximately one-third of the market value.

1.3 LAND USE AND DEVELOPMENT TRENDS

Population growth and economic development are two major factors that trigger changes in land use. Effingham County is a rural community with a population that has seen a steady incline between 1900 and 2000 from 20,465 to 34,264. Between 2000 and 2010 the population decreased negligibly by 0.1% from 34,264 to 34,242. All the participating municipalities, with the exception of Dieterich and Watson, experienced a decrease in their populations between 2000 and 2010.

Land use in Effingham County is primarily agricultural. As discussed in the previous section, approximately 97.7% of the land within the County is used for farming practices. Agriculture is and will continue to be a major industry within the County and a vital part of the County's economy.

Figure I-6
Demographic Data by Participating Jurisdiction

Participating Jurisdiction	Population (2010)	Projected Population (2025)	Total Area (Sq. Miles) (2010)	Number of Housing Units (2010)	Total Assessed Value of Housing Units (2018)
Effingham County (unincorporated)	15,043	14,576	465.600	5,979	$258,917,601
Beecher City	463	449	0.902	215	$2,896,400
Dietrich	617	598	1.160	249	$11,075,620
Effingham (city)	12,328	11,945	9.925	5,696	$184,304,811
Mason	345	334	1.292	155	$2,667,670
Shumway	202	196	0.332	91	$1,849,350
Teutopolis	1,530	1,483	1.629	590	$35,481,680
Watson	754	731	1.119	281	$7,177,770
Mound Township	3,648	---	37.098	1,263	$44,880,650
Watson Township	3,193	---	35.831	1,494	$41,216,580

Sources: Pam Braun, Effingham County Supervisor of Assessments.
Illinois Department Public Health, Population Projects for Illinois Counties 2010 to 2025.
U. S. Census Bureau, 2010 Census U.S. Gazetteer Files.
U.S. Census Bureau, American FactFinder.

According to the Effingham County Emergency Management Agency Emergency Manager, no substantial development and economic initiatives are planned in the participating jurisdictions in the next five years.

There are no other large-scale economic development initiatives underway in the County. Substantial changes in land use (from forested and agricultural land to residential, commercial and industrial) are not anticipated within the County in the immediate future. No sizeable increases in commercial or industrial developments are expected within the next five years.

2.0 PLANNING PROCESS

The Effingham County Multi-Jurisdictional Natural Hazards Mitigation Plan (the Plan) was developed through the Effingham County Multi-Jurisdictional Natural Hazards Mitigation Planning Committee (Planning Committee). The Plan was prepared to comply with the Disaster Mitigation Act of 2000 and incorporates the Federal Emergency Management Agency's (FEMA) 10-step planning process approach. **Figure PP-1** provides a brief description of the process utilized to prepare this Plan.

Figure PP-1
Description of Planning Process

Tasks	Description
Task One: Organize	The Planning Committee was formed with broad representation and specific expertise to assist the County and the Consultant in updating the Plan.
Task Two: Public Involvement	Early and ongoing public involvement activities were conducted throughout the Plan's development to ensure the public was given every opportunity to participate and provide input.
Task Three: Coordination	Agencies and organizations were contacted to identify plans and activities currently being implemented that impact or might potentially impact hazard mitigation activities.
Task Four: Risk Assessment	The Consultant identified and profiled the natural hazards that have impacted the County and conducted a vulnerability assessment to evaluate the risk to each participating jurisdiction.
Task Five: Goal Setting	After reviewing existing plans and completing the risk assessment, the Consultant assisted the Planning Committee in updating the goals and objectives for the Plan.
Task Six: Mitigation Activities	The participating jurisdictions were asked to identify mitigation actions that had been started and/or completed since the original Plan was adopted. In addition, they were also asked to identify any new mitigation actions based on the results of the risk assessment. The new mitigation actions were then analyzed, categorized and prioritized.
Task Seven: Draft Plan	The draft Plan summarized the results of Tasks One through Six. In addition, it described the responsibilities to monitor, evaluate and update the Plan. The draft Plan was reviewed by the participants and a public forum was held to give the public an additional opportunity to provide input. Comments received were incorporated into the draft Plan and submitted to the Illinois Emergency Management Agency (IEMA) and FEMA for review and approval.
Task Eight: Final Plan	Comments received from IEMA and FEMA were incorporated in to the final Plan. The final Plan was then submitted to the County and participating jurisdictions for adoption. The Plan will be reviewed periodically and updated again in five years.

The normal planning process generally takes 12 to 14 months to complete. Due to changes in the funding mechanism, the process was compressed and accelerated to ensure the draft Plan was completed and submitted to IEMA no later than May 31, 2020. To accommodate this schedule, three Planning Committee meetings instead of five were conducted and additional coordination was handled via verbal and written correspondence.

The accelerated schedule was further complicated by the Covid-19 outbreak in the winter/spring of 2020. Executive orders 2020-10, 2020-18 and 2020-32 issued and extended stay-at-home order and prohibited any gatherings of more than 10 people from Saturday March 21 through Sunday, May 31, 2020. As a result the third Planning Committee meeting was not conducted in the traditional manner and was instead handled as a teleconference.

The Plan and development was led at the staff level by Pamela Jacobs, the Effingham County Emergency Management Agency (EMA) Emergency Manager. American Environmental Corp. (AEC), an environmental consulting firm, with experience in hazard mitigation, risk assessment and public involvement, was employed to guide the County and participating jurisdictions through the planning process.

Participation in the planning process, especially by the County and local government representatives, was crucial to the development of the Plan. To ensure that all participating jurisdictions took part in the planning process, participation requirements were established. Each participating jurisdiction agreed to satisfy the following requirements in order to be included in the Plan. All of the participating jurisdictions met the participation requirements.

- Attend at least one of the three Planning Committee meetings.
- Identify/submit a list of documents (i.e., plans, studies, reports, maps, etc.) relevant to the natural hazard mitigation planning process.
- Identify/submit a list of critical infrastructure and facilities.
- Review the risk assessment and provide additional information on events and damages when available.
- Participate in the of the mitigation goals.
- Submit a list of mitigation actions started and/or completed since the adoption of the original Plan.
- Identify and submit a list of new mitigation actions.
- Review and comment on the draft Plan.
- Formally adopt the Plan.
- Where applicable, incorporate the Plan into existing planning efforts.
- Participate in the Plan maintenance.

2.1 PLANNING COMMITTEE

As previously mentioned, at the start of the planning process, the Effingham County Multi-Jurisdictional Natural Mitigation Planning Committee was formed to develop the hazard mitigation plan. The Planning Committee included representatives from each participating jurisdiction, as well as emergency services (American Red Cross, fire and law enforcement), business, education and healthcare.

Figure PP-2 details the entities represented on the Planning Committee and the individuals who attended on their behalf. The Planning Committee was chaired by the Effingham County EMA.

Figure PP-2
Effingham County Planning Committee Member Attendance Record

Representing	Name	Title	11/18/2019	2/27/2020	5/19/2020
Altamont, City of	Milleville, Dan	Commissioner	X		
Altamont, City of	Rippetoe, Jason	Mayor	X		
American Environmental Corp.	Bostwick, Andrea	Senior Project Manager	X	X	
American Environmental Corp.	Krug, Zachary	Environmental Specialist	X	X	
American Red Cross	Bryant, Brad	Disaster Relief		X	
American Red Cross	Goodwin, Valerie	Disaster Program Manager	X		
Beecher City CUSD #20	Lark, Philip	Superintendent	X		
Beecher City, Village of	Felty, Rita	Village President	X		
Beecher City, Village of	Wood, Leslie	Trustee		X	
Dieterich Fire Protection District	Martin, Ross	Fire Chief		X	
Dieterich, Village of	Hardiek, Brad	President		X	
Effingham County - Board	Campbell, David	Vice Chairman	X		
Effingham County - Board	McCain, Doug	Board Member	X		
Effingham County - Board	Mumma, Heather	Board Member	X		
Effingham County - Board	Niemann, James	Board Chairman	X	X	
Effingham County - Board	Arnold, Rob	Board Member	X	X	
Effingham County - Coroner's Office	Hoene, Karen	Deputy Coroner		X	
Effingham County - Coroner's Office	Rhodes, Kim	Coroner	X	X	
Effingham County - EMA	Boone, Jill	Volunteer		X	
Effingham County - EMA	Bullard, Kevin	Commander	X		
Effingham County - EMA	Jacobs, Pam	Emergency Manager	X	X	
Effingham County - EMA	Wright, Jim	Volunteer Coordinator	X		
Effingham County - GIS	Zerrusen, Jill	Manager	X	X	
Effingham County - Health Department	Feldkamp, Karen	Emergency Preparedness Coordinator	X	X	
Effingham County - Highway Department	Hoene, Trent	Highway Maintenance	X	X	
Effingham County - Highway Department	Koester, Greg	County Engineer	X		
Effingham County - LEPC	Toops, Phil	Public Transportation - Compliance & Oversight	X	X	
Effingham County - Sheriff's Office	Mahon, David	Sheriff	X	X	
Effingham County - Supervisor of Assessment's Office	Braun, Pam	Supervisor of Assessments	X		
Effingham Daily News	Mills, Charles	Reporter / Videographer		X	
Effingham, City of	Miller, Steve	City Administrator	X	X	
Effingham, City of	Tegeler, Kim	EMA Coordinator	X		
Effingham, City of	Tutko, Bob	Fire Chief	X	X	
Fayette County Health Department	Craig, Kendra	Health Educator / PHEP	X		
HSHS St. Anthony	Murbarger, Deb	ER Director		X	
Illinois Department of Agriculture	Ballman, Mark	Field Veterinarian	X		
Illinois Emergency Management Agency	Croy, Adam	Regional Coordinator, Region 9		X	
MABAS 54	Agney, Troy	President		X	
Mason, Town of	Flowers, Don	Mayor	X	X	
Mound Township	Schultz, Rodney	Highway Commissioner	X	X	
Mound Township	Simpson, Jeffrey	Board Member	X		
National Trails Radio	Cordes, Byron	Representative		X	
Servpro of Effingham	Remm, Chuck	Marketer	X		
Shumway, Village of	Helmbacher, Derrick	Clerk	X	X	
Teutopolis Township	Rauch, Tom	Highway Commissioner	X		
Teutopolis Township	Semple, Charles	Trustee		X	
Teutopolis, Village of	Hess, Greg	Village President		X	
Tri-County Fire Protection District	Lorton, Janet	Member	X		
Tri-County Fire Protection District	Niccum, Angie	Executive Assistant	X	X	
Watson Fire Protection District	Percival, Darren	Fire Chief		X	
Watson Township	Arnold, Rob	Clerk	X	X	
Watson Township	Bergfeld, Stephen	Highway Commissioner	X	X	
Watson, Village of	Freeman, Tom	Village Clerk	X	X	

Additional technical expertise was provided by the staff at the Illinois Emergency Management Agency, Illinois Emergency Management Agency Region 9, Illinois Department of Natural Resources Office of Water Resources, Illinois Environmental Protection Agency and MABAS 54.

Mission Statement

Based on early communications with Planning Committee members, a draft mission statement was developed that described their objectives for the Plan and distributed electronically for review. The Planning Committee then reviewed the mission statement at the first meeting and approved it with no changes.

"The mission of the Effingham County Multi-Jurisdictional All Hazards Mitigation Planning Committee is to develop a mitigation plan that documents projects and activities to reduce the negative impacts of natural and man-made hazards on citizens, infrastructure, private property and critical facilities."

Planning Committee Meetings

The Planning Committee met three times between November 2019 and May 2020. **Figure PP-2** identifies the representatives present at each meeting. **Appendices A** and **B** contain copies of the attendance sheets and meeting minutes for each meeting. The purpose of each meeting, including the topics discussed, is provided below.

As mentioned previously, the process was compressed and accelerated to ensure the draft Plan was completed and submitted to IEMA no later than May 31, 2020. To accommodate this schedule, three Planning Committee meetings instead of five were conducted and additional coordination was handled via verbal and written correspondence.

As a result of the Covid-19 outbreak in the Winter/Spring 2020, the third Planning Committee meeting was not conducted in the traditional manner. Instead it was handled via teleconference to comply with the stay-at-home order and gathering restrictions.

First Planning Committee Meeting – 11/18/2019

At this meeting the planning process was explained to the Planning Committee members, including a brief overview of what a natural hazards mitigation plan is, why it needs to be developed, and the benefits. As part of the plan development, representatives for the County and the participating jurisdictions were asked to complete the forms entitled "List of Existing Planning Documents," "Critical Facilities" and "Identification of Severe Weather Shelters" and return them before the next meeting. Copies of a "Hazard Events Questionnaire," "Damages to Critical Facilities Damage Questionnaire" and "Citizen Questionnaire" were also distributed.

Committee members were asked to identify any natural hazard events that have occurred within the County. A discussion regarding the hazards to be included in the Plan was conducted and Committee members chose not to include landslides or mine subsidence due to their limited impact on the people and infrastructure within the County. Portions of the draft natural hazard risk assessment section were then presented for review.

Following the review of risk assessment, the Planning Committee members participated in an exercise to help calculate the Risk Priority Index which can assist participants in determining hazards present the highest risks and therefore which ones to focus on when formulating mitigation projects and activities.

Next, mitigation actions were defined and examples were discussed. As part of the plan development, individual mitigation action lists will be created for each participating jurisdiction. Ideas for potential mitigation projects and activities were presented. Representatives for the County and the participating jurisdictions were asked to complete the form entitled "Hazard Mitigation Projects" and return them before the next meeting.

Drafts of the mission statement and mitigation goals were presented for review. After a discussion, the Planning Committee chose to finalize both with no revisions.

Finally, community participation was discussed. The County and participating jurisdictions were asked to make information available on the planning process at their offices and in their communities.

Second Planning Committee Meeting – 02/27/2020

At this meeting a summary of the County's man-made hazards risk assessment was presented for review. The Planning Committee members then discussed vulnerable community assets and completed the form entitled "Critical Facilities Vulnerability Survey" which will be used in the vulnerability analyses. The results of the Risk Priority Index exercise conducted at the previous meeting were presented. Thunderstorms with damaging winds scored the highest followed by severe winter storms, heavy rains and tornadoes.

Next, an explanation of what a mitigation actions prioritization methodology is was provided. The various ways that mitigation actions can be prioritized and example methodologies were discussed. The Planning Committee chose to use a methodology based on hazard frequency and degree of mitigation.

A presentation on how the mitigation projects and activities identified by the participating jurisdictions would be presented in the Plan was provided. Then, the Planning Committee members reviewed the draft jurisdiction-specific mitigation action tables which identified and prioritized the new mitigation projects and activities submitted by the participants. Members were given the opportunity to add additional projects and activities to their tables.

The sections outlining the mitigation strategy and plan maintenance were also reviewed. The participating jurisdictions will meet annually to monitor the status of the mitigation projects and activities, evaluate the effectiveness of the Plan and provide information on the events that have occurred since the committee met previously. The Plan must be reviewed, revised and resubmitted to IEMA and FEMA at least once every five years. The public forum and adoption process were then discussed, and a date for the public forum was set.

Third Planning Committee Meeting – 05/19/2020
At this Planning Committee meeting the public was provided the opportunity to participate in a teleconference and given the opportunity to ask questions about the draft Plan which was made available online.

2.2 PUBLIC INVOLVEMENT

To engage the public in the planning process, a comprehensive public involvement strategy was developed. The strategy was structured to engage the public in a two-way dialogue, encouraging the exchange of information throughout the planning process. A mix of public involvement techniques and practices were utilized to:

- disseminate information;
- identify additional useful information about natural hazard occurrences and impacts;
- assure that interested residents would be involved throughout the Plan's development; and
- cultivate ownership of the Plan, thus increasing the likelihood of adoption by the participating jurisdictions.

The dialogue with the public followed proven risk communication principles to help assure clarity and avoid overstating or understating the impacts posed by the natural hazards identified in the Plan. The following public involvement techniques and practices were applied to give the public an opportunity to access information and participate in the dialogue at their level of interest and availability.

Citizen Questionnaire
A citizen questionnaire was developed to gather facts and gauge public perceptions about natural hazards that affect Effingham County. The questionnaire was distributed to the Planning Committee members who were encouraged to make it to their residents. A copy of the questionnaire is contained in **Appendix C**.

A total of twenty-three (23) questionnaires were completed and returned to the Planning Committee. Questionnaires were completed by residents in each participating jurisdiction, with the exception of Shumway. These responses provide useful information to decision makers as they determine how best to disseminate information on natural hazards and safeguard the public. Additionally, these responses identify the types of projects and activities the public is most likely to support. The following provides a summary of the results.

- Respondents felt that severe summer weather was the most frequently encountered natural hazard in Effingham County followed by severe winter storms, flooding, and extreme heat. These results are consistent with the weather records compiled for the County and as described in this Plan.
- The most effective means of communication identified by respondents to disseminate information about natural hazards were social media (Facebook, Twitter, etc.) and the internet followed closely by radio and the Municipal / County Government. Information disseminated via the mail and fact sheets/ brochures also received strong support among respondents.

- ❖ In terms of the most needed mitigation projects and activities, the following four categories received the strongest support:
  - ➢ install/maintain sirens and other alert systems (70%);
  - ➢ maintain power during storms by burying power lines, trimming trees and/or purchasing backup generators (65%);
  - ➢ maintain roadway passages during snow storms and heavy rains (55%);
  - ➢ retrofit critical infrastructure (50%).

FAQ Fact Sheet

A "Frequently Asked Questions" fact sheet was created and disseminated to help explain what a natural hazards mitigation plan is and briefly described the planning process. The fact sheet was made available at the participating jurisdictions. A copy of the fact sheet is contained in **Appendix D**.

Press Releases

Press releases were prepared and submitted to local media outlets prior to each Planning Committee meeting. The releases announced the purpose of the meetings and how the public could become involved in the Plan's development. **Appendix E** contains a list of the media outlets that received the press releases while copies of the releases and any news articles published can be found in **Appendix F**.

Planning Committee Meetings

All of the meetings conducted by the Planning Committee were open to the public and publicized in advance to encourage public participation. At the end of each meeting, time was set aside for public comment. In addition, Committee members were available throughout the planning process to talk with residents and local government officials and were responsible for relaying any concerns and questions voiced by the public to the Planning Committee.

Public Forum

Due to the Covid-19 outbreak, the final meeting of the Planning Committee which was to be held as an open house public forum on Tuesday, April 14, 2020 was cancelled. Executive Orders 2020-10, 2020-18 and 2020-32 issued and extended a stay-at-home order and prohibited any gatherings of more than 10 people from Saturday, March 21 through Sunday, May 31, 2020. Given the May 31 plan submission deadline and the extension of the stay-at-home order, IEMA and FEMA agreed to allow the County to conduct the public forum via teleconference and place the draft Plan for review and comment.

At the public forum teleconference, held on Tuesday, May 19, a brief summary of the planning process was provided; the Plan's availability was discussed and individuals were given the opportunity to ask questions or provide comments. Individuals participating in the public forum were provided a two-page handout summarizing the planning process and directed to an online comment survey that could be used to provide feedback on the draft Plan. **Appendices G** and **H** contain copies of these materials.

Public Comment Period

The draft Plan was made available for public review and comment on the County's website from May 19 through May 26, 2020. Those unable to access the Plan via the website were directed to contact the Effingham County EMA Emergency Manager to view a paper copy of the Plan. Individuals were encouraged to submit their comments electronically.

Results of Public Involvement

The public involvement strategy implemented during the planning process created a dialogue among participants and interested residents, which resulted in many benefits, a few of which are highlighted below.

- *Acquired additional information about natural hazards.* Verifiable hazard event and damage information was obtained from participants that presents a clearer assessment of the extent and magnitude of natural hazards that have impacted the County.
- *Obtained critical facilities damage information*. Data collection surveys soliciting information about critical facilities damaged by natural hazards were used to supplement information obtained from government databases. This information was vital to the preparation of the vulnerability analysis.
- *Increased awareness of the impacts associated with natural hazard events within the County*. Understanding how mitigation actions can reduce risk to life and property helped generate over ***120 mitigation projects and activities*** at the local level that had not been previously identified in any other planning process. In addition, two townships, seven municipalities and one school district chose to participate in the Plan's development.

2.3 PARTICIPATION OPPORTUNITIES FOR INTERESTED PARTIES

Businesses, schools, not-for-profit organizations, neighboring counties, and other interested parties were provided multiple opportunities to participate in the planning process. Wide-reaching applications were combined with direct, person-to-person contacts to identify anyone who might have an interest or possess information which could be helpful in developing the Plan.

Business/ Community Organizations

Input was sought from the business community to provide balance and context for discussions on property damages, not only to business, but also to residences. A representative from Servpro of Effingham and National Trails Radio served on the Planning Committee.

Schools

In Superintendent from Beecher City CUSD #20 served on the Planning Committee. He coordinated with other members of the district in considering what types of mitigation projects and activities would be most beneficial.

Healthcare

Input was sought from the healthcare community. Representatives from HSHS St. Anthony's and the Effingham County Health Department attended all the Planning Committee meetings and provided input into the planning process.

Neighboring Counties
A memo was sent to EMA/ESDA/OEM Emergency Managers in the neighboring counties inviting them to participate in the mitigation planning process. The counties contacted included Clay, Cumberland, Fayette, Jasper and Shelby. **Appendix I** contains a copy of the invitation memo.

2.4 INCORPORATING EXISTING PLANNING DOCUMENTS

As part of the planning process, the County and each participating municipality was asked to identify and provide existing documents (plans, studies, reports and technical information) relevant to the Plan update. **Figure PP-3** summarizes the availability of existing planning documents by participating jurisdiction. These documents were reviewed and incorporated into the Plan update whenever applicable.

Effingham County and most of the participating jurisdictions have limited resources and abilities to expand on and improve the existing policies and programs identified in Figure PP-3. This conclusion is based on an examination of their capabilities related to: staff and organization; technical capability; fiscal situation; policies and programs; present legal authority; and political resolve.

The lack of legal authority and policies/programs currently in place, especially with regards to building and zoning ordinances, hamper the participating jurisdictions' abilities to expand and strengthen existing policies and programs. Only two the participating jurisdictions have comprehensive plan in place. While four of the municipalities have building codes in place, the County and the remaining municipalities do not. A general resistance from many residents towards these types of regulations has resulted in an unwillingness by county and municipal officials to implement such policies. In addition, the fiscal and staffing situations of many of the participating jurisdictions are extremely limited, bordering on inadequate in some cases. Many local government officials are part-time and lack the technical expertise and funds to expand or implement new programs and policies.

Overcoming these limitations will require time and a range of actions including, but not limited to: improved general awareness of natural hazards and the potential benefits that may come from the development of new standards in terms of hazard loss prevention and the identification of resources available to expand and improve existing policies and programs should the opportunity arise. These actions have been initiated through the planning process, and some of the initial results are noted below.

- ***Awareness***. Participants in the Plan development process now have more information that they are sharing with residents about the damages caused by natural hazards. Before the development of the AHMP in Effingham County, knowledge about natural hazard damages was largely anecdotal and stored piecemeal in files not accessible by the general public. This shared information can help change attitudes and foster a collective understanding of the need to work on loss prevention.
- ***Planning & Economic Support***. Effingham County is a member of the South Central Illinois Regional Planning and Development Commission. This Commission provides planning support and assists members in obtaining grants and loans. Participants were made aware of the services offered by the Commission and encouraged to contact them.

- ***State Government Support***. During the Plan development process, the Planning Committee was told repeatedly how support for existing programs as well as funding for mitigation actions can come from sources other than IEMA and FEMA. Specific examples were provided to all participants. The Illinois Department of Agriculture (IDOA) and the Illinois Environmental Protection Agency (IEPA), and the Illinois Department of Natural Resources (IDNR), have helped other counties and municipalities with improving existing programs by filling the gaps when ordinances and funding is non-existent.

Figure PP-3
Existing Planning Documents by Participating Jurisdiction

Existing Planning Documents	Participating Jurisdiction										
	Effingham County	Beecher City	Dieterich	Effingham	Mason	Shumway	Teutopolis	Watson	Mound Township	Watson Township	Beecher City CUSD
PLANS											
Municipal/County											
Comprehensive Plan			X				X				
Emergency Management Plan	X	X		X							
Land Use Plan			X				X	X			
Townships											
Road/Bridge Improvement Plan									X		
Park/Recreational Area Shelter Plan											
School Districts											
Strategic Plan											
Capital Improvement Plan											
Crisis Plan											X
CODES & ORDINANCES											
Municipal/County											
Building Codes		X		X			X	X			
Drainage Ordinances		X		X			X	X			
Historic Preservation Ordinance											
Subdivision Ordinance(s)	X		X	X			X	X			
Zoning Ordinances			X	X			X	X			
Townships											
Building Codes											
Septic Ordinance/Sewage Disposal Plan											
MAPS											
Municipal/County											
Existing Land Use Map			X	X			X	X			
Infrastructure Map	X		X	X	X		X				
Zoning Map			X	X			X				
Townships											
Road/Bridge Map									X		
Park/Recreation Map											
Zoning Map											
Transit System Route Map											
Food Pantry Location Map											
School Districts											
District Boundary Map											X
Floor Plan Map											X
OTHER TECHNICAL DOCUMENTS											
Municipal/County											
Flood Ordinance(s)			X	X			X				
Flood Insurance Rate Maps				X			X				
Repetitive Flood Loss List											
Elevation Certificates for Buildings							X				
Townships											
Property Tax Assessments											
Treasurer's Report									X		
Food Pantry Location/User Report											

3.0 RISK ASSESSMENT

Risk assessment is the process of evaluating the vulnerability of people, buildings and infrastructure in order to estimate the potential loss of life, personal injury, economic injury and property damage resulting from natural and man-made hazards. This section summarizes the results of the risk assessment conducted on the natural and man-made hazards in Effingham County. The information contained in this section was gathered by evaluating local, state and federal records from the last 30 to 70 years.

This risk assessment identifies the natural and man-made hazards deemed most important to the Planning Committee and includes a profile of each hazard that identifies past occurrences, the severity or extent of the events, and the likelihood of future occurrences. It also provides a vulnerability analysis which identifies the impacts to public health and property, evaluates the assets of the participating jurisdictions (i.e., residential buildings, critical facilities and infrastructure) and estimates the potential impacts each natural hazard would have on the health and safety of the residents as well as buildings, critical facilities and infrastructure. Where applicable, the differences in vulnerability between participating jurisdictions are described.

The subsequent sections provide detailed information on each of the selected natural hazards. The sections are color coded and ordered by the frequency with which the natural hazard has previously occurred within the County. Each natural hazard section contains three subsections: hazard identification, hazard profile and hazard vulnerability.

Hazard Selection

One of the responsibilities of the Planning Committee was to determine which hazards to include in the Plan. Over the course of the first two meetings, the Planning Committee members discussed their experiences with natural and man-made hazard events and reviewed information on various hazards. After much discussion, the Planning Committee chose to include the following hazards in this Plan:

- severe storms (thunderstorms, hail, lighting & heavy rain)
- severe winter storms (snow, ice & extreme cold)
- floods
- excessive heat
- tornadoes
- drought
- earthquakes
- dam failures
- man-made hazards including:
  - hazardous substances (generation, transportation & storage/handling)
  - waste disposal
  - hazardous materials incidents
  - waste remediation
  - terrorism

The Planning Committee chose not to include the following hazards in the Plan: levee failures, mine subsidence and landslides. According to the US Army Corps of Engineers, there are no levees located in Effingham County or any adjoining counties that have the potential to cause adverse impacts. A review of the USGS Landslide Susceptibility Viewer indicates that all of the County has a low incidence of landslides. The Illinois State Geological Survey's *Landslide*

Inventory of Illinois do not contain any instances of landslide in Effingham County and discussions with the Planning Committee did not reveal any isolated problems.

Sinkholes commonly occur in areas where carbonate rock formations characteristic of karst geology are present. Mapping prepared by the Illinois State Geological Survey (ISGS) shows that there are no karst geologic characteristics present in Effingham County. In Illinois land subsidence general occurs in areas where coal mining has been conducted. ISGS's *Coal Mines and Underground Industrial Mines* map shows that virtual no underground or surface mining has occurred previously in Effingham County.

Risk Priority Index

After reviewing the preliminary results of the risk assessment at the second meeting, Planning Committee members and the participating jurisdictions were asked to complete a Risk Priority Index (RPI) exercise for the hazards that have the potential to impact the County and participating jurisdictions. The RPI provides quantitative guidance for ranking the hazards and offers participants with another tool to determine which hazards present the highest risk and therefore which ones to focus on when formulating mitigation actions.

Each hazard was scored on three categories: 1) frequency, 2) impacts on life and health and 3) impacts on property and infrastructure. A scoring system was developed that assigned specific factors to point values ranging from 1 to 4 for each category. The higher the point value, the greater the risk associated with that hazard. **Figure R-1**, located at the end of this section, identifies the factors and point values associated with each category. Participants were asked to score the selected hazards based on the perspective of the entity they represented on the Planning Committee.

The Consultant took the point values assigned to each category and averaged the remaining results and came up with an overall value for each category. The values for each category were then added together to calculate a RPI score for each hazard. A ranking was then assigned to each hazard based on the RPI score. **Figures R-2** and **R-3**, located at the end of this section, provides the RPI scores and rankings for the County and participating municipalities while **Figure R-3** provides the scores and rankings for the participating special districts (townships and CUSD #20.)

Critical Facilities & Infrastructure

Critical facilities and infrastructure are structures, institutions and systems that are critical for life safety and economic viability and necessary for a community's response to and recovery from emergencies. The loss of function of any of these assets can intensify the severity of the impacts and speed of recovery associated a hazard event. Critical facilities and infrastructure may include, but are not limited to the following:

- ***Essential Facilities***: Facilities essential to the health and welfare of the whole population including hospitals and other medical facilities, police and fire stations, emergency operations centers, evacuation shelters and schools.
- ***Government Facilities***: Facilities associated with the continued operations of government services such as courthouses, city/village halls, township buildings and highway/maintenance centers.

- ***Infrastructure Systems***: Infrastructure associated with drinking water, wastewater, transportation (roads, railways, waterways), communication systems, electric power, natural gas and oil.
- ***Housing Facilities***: Facilities that serve populations that have access and function needs such as nursing homes, skilled and memory care facilities, residential group homes and day care centers.
- ***High Potential Loss Facilities***: Facilities that would have an impact or high loss associated with them if their functionality is compromised such as nuclear power plants, dams, levees, military installations and facilities housing industrial or hazardous materials.
- ***Gathering Places***: Facilities such as parks, libraries, community centers and churches.

As part of the planning process each participating jurisdiction completed a questionnaire identifying the critical facilities and infrastructure located within their jurisdiction, both publicly and privately-owned. **Figure R-4**, located at the end of this section, identifies the number of critical facilities and infrastructure located in each participating jurisdiction for select categories. Identifying these assets makes local leaders more aware of the critical facilities and infrastructure located within their jurisdictions and helps them make informed choices on how to better protect these key resources.

While considered "local government entities" for planning purposes, neither the townships or Beecher City Community Unit School District #20 (CUSD) have an extensive inventory of assets in which to consider when conducting the risk assessment. Beech City CUSD's critical facilities are all located within a participating municipality (Beecher City). Since the assets of the CUSD are located within a participating municipality and are a subset of this municipality's critical facilities, their risk is considered to be the same or similar to the risk experienced by the municipalities for those hazards that either impact the entire planning area or can occur at any location within the planning area (i.e., severe storms, severe winter storms, etc.) The same is true for the Mound and Watson Township buildings which are located in Altamont and Watson. For those hazards where the risk to the CUSD and the Mound and Watson Township buildings varies from the risk facing the municipalities, a separate narrative assessment will be provided under the appropriate hazard's vulnerability subsection.

Both townships also have critical facilities in unincorporated Effingham County. Their risk is considered to be the same or similar to the risk experienced by the County for those hazards that either impact the entire planning area or can occur at any location within the planning area (i.e., severe storms, severe winter storms, etc.) For those hazards where the risk to township critical facilities varies from the risk facing the planning area (i.e., County), a separate narrative assessment will be provided under the appropriate hazard's vulnerability subsection.

Critical Facilities Vulnerability Survey

The participating jurisdictions were also asked to complete a Critical Facilities Vulnerability Survey at the second meeting to assist in the preparation of an overall summary of each jurisdiction's vulnerability to the studied hazards. The Survey asked participants to describe their jurisdiction's greatest vulnerability. This information is summarized under the appropriate hazard's vulnerability subsection.

Figure R-1
Risk Priority Index Scoring System

Category	Factors	Point Value
Hazard Frequency	An event is anticipated to occur within the next year. Based on previous history, at least one event is expected to occur in any given year.	4
	An event is likely to occur in the next 1 to 3 years. Based on previous history, an event has at least a 33% chance of occurring in any given year.	3
	An event is possible in the next 3 to 10 years. Based on previous history, an event has a 10% to 33% chance of occurring in any given year.	2
	An event is unlikely to occur within the next 10 years. These events occur infrequently and based on previous history have a less than 10% chance of occurring in any given year.	1
Impacts on Life & Health	Fatalities are expected to occur during the event.	4
	While fatalities are unlikely, injuries, some requiring hospitalization, may occur during the event.	3
	Minor injuries not requiring hospitalization may occur during the event.	2
	Injuries or fatalities are unlikely to occur during the event.	1
Impacts on Property & Infrastructure	- Substantial property damage is likely to occur including damage to infrastructure and critical facilities. AND/OR - Loss of access/operations at multiple infrastructure and critical facilities (i.e., road & school closures, loss of power to drinking water/wastewater treatment facilities, municipal buildings, etc.) is anticipated for an extended period of time (i.e., a day or more).	4
	- Property damage is expected to occur including superficial damage to infrastructure and critical facilities. AND/OR - Loss of access/operations at multiple infrastructure and critical facilities is anticipated for a period of time (i.e., a day or less).	3
	- Some minor property damage is anticipated (i.e., shingles & siding torn off homes, windows broken, etc.) but no damage to infrastructure or critical facilities is anticipated. AND/OR - Loss of access/operations to infrastructure and critical facilities is anticipated but only for a short period of time (i.e. up to a couple hours).	2
	Property damage is likely to be negligible and no loss of access/operations is anticipated at any infrastructure/critical facilities during the event.	1

Figure R-2
Risk Priority Index Scores by Hazard by County & Participating Municipalities

Hazard	**Participating Jurisdictions**															
	Effingham County		Beecher City		Dietrich		Effingham (City)		Mason		Shumway		Teutopolis		Watson	
	RPI Score	Hazard Ranking	RPI Score	Hazard Ranking	RPI Score	Hazard Ranking	RPI Score	Hazard Ranking	RPI Score	Hazard Ranking	RPI Score	Hazard Ranking	RPI Score	Hazard Ranking	RPI Score	Hazard Ranking
Dam Failures	5.0	15	3.0	14/15/16/17	3.0	13/14/15/16/17	5.7	13	5.0	11/12/13	3.0	12/13/14/15/16/17	3.0	13/14/15/16/17	3.0	17
Drought	5.6	12	5.0	10/11/12/13	4.0	11/12	5.3	14	7.0	5/6/7/8/9	**10.0**	**1/2**	5.0	9/10/11	5.0	11/12/13/14/15
Earthquakes	0.7	11	5.0	10/11/12/13	**9.0**	**1/2/3**	7.3	9/10	5.0	11/12/13	4.0	11	5.0	9/10/11	7.0	3/4/5
Excessive Heat	6.8	7	5.0	10/11/12/13	5.0	8/9/10	8.0	7/8	7.0	5/6/7/8/9	8.0	6	**10.0**	**1**	6.0	6/7/8/9/10
Extreme Cold	6.9	6	3.0	14/15/16/17	5.0	8/9/10	8.0	7/8	7.0	5/6/7/8/9	6.0	10	6.0	5/6/7/8	7.0	3/4/5
Floods	7.2	5	6.0	8/9	7.0	5/6	7.0	11/12	**9.0**	**1/2/3/4**	3.0	12/13/14/15/16/17	4.0	12	7.0	3/4/5
Hail	6.5	8/9	7.0	3/4	6.0	7	7.0	11/12	5.0	11/12/13	7.0	7/8/9	7.0	3/4	6.0	6/7/8/9/10
HazMat Incidents: Transportation	6.5	8/9	**7.5**	**1/2**	4.0	11/12	8.3	5/6	6.0	10	3.0	12/13/14/15/16/17	3.0	13/14/15/16/17	5.0	11/12/13/14/15
HazMat Incidents: Fixed Facility	5.3	13/14	**7.5**	**1/2**	3.0	13/14/15/16/17	8.3	5/6	4.0	14	8.0	7/8/9	6.0	5/6/7/8	4.0	16
Heavy Rain	7.7	3/4	6.5	5/6/7	8.0	4	7.3	9/10	**9.0**	**1/2/3/4**	9.0	3/4/5	7.0	3/4	**8.0**	**2**
Levee Failures	3.3	16	3.0	14/15/16/17	3.0	13/14/15/16/17	3.0	16/17	3.0	15/16/17	3.0	12/13/14/15/16/17	3.0	13/14/15/16/17	5.0	11/12/13/14/15
Lightning	6.4	5	6.0	8/9	**9.0**	**1/2/3**	**8.7**	**2/3/4**	3.0	15/16/17	7.0	7/8/9	6.0	5/6/7/8	6.0	6/7/8/9/10
Mine Subsidence	3.2	17	3.0	14/15/16/17	3.0	13/14/15/16/17	3.0	16/17	3.0	15/16/17	3.0	12/13/14/15/16/17	3.0	13/14/15/16/17	5.0	11/12/13/14/15
Terrorism	5.3	13/14	5.0	10/11/12/13	3.0	13/14/15/16/17	4.7	15	7.0	5/6/7/8/9	3.0	12/13/14/15/16/17	3.0	13/14/15/16/17	5.0	11/12/13/14/15
Thunderstorms	**8.3**	**1**	6.5	5/6/7	7.0	5/6	**8.7**	**2/3/4**	**9.0**	**1/2/3/4**	9.0	3/4/5	**8.0**	**2**	6.0	6/7/8/9/10
Tornadoes	7.7	3/4	7.0	3/4	**9.0**	**1/2/3**	**9.0**	**1**	7.0	5/6/7/8/9	**10.0**	**1/2**	6.0	5/6/7/8	**10.0**	**1**
Winter Storms	**7.8**	**2**	6.5	5/6/7	5.0	8/9/10	**8.7**	**2/3/4**	**9.0**	**1/2/3/4**	9.0	3/4/5	5.0	9/10/11	6.0	6/7/8/9/10

Figure R-3
Risk Priority Index Scores by Hazard by Participating Special District

Hazard	Participating Jurisdictions			
	Mound Township		Beecher City CUSD	
	RPI Score	Hazard Ranking	RPI Score	Hazard Ranking
Dam Failures	4.0	13/14	…	…
Drought	4.0	13/14	…	…
Earthquakes	5.0	9/10/11/12	5.0	9/10
Excessive Heat	5.0	9/10/11/12	6.0	5/6/7/8
Extreme Cold	5.0	9/10/11/12	6.0	5/6/7/8
Floods	**9.0**	**2/3**	6.0	5/6/7/8
HazMat Incidents: Transportation	7.0	5/6/7	n/a	n/a
HazMat Incidents: Fixed Facility	7.0	5/6/7	n/a	n/a
Hail	7.0	5/6/7	6.0	5/6/7/8
Heavy Rain	**9.0**	**2/3**	**7.0**	**1/2/3/4**
Levee Failures	3.0	15/16/17	n/a	n/a
Lightning	5.0	9/10/11/12	**7.0**	**1/2/3/4**
Mine Subsidence	3.0	15/16/17	…	…
Thunderstorms	3.0	15/16/17	**7.0**	**1/2/3/4**
Terrorism	**10.0**	**1**	n/a	n/a
Tornadoes	8.0	4	**7.0**	**1/2/3/4**
Winter Storms	6.0	8	5.0	9/10

Figure R-4
Critical Facilities & Infrastructure by Jurisdiction

Participating Jurisdiction	Critical Facilities				Critical Infrastructure						
	Government[1]	Emergency Protection[2]	Medical & Healthcare[3]	Schools	Drinking Water[4]	Wastewater Treatment[5]	Rail Lines	Bridges	Interstates US/State Routes & Key Roads	Power Plants	Comm. Systems
Effingham County	4	3	1	---	---	---	3	---	8	---	1
Beecher City	2	1	---	2	---	2	---	---	1	---	1
Dietrich	2	1	2	1	1	1	1	1	2	---	1
Effingham	1	5	22	7	6	2	2	5	9	---	0
Mason	2	1	0	0	0	2	1	2	2	---	1
Shumway	2	1	0	0	1	3	0	0	1	---	1
Teutopolis	1	2	3	3	5	6	0	0	4	---	0
Watson	2	1	0	0	1	3	1	0	3	---	0
Beecher City CUSD	---	---	---	2	---	---	---	---	---	---	---
Mound Township	2	---	---	---	---	---	2	---	4	---	---
Watson Township											

[1] Government includes: courthouses, city/village halls, township buildings, highway/road maintenance centers, libraries, etc.
[2] Emergency Protection includes: sheriff's department, police, fire, ambulance, emergency operations centers, jail/correctional facilities and evacuation shelters.
[3] Medical & Healthcare includes: public health departments, hospitals, urgent/prompt care and medical clinics, nursing homes, skilled nursing facilities, memory care facilities, residential group homes, etc.
[4] Drinking Water includes: drinking water treatment plants, drinking water wells and water storage towers/tanks.
[5] Wastewater Treatment includes: wastewater treatment plants and lift stations.
--- Indicates the jurisdiction does not own/maintain any critical facilities within that category.

3.9 MAN-MADE HAZARDS

While the focus of this Plan update is on natural hazards, an ***overview of selected man-made hazards*** has been included. The Planning Committee recognizes that man-made hazards can also pose risks to public health and property. The extent and magnitude of the impacts that result from man-made hazard events can be influenced by natural hazard events. For example, severe winter storms can cause accidents involving trucks transporting hazardous substances. These accidents may lead to the release of these substances which can result in injury and potential contamination of the natural environment.

Consequently, the Planning Committee decided to summarize the more prominent man-made hazards in Effingham County. The man-made hazards profiled in this Plan update include:

- Hazardous Substances
  - Generation
  - Transportation
  - Storage/Handling
- Waste Disposal
  - Solid Waste
  - Medical Waste
  - Hazardous Waste
- Hazardous Material Incidents
- Hazardous Waste Remediation
- Terrorism

While the man-made hazards risk assessment does not have the same depth as the natural hazards risk assessment, it does provide useful information that places the various man-made hazards in perspective.

3.12.1 Hazardous Substances

Hazardous substances broadly include any flammable, explosive, biological, chemical, or physical material that has the potential to harm public health or the environment. For the purposes of this Plan, the term hazardous substance includes hazardous product and hazardous waste. A hazardous waste is defined as the byproduct of a manufacturing process that is either listed or has the characteristics of ignitability, corrosivity, reactivity or toxicity and cannot be reused. A hazardous product is all other hazardous material.

Hazardous substances can pose a public health threat to individuals at their workplace and where they reside. The type and quantity of the substance, the pathway of exposure (inhalation, ingestion, dermal, etc.), and the frequency of exposure are factors that will determine the degree of adverse health effects experienced by individuals. Impacts can range from minor, short-term health issues to chronic, long-term illnesses.

In addition to impacting public health, hazardous substances can also cause damage to buildings, infrastructure and the environment. Incidents involving hazardous substances can range from minor (scarring on building floors and walls) to catastrophic (i.e., destruction of entire buildings, structural damage to roadways, etc.) and lead to injuries and fatalities. The number of incidents involving hazardous substances in Illinois and across the Nation every year underscores the need for trained and equipped emergency responders to minimize damages.

Since 1970, significant changes have occurred in regards to how hazardous substances are transported and disposed. Comprehensive regulations and improved safety and industrial hygiene

practices have reduced the frequency of incidents involving hazardous substances. Based on the small number of facilities in Effingham County that generate and use hazardous substances, the population size, transportation patterns, and land use, the probability of a release occurring in Effingham County should remain relatively low compared to other counties in Illinois. The relatively low numbers of transportation incidents should not diminish municipal or county commitment to emergency management.

HAZARD PROFILE – HAZARDOUS SUBSTANCES

The following subsections identify the general pathways – generation, transportation and storage/handling – by which hazardous substances pose a risk to public health and the environment in Effingham County.

Hazardous Substances Fast Facts - Occurrences

Generation

Number of Facilities that Generate Reportable Quantities of Hazardous Substances (2017): ***2***

Transportation

Number of Roadway Incidents Involving Hazardous Substance Shipments (2010-2019): ***45***

Number of Railway Accidents/Incidents Involving Hazardous Substance Shipments (2009-2018): ***3***

Number of Pipeline Incidents Involving Hazardous Substances (2010 - 2019): ***None***

Storage/Handling

Number of Facilities that Store/Handle Hazardous Substances (2017): ***46***

Number of Facilities that Store/Handle Extremely Hazardous Substances (2017): ***14***

3.12.1.1 Generation

Effingham County has two (2) facilities that generate reportable quantities of hazardous substances as a result of their operations according to the U.S. Environmental Protection Agency (USEPA) Toxic Release Inventory. **Figure MMH-1** identifies the hazardous substance generators located in Madison County and summarizes the substances generated.

Figure MMH-1
Generators of Solid & Liquid Hazardous Substances – 2017

Name	Hazardous Substances Generated	Amount Generated (Pounds)
Effingham		
ADM Animal Nutrition	Copper Compounds	-
	Manganese Compounds	-
	Zinc Compounds	500
	Total:	*500*
Teutopolis		
Siemer Milling Co.	Chlorine	1
	Total:	*1*

3.12.1.2 Transportation

Roadways

Illinois has the nation's third largest interstate system and third largest inventory of bridges. According to the Illinois Department of Transportation, there were just over 147,000 miles of highways and streets in Illinois in 2018. Most of the truck traffic in Effingham County is carried

on Interstate 57 and Interstate 70. Interstate 57 traverses across the middle of the County connecting Sikeston, MO to Chicago, IL, while Interstate 70 bisects the County connecting St. Louis, MO to Baltimore, MA. Other major roadways that carry truck traffic include US-45, US-40, IL Rte. 33 and IL Rte. 45. While this modern roadway system provides convenience and efficiency for commuters, it also aids in-state and intra-state commerce which includes the transportation of hazardous substances. A Commodity Flow Study to gauge chemical transport has not yet been conducted for Effingham County.

For the purposes of this report a roadway incident is generally defined as an accident/incident that occurs while in the process of transporting a hazardous substance(s) on a highway, roadway, access drive, field entrance, rest area or parking lot. Vehicles that experience a release while refueling are not considered roadway incidents, but are instead considered fixed facility incidents.

According to records obtained from the Illinois Emergency Management Agency (IEMA), there were forty-five (45) recorded roadway incidents involving the shipment of hazardous waste and/or products in Effingham County from 2010 through 2019. **Table 12** in **Appendix J** provides information on these incidents.

Railways

Illinois' rail system is the country's second largest, with the East St. Louis and Chicago terminals being two of the nation's busiest. In Effingham County there are three rail lines operated by three major carriers: Amtrak (ATK), Canadian National Railways(CN), and CSX Transportation (CSXT). CN operates two rail lines. One line runs through the center of the County and is shared with ATK. CN operates a line that runs from Effingham north into Indiana. CSXT runs and east-west line through the middle of Effingham County.

According to the Association of American Railroads, 4,028,000 carloads (122.1 tons) of freight originated in Illinois in 2017 (the latest year for which data is available). Hazardous substances accounted for 318,275 carloads (approximately 9.6 million tons) or 7.9% of the total freight handled. In comparison, 29,261,000 carloads of freight originated in the United States in 2017 with approximately 2,300,000 carloads (7.9%) involved in the transport of hazardous substances.

The Illinois Commerce Commission (ICC) is required to maintain records on railway accidents/incidents which involve hazardous substances. Their records are divided into three categories. These three categories are described in **Figure MMH-2**.

Figure MMH-2
ICC Hazardous Substances Railroad Accident/Incidents Classification Categories

Category	Description
A	railroad derailments resulting in the release of the hazards substance(s) being transported
B	railroad derailments where hazards substance(s) were being transported but no release occurred
C	releases of hazardous substance(s)s from railroad equipment occurred, however no railroad derailment was involved

Since 2009, there have been three accidents involving hazardous substances in Effingham County according to the ICC. In comparison, ICC records indicate that since 2009 the annual number of

railway accidents in Illinois involving hazardous substances has ranged between 35 and 122. **Figure MMH-3** provides a breakdown by category of the ICC-recorded railway accidents/incidents involving hazardous substances. Included is a comparison of the number of accidents/incidents in Effingham County to those in Cook and the Collar Counties as well as the rest of Illinois.

Figure MMH-3
ICC Recorded Railway Accidents/Incidents Involving Hazardous Substances: 2009 – 2018

Year	Category	Accident/Incident Location			
		Illinois	Effingham County	Cook & Collar Counties	All Other Counties
2010	A	3	0	2	1
	B	20	0	17	3
	C	80	0	42	38
2011	A	8	1	1	6
	B	10	0	9	1
	C	60	0	33	27
2012	A	4	0	2	2
	B	13	0	11	2
	C	73	0	42	31
2013	A	5	0	3	2
	B	23	0	16	7
	C	82	0	51	31
2014	A	2	0	2	0
	B	36	0	21	15
	C	84	0	40	44
2015	A	4	0	3	1
	B	27	0	15	12
	C	69	0	36	33
2016	A	4	0	1	3
	B	14	0	6	8
	C	65	0	33	32
2017	A	2	0	1	1
	B	14	0	9	5
	C	69	1	34	34
2018	A	1	0	0	1
	B	8	0	4	4
	C	55	0	24	31

Source: Illinois Commerce Commission.

According IEMA's hazardous materials incident records for the sample time periods of 2010- 2019, there were two (2) rail accidents/incidents involving the release of hazardous substances. **Figure MMH-4** provides information on these incidents by rail line. One derailments were associated with one of these accidents/incidents.

Figure MMH-4
IEMA Recorded Railway Accidents/Incidents Involving Hazardous Substances: 2010 – 2019

Date	Area	Location	Hazardous Substance Released	Quantity Released
Canadian National				
4/8/2011	Effingham	Canadian National Spur Line between S. Wabash Ave. and Banker St.	Methyl methacrylate monomer	5 gallons
CSX Transportation				
9/28/2011	Effingham	Willow St. RR Crossing	Diesel fuel	Unknown

Source: Illinois Emergency Management Agency, Hazardous Materials Incident Reports.

The top 20 hazardous substances moved by rail through Illinois include: sodium hydroxide, petroleum gases (liquefied), sulfuric acid, anhydrous ammonia, chlorine, sulfur, vinyl chloride, propane, fuel oil, denatured alcohol, methanol, gasoline, phosphoric acid, hydrochloric acid, styrene monomer, carbon dioxide (refrigerated liquid), ammonium nitrate, sodium chlorate, and diesel fuel.

Pipelines

Energy gases (natural gas and liquefied petroleum gas), petroleum liquids (crude oil and gasoline) and liquid and gas products used in industrial processes are carried in above-ground and buried pipelines across Illinois. According to the U.S. Department of Transportation's National Pipeline Mapping System, there are three interstate hazardous liquids pipeline, two interstate natural gas pipeline system, and one intrastate hazardous liquids pipeline system in Effingham County. The hazardous liquids pipelines are owned by Buckeye Partners LP. And Marathon Pipeline LLC. The two interstate natural gas pipeline system are owned by Natural Gas Pipeline Co. of America and Truckline Gas Co. The one intrastate natural gas pipeline system is owned by Marathon Pipeline LLC.

No pipeline releases occurred in Effingham County during a ten year period from 2010 through 2019.

There have been several high-profile incidents across the Nation, including one in Illinois, which have raised public concerns about our aging pipeline infrastructure. The following provides a brief description of each incident.

- On July 26, 2010 a 30-inch liquid product pipeline rupture near Marshall, Michigan and released at least 840,000 gallons of oil into a creek that led to the Kalamazoo River, a tributary of Lake Michigan.
- Soon afterward on September 9, 2010, another pipeline release received national attention. A 34-inch liquid product pipeline in the Chicago Suburb of Romeoville, Illinois released over 360,000 gallons of crude oil that flowed through sewers and into a retention pond narrowly avoiding the Des Plaines River. This release triggered numerous odor complaints from residents in the adjacent municipalities of Lemont and Bolingbrook. The property damage/cleanup costs were estimated at $46.6 million.

- Also, on September 9, 2010, a 30-inch high pressure natural gas pipeline ruptured in the San Francisco suburb of San Bruno, California that resulted in an explosion that killed eight people, injured 51, destroyed over 30 homes and damaged an entire neighborhood. The property damage was estimated at around $55 million.
- On March 12, 2014 a gas main rupture in Manhattan, New York that resulted in an explosion that killed eight people and leveled two multi-use, five story buildings.
- On May 19, 2015, a 24-inch liquid product pipeline ruptured near Refugio State Beach in Santa Barbara County, California and released approximately 100,000 gallons of crude oil. The release occurred along a rustic stretch of coastline that forms the northern boundary of the Santa Barbara Channel, home to a rich array of sea life. Oil ran down a ravine and entered the Pacific Ocean, blackening area beaches, creating a 9-mile oil slick and impacting birds, marine mammals, fish and coastal and subtidal habitats.

Continual monitoring and maintenance of these pipelines is necessary to prevent malfunctions from corrosion, aging, or other factors that could lead to a release. In addition, to normal wear and tear experienced by pipelines, the possibility of sabotage and seismic activity triggering a release must be considered when contemplating emergency response scenarios.

3.12.1.3 Storage/Handling

Beyond knowing where hazardous substances are generated and the methods and routes used to transport them, it is important to identify where hazardous substances are handled and stored. This information will help government officials and emergency management professionals make informed choices on how to better protect human health, property and the environment and what resources are needed should an incident take place.

Records obtained from IEMA's Tier II database were used to gather information on the facilities that generate, use and store chemicals in excess of reportable threshold quantities within Effingham County. The Tier II information was then compared with USEPA's Toxic Release Inventory (TRI) and information from IEPA's databases. This review identified forty-six (46) facilities within Effingham County in 2017 that store and handle hazardous substances.

Of these forty-six facilities, fourteen (14) reported the presence of Extremely Hazardous Substances (EHSs) at their facilities. An "Extremely Hazardous Substance" is any USEPA-identified chemical that could cause serious, irreversible health effects from an accidental release. There are approximately 400 chemicals identified as EHSs. Stationary sources who possess one or more of these substances at or above threshold reporting quantities are required to notify IEMA.

Figure MMH-5 identifies the types of EHSs and the facilities that store and handle them. Aside from EHSs, there are other chemicals, such as water reactives, that can pose risks that are equal to or greater than the risks posed by EHSs. These risks can be identified through a Threat and Hazard Identification and Risk Assessment (THIRA).

Figure MMH-5
Extremely Hazardous Substances by Facility – 2017

Facility Name	Extremely Hazardous Substance(s)
Altamont	
Effingham Equity – Altamont	Parazone 3SL Gramoxone SL
Effingham Equity – Altamont NH3	Anhydrous ammonia
South Central FS, Inc. / Altamont	Paraquat dichloride
Dieterich	
Effingham Equity – Dieterich	Gramoxone SL 2.0 Anhydrous ammonia
Edgewood	
Crop Production Services, 700	Gramoxone SL 2.0 Anhydrous ammonia
Effingham	
Consolidated Communications – Effingham Central Office	Sulfuric acid
Continental Mills, Effingham, IL	Sulfuric acid
Pinnacle Foods Group LLC	Sulfuric acid
Quad/ Graphics Marketing, LLC	Sulfuric acid
Quad/ Graphics Marketing, LLC	Sulfuric acid
Sherwin-Williams Company	Solvent based coatings Lead acid batteries Aerosol
South Central FS, Inc. / Effingham	Paraquat dichloride
Montrose	
Effingham Equity – Montrose	Gramoxone SL 2.0 Anhydrous ammonia
Teutopolis	
Siemer Milling Company	Chlorine

Sources: Illinois Emergency Management Agency, Tier II Hazardous Chemical Reports.
U.S. Environmental Protection Agency, TRI Explorer.

3.12.2 Waste Disposal

Waste disposal has caused surface water and ground water contamination in Illinois and across the Nation. Beginning in the late 1970s substantial regulatory changes strengthened the design, operating and monitoring requirements for landfills where the majority of waste is disposed. These regulatory changes have helped reduce the public health threat posed by landfills.

HAZARD PROFILE – WASTE DISPOSAL

The following subsections identify the general pathways – solid, medical and hazardous – by which waste disposal poses a risk to public health and the environment in Effingham County.

3.12.2.1 Solid Waste

While recycling activities have reduced the amount of solid waste (waste generated in households), the majority continues to be disposed of in landfills. As of 2018, there were thirty-eight (38) landfills operating in Illinois.

According IEPA's Annual Landfill Capacity Report issued in September, 2019 there is one commercial landfill currently operating in Effingham County. Landfill #33 LTD operates within the County.

There is currently one Illinois landfill that serves Effingham and the adjacent counties. Wayne County Landfill Inc. operates out of Wayne County, Illinois.

3.12.2.2 Potentially- Infectious Medical Waste

Potentially-Infectious Medical Waste (PIMW) is generated in connection with medical research; biological testing; and the diagnosis, treatment or immunization of human beings or animals. PIMW is typically generated at hospitals, nursing homes, medical or veterinary clinics, dental offices, clinical or pharmaceutical laboratories and research facilities.

According to IEPA's list of permitted PIMW Facilities, there are no facilities permitted to accept medical waste for disposal in Effingham County.

3.12.2.3 Hazardous Waste

A hazardous waste is defined as the byproduct of a manufacturing process that is either listed or has the characteristics of ignitability, corrosivity, reactivity or toxicity and cannot be reused.

Waste Disposal Fast Facts - Occurrences

Solid Waste
Number of Solid Waste Landfills Operating in Effingham County (2018): ***1***

Number of Landfills Serving Effingham and adjacent counties (2018): ***1***

Potentially-Infectious Medical Waste (PIMW)
Number of Facilities within the County Permitted to Handle PIMW: ***None***

Hazardous Waste
Number of Commercial Off-Site Hazardous Waste Treatment or Disposal Facilities located in the County: ***None***

According to IEPA's Storage, Treatment, Recycling, Incinerating, Transfer Stations and Processing list, there are currently no off-site hazardous waste treatment or disposal facilities located in Effingham County.

3.12.3 Hazardous Material Incidents

A hazardous material or hazmat incident refers to any accident involving the release of hazardous substances which broadly include any flammable, explosive, biological, chemical, or physical material that has the potential to harm public health or the environment. These incidents can take place where the substances are used, generated or stored or while they are being transported. In addition, hazmat incidents also include the release of hazardous substances, such as fuel, used to operate vehicles. These releases can be the result of an accident or a leak.

HAZARD PROFILE – HAZARDOUS MATERIALS INCIDENTS

From 2010 through 2019, there were 103 hazmat incidents recorded in Effingham County. **Table 13** in **Appendix J** provides information on the hazmat incidents recorded in Effingham County. Of these incidents, ***forty-eight (48) (47%) involved transportation incidents/accidents while one fifty-five (53%) occurred at fixed facilities***. Forty-three (43) of the forty-eight (48) transportation incidents/accidents (90%) involved petroleum-based products.

Based on the recorded incidents, ***Effingham County experienced an average of 10 hazmat incidents annually over the last 10 years***. The types of existing industries; the major transportation corridors through the County which include interstate and Illinois highways, rail and pipeline; and chemical use within and adjacent to the County suggest that hazmat incidents are likely to continue to take place at the rate reflected in the 10-year study period. Constant vigilance, proper training and equipment, and prompt response are needed to minimize the potential impacts of each incident.

Hazmat Incident Fast Facts - Occurrences

Number of Hazardous Material Incidents in Effingham County (2010-2019): ***103***

Number of Transportation-Related Incidents/Accidents: ***48***

Number of Fixed Facility-Related Incidents/Accidents: ***55***

Average Number of Hazardous Material Incidents Experienced Annually: ***10***

3.12.4 Waste Remediation

The improper disposal or containment of special and hazardous waste through the years has led to soil, groundwater and surface water contamination of sites across the United States. In order to safeguard human health and the environment, these contaminants must be removed or neutralized so they cannot cause harm. This process is known as waste remediation.

HAZARD PROFILE – WASTE REMEDIATION

In Illinois, waste remediation is handled through several programs including the federal Superfund program, the State Response Action Program, the state Site Remediation Program and the Leaking Underground Storage Tanks Program. The following provides a brief description of each.

Superfund (CERLCA) Program/National Priorities List

Superfund is a USEPA-led program to clean up sites within the United States contaminated by hazardous waste that has been dumped, left out in the open or otherwise improperly managed and which pose a risk to human health and/or the environment. Sites of national priority among the known or threatened releases of hazardous substances, pollutants or contaminants throughout the United

Waste Remediation Fast Facts - Occurrences

Superfund

Number of Superfund Sites in the County: ***None***

Illinois Site Response Action Program

Number of SRAP Sites in the County: ***1***

Illinois Site Remediation Program

Number of SRP Sites in the County: ***5***

Number of SRP Sites with NFR Letters: ***4***

Illinois Leaking Underground Storage Tanks Program

Number of LUST Sites in County: ***182***

Number of LUST Sites with NFR/Non-Lust/4Y Letters: ***136 (75%)***

States and it territories are identified on the National Priorities List (NPL). Those sites that pose the largest threat to public health and the environment are typically found on the NPL.

According to NPL database, there are 45 Superfund sites in Illinois. However, there are ***no sites*** in Effingham County being ***managed through the Superfund program***.

State Response Action Program (SRAP)
The main objective of the State Response Action Program (SRAP) is to clean up hazardous substances at sites that present an imminent and substantial threat to human health and the environment, but which may not be addressed by other federal or state cleanup programs. The sites handled by the SRAP include abandoned landfills, old manufacturing plants, former waste oil recycling operations, contaminated agrichemical facilities and other areas where surface water, groundwater, soil and air may be contaminated with hazardous substances. Since the mid-1980s, cleanup activities have been conducted at over 500 sites in Illinois through this Program. Once the threat to human health and the environment has been mitigated, some sites are transferred to other state cleanup programs to complete remediation activities.

There is ***one (1) SRAP sites*** in Effingham County. The site has completed the Program.

Illinois Site Remediation Program (SRP)
The Site Remediation Program (SRP) is a voluntary cleanup program that provides applicants the opportunity to receive technical assistance in determining what course of action is needed to remediate sites where hazardous substances, pesticides or petroleum may be present. The goal of the SRP is to receive a no further remediation determination from IEPA. Most site remediation in Illinois is handled through this Program. Since the mid-1980s, remediation activities have been conducted and monitored at approximately 5,800 sites in Illinois. Applicants who successfully demonstrate, through proper investigation and, when warranted, remedial action, that environmental conditions at their remediation site do not present a significant risk to human health or the environment receive a No Further Remediation (NFR) letter from IEPA. The NRF letter signifies a release from further responsibilities under the Illinois Environmental Protection Act for a portion

There are ***five (5) SRP sites*** in Effingham County. Four of the five SRP sites have received NFR letters.

Leaking Underground Storage Tank Program (LUST)
The Leaking Underground Storage Tanks Program (LUST) oversees remedial activities associated with petroleum product releases from underground storage tanks (UST). This Program began in the late 1980s as a result of the threats posed by vapors in homes and businesses, contaminated groundwater, and contaminated soil. In Illinois over 14,500 acres of soil contaminated by leaking underground tanks have been remediated between 1988 and 2010 (the most recent year for which data was available).

In Effingham County there are one hundred and eighty-two (182) ***sites involving the remediation of petroleum product releases*** from underground storage tanks. One hundred and thirty-six of the

one hundred and eighty-two LUST sites (approximately 75%) have received NFR, Non-Lust or 4Y Letters or remediation is virtually complete.

3.12.5 Terrorism

Terrorism has different definitions across the globe. For the purpose of this Plan, terrorism will be defined as any event that includes ***violent acts*** which ***threaten or harm lives, health or property*** conducted by ***domestic or foreign*** individuals or groups ***aimed at civilians, the federal government or symbolic locations*** intended to ***cause widespread fear***.

HAZARD PROFILE – TERRORISM

The attack on the World Trade Center and the Pentagon on September 11, 2001 by foreign terrorists galvanized national action against terrorism and resulted in the creation of the United States Department of Homeland Security. While the number of terrorist activities garnering national attention in the U.S. has been relatively small, approximately 181,691 terrorist events have occurred worldwide between 1970 and 2017, according to the National Consortium for the Study of Terrorism and Responses to Terrorism (the Consortium). During this same time span, the Consortium documented 2,836 terrorist events within the U.S.

Terrorism Fast Facts – Occurrences*

Number of Recorded Terrorism Events Worldwide (1970 – 2017): ***181,691***

Number of Recorded Terrorism Events in the United States (1970 – 2017): ***2,836***

Number of Recorded Terrorism Events in Illinois (1970 – 2017): ***113***

* Based on data from the National Consortium for the Study of Terrorism and Responses to Terrorism (START) Global Terrorism Database.

Acts of terrorism have resulted in fatalities and injuries as a result of kidnappings, hijackings, bombings, and the use of chemical and biological weapons. The Global Terrorism Database has documented 3,516 American fatalities in the United States between 1995 and 2017 from terrorist attacks. The attacks on September 11, 2001 account for 3,001of the 3,516 fatalities. A search of the Global Terrorism Database identified 113 incidents of terrorism in Illinois between 1970 and 2017. These incidents resulted in six fatalities and 37 injuries.

The Federal Bureau of Investigation's (FBI) provides supporting documentation on domestic terrorist attacks in a series of reports on terrorism. These reports provide a chronological summary of terrorist incidents in the United States with detailed information on attacks between 1980 and 2005. During this time period, 192 incidents were documented within the United States. Six of these incidents occurred in Illinois; five in the Chicago area and one downstate.

On September 24, 2009, a single individual from Macon County sought to carry out his anger at the federal government by detonating a van filled with explosive outside of the Federal Courthouse in Springfield. This attempt was thwarted by the FBI.

More recently an active shooter incident occurred at the High School in Dixon. On May 16, 2018 at around 8:00 a.m. in the morning approximately 180 students were in the school's gymnasium practicing for graduation when a 19-year-old boy, armed with a 9mm semi-automatic rifle, fired several shots near the gymnasium. The school's resource officer confronted the shooter, who fled

from the school on foot. The shooter fired several shots at the resource officer, who returned fire, wounding the shooter in the shoulder. The gunman suffered non-life threatening injuries. No students or staff were injured in the incident. Faculty and staff barricaded doors and took cover as the incident unfolded.

It is impossible to predict with any reasonable degree of accuracy how many terrorism events might be expected to occur in Effingham County or elsewhere in Illinois. Although targets for terrorist activity are more likely centered in larger urban areas, recruitment, training and other support activities, such as the ones described above, have occurred in rural areas.
The economic resources available to some terrorist groups coupled with the combination of global tensions, economic uncertainty and frustration towards government appear to have recently raised the frequency of attempts. Enhanced efforts by law enforcement officials and civilian vigilance for unusual activity or behavior will be needed to repel terrorists whether they are domestic or foreign in origin.

4.0 MITIGATION STRATEGY

The mitigation strategy identifies how participating jurisdictions are going to reduce the potential loss of life and property damage that results from the natural and man-made hazards identified in the Risk Assessment section of this Plan. The strategy includes:

- Developing mitigation goals. Mitigation goals describe the objective(s) or desired outcome(s) that the participants would like to accomplish in term of hazard and loss prevention. These goals are intended to reduce or eliminate long-term vulnerabilities to natural and man-made hazards.
- Identifying a comprehensive range of jurisdiction-specific mitigation actions including those related to continued compliance with the National Flood Insurance Program (NFIP). Mitigation actions are projects, plans, activities or programs that achieve at least one of the mitigation goals identified.
- Analyzing the mitigation actions identified for each jurisdiction. This analysis ensures each action will reduce or eliminate future losses associated with the hazards identified in the Risk Assessment section.
- Developing the mitigation actions prioritization methodology. The prioritization methodology outlines the approach used to prioritize the implementation of each identified mitigation action.
- Identifying the entity(s) responsible for implementation and administration. For each mitigation action, the entity(s) responsible for implementing and administering that action is identified as well as the timeframes for completing the actions and potential funding sources.
- Conducting a preliminary cost/benefit analysis of each mitigation action. The qualitative cost/benefit analysis provides participants a general idea which actions are likely to provide the greatest benefit based on the financial cost and staffing efforts needed.

A detailed discussion of each aspect of the mitigation strategy is provided below.

4.1 MITIGATION GOALS REVIEW

Developing mitigation goals was the first step in creating the mitigation strategy. Based on early communications with the Planning Committee members, the consultant developed a preliminary list of eight hazard mitigation goals. This list of goals was distributed electronically to Committee members who were asked to review the list before the first meeting and consider whether any changes needed to be made or if additional goals should be included. At the Planning Committee's November 18, 2019 meeting, the group discussed the preliminary list of goals and approved them with no changes or additions. **Figure MIT-1** lists the approved mitigation goals.

Figure MIT-1 Mitigation Goals	
Goal 1	Educate people about the hazards (natural and man-made) they face and the ways they can protect themselves, their homes, and their businesses from those hazards.
Goal 2	Protect the lives, health, and safety of the individuals living in the County from the dangers of natural and man-made hazards.
Goal 3	Protect existing infrastructure and design new infrastructure (buildings, roads, bridges, utilities, water supplies, sanitary sewer systems, etc.) to be resilient to the impacts of natural and man-made hazards.
Goal 4	Incorporate natural and man-made hazard mitigation into existing as well as new community plans and regulations.
Goal 5	Place a priority on protecting public services, including critical facilities, utilities, roads and schools.
Goal 6	Preserve and protect the rivers, creeks and floodplains in our County.
Goal 7	Ensure that new developments do not create new exposures to damage from natural and man-made hazards.
Goal 8	Protect historic, cultural, and natural resources from the effects of natural and man-made hazards.

4.2 MITIGATION ACTION IDENTIFICATION

Following the development of the mitigation goals, the Planning Committee members were asked to consult with their respective jurisdictions to identify a comprehensive range of ***jurisdiction-specific mitigation actions***. Representatives from Dieterich, Effingham and Teutopolis were also asked to identify mitigation actions that would ensure their continued compliance with the National Flood Insurance Program.

The compiled lists of new mitigation actions were then reviewed to assure the appropriateness and suitability of each action. Those actions that were not deemed appropriate and/or suitable were either reworded or eliminated.

4.3 MITIGATION ACTION ANALYSIS

The mitigation actions identified were then assigned to one of four broad mitigation action categories which allowed Planning Committee members to compare and consolidate similar actions. **Figure MIT-2** identifies each mitigation action category and provides a brief description.

Each mitigation action was then analyzed to determine:

- the hazard or hazards being mitigated;
- the general size of the population affected (i.e., small, medium or large);
- the goal or goals fulfilled;
- whether the action would reduce the effects on new or existing buildings and infrastructure; and
- whether the action would ensure continued compliance with the National Flood Insurance Program.

Figure MIT-2 Types of Mitigation Activities	
Category	**Description**
Local Plans & Regulations (LP&R)	Local Plans & Regulations include actions that influence the way land and buildings are being developed and built. Examples include: stormwater management plans, floodplain regulations, capital improvement projects, participation in the NFIP Community Rating System, comprehensive plans, and local ordinances (i.e., building codes, etc.)
Structure & Infrastructure Projects (S&IP)	Structure & Infrastructure Projects include actions that protect infrastructure and structures from a hazard or remove them from a hazard area. Examples include: acquisition and elevation of structures in flood prone areas, burying utility lines to critical facilities, construction of community safe rooms, install "hardening" materials (i.e., impact resistant window film, hail resistant shingles/doors, etc.) and detention/retention structures.
Natural System Protection (NSP)	Natural System Protection includes actions that minimize damage and losses and also preserve or restore natural systems. Examples include: sediment and erosion control, stream restoration and watershed management.
Education & Awareness Programs (E&A)	Education & Awareness Programs include actions to inform and educate citizens, elected officials and property owners about hazards and the potential ways to mitigate them. Examples include: outreach/school programs, brochures and handout materials, becoming a StormReady community, evacuation planning and drills, and volunteer activities (i.e., culvert cleanout days, initiatives to check in on the elderly/disabled during hazard events such as storms and extreme heat events, etc.)

4.4 MITIGATION ACTION PRIORITIZATION METHODOLOGY

Next, the Planning Committee worked with the Consultant to develop a method to prioritize mitigation actions. Various methodologies were discussed with the Committee members at the second meeting held on February 27, 2020. **Figure MIT-3** identifies and describes the four-tiered prioritization methodology adopted by the Planning Committee.

This methodology is based on two key factors: 1) the frequency of the hazard and 2) the degree of mitigation attained. The methodology developed provides a means of objectively determining which actions have a greater likelihood of reducing the long-term vulnerabilities associated with the most frequently-occurring natural hazards.

While prioritizing the actions is useful and provides participants with additional information, it is important to keep in mind that implementing any the mitigation actions is desirable regardless of which prioritization category an action falls under.

4.5 MITIGATION ACTION IMPLEMENTATION, ADMINISTRATION & COST/BENEFIT ANALYSIS

Finally, each participating jurisdiction was asked to identify how the mitigation actions will be implemented and administered. This included:

- Identifying the party or parties responsible for oversight and administration.
- Determining what funding source(s) are available or will be pursued.

- Describing the time frame for completion.
- Conducting a preliminary cost/benefit analysis.

Figure MIT-3
Mitigation Action Prioritization Methodology

		Hazard	
		Most Frequent Hazard **(M)** (i.e., severe storms, severe winter storms/extreme cold, floods, excessive heat)	Less Frequent Hazard **(L)** (i.e., tornadoes, drought, earthquakes, dam failures)
Mitigation Action	Mitigation Action with the Potential to Virtually Eliminate or Significantly Reduce Impacts **(H)**	**HM** mitigation action will virtually eliminate damages and/or significantly reduce the probability of injuries and fatalities from the most frequently-occurring hazards	**HL** mitigation action will virtually eliminate damages and/or significantly reduce the probability of injuries and fatalities from the less frequently-occurring hazards
	Mitigation Action with the Potential to Reduce Impacts **(L)**	**LM** mitigation action has the potential to reduce damages, injuries and/or fatalities from the most frequently-occurring hazards	**LL** mitigation action has the potential to reduce damages, injuries and/or fatalities from the less frequently-occurring hazards

Oversight & Administration

It is important to keep in mind that most of the participating municipalities have extremely limited capabilities related to organization and staffing for oversight and administration of the identified mitigation actions. Five of the nine participating municipalities/townships are very small in size with less than 750 individuals. In most cases these municipalities have minimal staff who are only employed part-time. Their organizational structure is such that most have very few offices and/or departments, generally limited to public works. Those in charge of the offices/departments often lack the technical expertise needed to individually oversee and administer the identified mitigation actions. As a result, most of the participating jurisdictions identified their governing body (i.e., village board, city council or board) as the entity responsible for oversight and administration simply because it is the only practical option given their organizational constraints. Other participants felt that oversight and administration falls under the purview of the entity's governing body (board/council) and not individual departments.

Funding Sources

While the South Central Illinois Regional Planning and Development Commission has the ability to provide grant writing services to Effingham County, many of the participating jurisdictions do not have administrators with grant writing capabilities. As a result, assistance was needed in identifying possible funding sources for the identified mitigation actions. The consultant provided written information to the participants about FEMA and non-FEMA funding opportunities that have been used previously to finance mitigation actions. In addition, funding information was

discussed with participants during planning committee meetings and in one-on-one contacts so that an appropriate funding source could be identified for each mitigation action.

A handout was prepared and distributed that provided specific information on the non-FEMA grant sources available including the grant name, the government agency responsible for administering the grant, grant ceiling, contact person and application period among other key points. Specific grants from the following agencies were identified: United State Department of Agricultural – Rural Development (USDA – RD), Illinois Department of Agriculture (IDOA), Illinois Department of Commerce and Economic Opportunity (DCEO), Illinois Environmental Protection Agency (IEPA), Illinois Department of Natural Resources (IDNR) and Illinois Department of Transportation (IDOT).

The funding source identified for each action is the most likely source to be pursued. However, if grant funding is unavailable through the most likely or other suggested sources, then implementation of medium and large-scale projects and activities is unlikely due to the budgetary constraints experienced by all of the participants due to their size, projected population growth and limited revenue streams. It is important to remember that the population for the entire County is just over 34,000 individuals. Five of the nine participating municipalities/townships have populations of less than 750 individuals. Most of the jurisdictions struggle to maintain and provide the most critical of services to their residents. Additional funding is necessary if implementation is to be achieved.

Time Frame for Completion

The time frame for completion identified for each action is the timespan in which participants would like to see the action successfully completed. In many cases, however, the time frame identified is dependent on obtaining the necessary funding. As a result, a time range has been identified for many of the mitigation actions to allow for unpredictability in securing funds.

Cost/Benefit Analysis

A preliminary qualitative cost/benefit analysis was conducted on each mitigation action. The costs and benefits were analyzed in terms of the general overall cost to complete an action as well as the action's likelihood of permanently eliminating or reducing the risk associated with a specific hazard. The general descriptors of high, medium and low were used. These terms are not meant to translate into a specific dollar amount, but rather to provide a relative comparison between the actions identified by each jurisdiction.

This analysis is only meant to give the participants a starting point to compare which actions are likely to provide the greatest benefit based on the financial cost and staffing effort needed. It was repeatedly communicated to the Planning Committee members that when a grant application is submitted to IEMA/FEMA for a specific action, a detailed cost/benefit analysis will be required to receive funding.

4.6 RESULTS OF MITIGATION STRATEGY

Figures MIT-4 through **MIT-14**, located at the end of this section, summarize the results of the mitigation strategy. The mitigation actions are arranged alphabetically by participating jurisdiction following the County and include both existing and new actions.

Figure MIT-4
Effingham County Hazard Mitigation Actions
(Sheet 1 of 7)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis
						New	Existing				
County Board											
HM	Bury power lines to County facilities to limit service disruptions, increase facility resilience and eliminate road blockages by downed lines during natural and man-made hazard events.	MMH, SS, SWS, T	S&IP	Medium	2, 3, 5	n/a	Yes	Chairman / County Board	5-10 years	County / FEMA Pre-Disaster Mitigation	Medium/High
Emergency Management Agency / County Board											
LM	Research participation in the National Flood Insurance Program to explore the benefits and costs.	F	LP&R	Small	2, 4, 6, 7	Yes	Yes	EMA Emergency Manager / Chairman County Board	1-2 years	County	Low/Medium
Emergency Management Agency											
HM	Purchase and install an automatic emergency backup generator at the County Emergency Operations Center to provide uninterrupted power and maintain continuity of government and operations during power outages.	EH, F, SS, SWS, T	S&IP	Large	2, 3, 5	n/a	Yes	EMA Emergency Manager / Chairman County Board	2-3 years	County / FEMA Pre-Disaster Mitigation	Medium/High
HM	Purchase portable emergency backup generators for use at designated critical facilities (i.e., nursing homes, American Red Cross-designated shelters, etc.) to maintain operations during prolonged power outages.	EH, F, SS, SWS, T	S&IP	Small	2, 3, 5	n/a	Yes	EMA Emergency Manager / Chairman County Board	3-5 years	County / Illinois DCEO	Medium/High
LM	Secure Memorandums of Agreement with designated critical facilities (i.e., nursing homes, American Red Cross-designated shelters, etc.) to install electrical hookups (pigtails) for use with portable emergency backup generators to maintain operations during prolonged power outages.	EH, F, SS, SWS, T	LP&R	Small	2, 3, 5	n/a	Yes	EMA Emergency Manager / Chairman County Board	3-5 years	County	Low/Medium

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (just over 34,000 individuals), projected population growth and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

Acronyms

Priority

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Hazard(s) to be Mitigated:

DF	Dam Failure	F	Flood
DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storm
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Figure MIT-4
Effingham County Hazard Mitigation Actions
(Sheet 2 of 7)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis
						New	Existing				
Emergency Management Agency Continued…											
HM	Purchase and install electrical hookups (pigtails) at designated critical facilities (i.e., nursing homes, American Red Cross-designated shelters, etc.) for use with portable emergency backup generators to maintain operations during prolonged power outages.	EH, F, SS, SWS, T	S&IP	Small	2, 3, 5	n/a	Yes	EMA Emergency Manager / Chairman County Board	3-5 years	County / Illinois DCEO	Medium/High
LM	Develop/distribute public information materials that inform residents about the risks to life and property associated with natural hazards and the proactive actions they can take to reduce their risk.	DF, EC, EH, EQ, F, SS, SWS, T	E&A	Large	1, 2	n/a	n/a	EMA Emergency Manager	1-3 years	County	Low/High
LM	Secure Memorandum of Agreement with Effingham Equity to install electrical hookups (pigtails) for use with portable emergency backup generators to maintain operations during prolonged power outages. Effingham Equity provides fuel to the County for its generators and vehicles.	EH, F, SS, SWS, T	LP&R	Small	2, 3, 5	n/a	Yes	EMA Emergency Manager / Chairman County Board	3-5 years	County	Low/Medium
HM	Purchase and install electrical hookups (pigtails) at Effingham Equity for use with portable emergency backup generator to maintain operations during prolonged power outages. Effingham Equity provides fuel to the County for its generators and vehicles.	EH, F, SS, SWS, T	S&IP	Small	2, 3, 5	n/a	Yes	EMA Emergency Manager	3-5 years	County / Illinois DCEO	Low/High
LM	Purchase and distribute NOAA weather radios to vulnerable residents, businesses, schools and critical facilities (i.e., nursing homes, American Red Cross-designated shelters, etc.), fire protection districts, etc.	EC, EH, EQ, F, MMH, SS, SWS, T	E&A	Large	2	n/a	n/a	EMA Emergency Manager	2-5 year	County / Illinois DCEO	Low/High

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (just over 34,000 individuals), projected population growth and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

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Hazard(s) to be Mitigated:

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DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storm
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Figure MIT-4
Effingham County Hazard Mitigation Actions
(Sheet 3 of 7)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis
						New	Existing				
Emergency Management Agency Continued…											
LL	Partner with classified dam owners to develop Emergency Action Plans (EAPs) that identify the extent (water depth, speed of onset, warning times, etc.) and location (inundation area) of potential dam failures to address data deficiencies.	DF	E&A	Small	2, 3, 5	Yes	Yes	EMA Emergency Manager	5 years	County / Classified Dam Owners	Low/Low
Emergency Management Agency / 911											
HM	Purchase/subscribe to an automated emergency notification system (i.e., reverse 911) to notify residents/responders of natural and man-made hazard event information.	DF, EC, EH, EQ, F, MMH, SS, SWS, T	E&A	Large	2	n/a	n/a	EMA Emergency Manager / 911 Coordinator	2-5 years	County / FEMA Emergency Management Performance Grant	Medium/High
HM	Purchase and install storm warning sirens in unincorporated communities and subdivisions in the County, including but not limited to: Moccasin, Eberle, Winterrowd, Elliot's Town and Green Creek (St. Mary's Church).	SS, T	S&IP	Medium	2	n/a	n/a	EMA Emergency Manager / 911 Coordinator	2-5 years	County / Illinois DCEO	Medium/High
LM	Secure Memorandums of Agreement with townships to purchase and install storm warning sirens at their buildings, including but not limited to: Bishop Township, Jackson Township, Mound Township, Watson Township and West Township.	SS, T	LP&R	Medium	2	n/a	n/a	EMA Emergency Manager / 911 Coordinator	1 year	County	Low/Medium
HM	Purchase and install new storm warning sirens at select township buildings including but not limited to: Bishop Township, Jackson Township polling place, Mound Township, Watson Township and West Township.	SS, T	S&IP	Medium	2	n/a	n/a	EMA Emergency Manager / 911 Coordinator	2-5 years	County / Illinois DCEO	Medium/High

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (just over 34,000 individuals), projected population growth and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

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DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storm
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Figure MIT-4
Effingham County Hazard Mitigation Actions
(Sheet 4 of 7)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis
						New	Existing				
Emergency Management Agency / 911 Continued…											
HM	Purchase and install a storm warning siren on County Highway Building.	SS, T	S&IP	Small	2	n/a	n/a	EMA Emergency Manager / 911 Coordinator	2-5 years	County / Illinois DCEO	Medium/High
Emergency Management Agency / Sheriff's Office											
HL	Install "hardening" materials such as shatter-glass at County facilities to make the buildings resistant to natural and man-made hazard events.	EQ, MMH, SS, T	S&IP	Medium	2, 3, 5, 8	n/a	Yes	EMA Emergency Manager / Sheriff	5 years	County / FEMA Pre-Disaster Mitigation	High/High
Sheriff's Office											
HM	Purchase and install an automatic emergency backup generator at the Effingham County Sheriff's Office to provide uninterrupted power and maintain continuity of government and operations during power outages. The Sheriff's Office includes the County government offices, GIS, the Jail and 911 dispatch center.	EH, F, SS, SWS, T	S&IP	Large	2, 3, 5	n/a	Yes	Sheriff / Chairman County Board	2-3 years	County / FEMA Pre-Disaster Mitigation	Medium/High
Health Department											
HM	Purchase and install an automatic emergency backup generator at the Effingham County Health Department's Emergency Operations Center to provide uninterrupted power and maintain continuity of government and operations during power outages.	EH, F, SS, SWS, T	S&IP	Large	2, 3, 5	n/a	Yes	Administrator / Chairman County Board	2-3 years	County / FEMA Pre-Disaster Mitigation / Illinois DCEO	Medium/High

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (just over 34,000 individuals), projected population growth and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

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DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storm
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Figure MIT-4
Effingham County Hazard Mitigation Actions
(Sheet 5 of 7)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis
						New	Existing				
Highway Department											
HM	Purchase and install an automatic emergency backup generator at the Effingham County Highway Department maintenance building to provide uninterrupted power and maintain continuity of operations during power outages.	EH, F, SS, SWS, T	S&IP	Medium	2, 3, 5	n/a	Yes	Highway Engineer / Chairman County Board	2-3 years	County / FEMA Pre-Disaster Mitigation / Illinois DCEO	Medium/High
HM	Purchase portable, trailer-mounted LED emergency message boards to alert the public of hazardous conditions associated with natural and man-made hazard events.	DF, EH, EQ, F, MMH, SS, SWS, T	E&A	Small	2	n/a	n/a	Highway Engineer / Sheriff / EMA Emergency Manager	2-5 years	County	Medium/Medium
LM	Conduct hydrologic/hydraulic analysis to determine the cause of and identify design solutions to address recurring roadway flooding at Brady Bridge on County Highway 12 (300th Avenue) west of US Route 45 over the Little Wabash River.	F, SS	E&A	Small	2, 3, 5	n/a	Yes	Highway Engineer	2-5 years	County / IDOT Local Roads	Medium/Medium
HM	Construct the identified design solutions to address recurring roadway flooding at Brady on County Highway 12 (300th Avenue) west of US Route 45 over the Little Wabash River.	F, SS	S&IP	Small	2, 3, 5	n/a	Yes	Highway Engineer	5 years	County / IDOT Local Roads	High/Medium
HM	Purchase additional right-of-way and install living snow fences on the north side of 1600th Avenue between 300th Street and 600th street to limit blowing and drifting of snow, maintain access and ease hazardous driving conditions.	SWS	NSP	Small	2, 3, 5	n/a	Yes	Highway Engineer	1-3 years	County / FEMA Pre-Disaster Mitigation	Medium/Medium

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Hazard(s) to be Mitigated:

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DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storm
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Figure MIT-4
Effingham County Hazard Mitigation Actions
(Sheet 6 of 7)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis
						New	Existing				
Highway Department Continued…											
LM	Conduct hydrologic/hydraulic analysis to determine the cause of and identify design solutions to address recurring roadway flooding at the County Highway 9 (1800th Avenue) bridge over Green Creek.	F, SS	E&A	Small	2, 3, 5	n/a	Yes	Highway Engineer	2-5 years	County / IDOT Local Roads	Medium/Medium
HM	Construct the identified design solutions to address recurring roadway flooding at the County Highway 9 (1800th Avenue) bridge over Green Creek.	F, SS	S&IP	Small	2, 3, 5	n/a	Yes	Highway Engineer	5 years	County / IDOT Local Roads	High/Medium
LM	Conduct hydrologic/hydraulic analysis to determine the cause of and identify design solutions to address recurring roadway flooding at the County Highway 23 (1000th Road) bridge north of 800th Avenue over the Little Wabash River.	F, SS	E&A	Small	2, 3, 5	n/a	Yes	Highway Engineer	2-5 years	County / IDOT Local Roads	Medium/Medium
HM	Construct the identified design solutions to address recurring roadway flooding at the County Highway 23 (1000th Road) bridge north of 800th Avenue over the Little Wabash River.	F, SS	S&IP	Small	2, 3, 5	n/a	Yes	Highway Engineer	5 years	County / IDOT Local Roads	High/Medium
HM	Retrofit/add to existing township buildings or construct new standalone structures to serve as a community safe room equipped with emergency backup generator and HVAC units that can also serve as a warming/cooling center for township residents.	EC, EH, SS, T	S&IP	Small	2	Yes	Yes	Highway Engineer / Township Supervisors	5 years	County / FEMA Pre-Disaster Mitigation / USDA – RD Community Facilities Programs	High/High

† Identifies the most likely funding source to be pursued for the activity/project described. However, if funding is unavailable through the most likely or other suggested sources, then implementation of medium to large-scale activities/projects is unlikely due to the County's size (just over 34,000 individuals), projected population growth and budgetary constraints. The County works hard to maintain critical services to its residents. Additional funding is necessary if implementation is to be achieved within the time frames specified.

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DF	Dam Failure	F	Flood
DR	Drought	MMH	Man-Made Hazard
EC	Extreme Cold	SS	Severe Storm
EH	Excessive Heat	SWS	Severe Winter Storm
EQ	Earthquake	T	Tornado

Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

Figure MIT-4
Effingham County Hazard Mitigation Actions
(Sheet 7 of 7)

Priority	Activity/Project Description	Hazard(s) to be Mitigated	Type of Mitigation Activity	Size of Population Affected	Goal(s) Met	Reduce Effects of Hazard(s) on Buildings & Infrastructure		Organization / Department Responsible for Implementation & Administration	Time Frame to Complete Activity	Funding Source(s)†	Cost/Benefit Analysis
						New	Existing				
Highway Department Continued…											
HM	Purchase additional road signage and barricades to alert the public of hazardous conditions, detours, etc. associated with natural and man-made hazard events.	DF, EH, EQ, F, MMH, SS, SWS, T	E&A	Medium	2	n/a	n/a	Highway Engineer	1-3 years	County / IDOT Local Roads	Medium/High
HM	Purchase additional right-of-way as needed to reshape ditch back slopes and create wider, deeper ditches to alleviate drainage problems at various locations in the County.	F, SS	S&IP	Small	2, 3, 5	n/a	Yes	Highway Engineer	3-5 years	County / IDOT Local Roads	Medium/High

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Type of Mitigation Activity:

E&A	Education & Awareness	NSP	Natural Systems Protection
LP&R	Local Plans & Regulations	S&IP	Structure & Infrastructure Projects

5.0 PLAN MAINTENANCE

This section focuses on the Federal Emergency Management Agency (FEMA) requirements for maintaining and updating the Plan once it has been approved by FEMA and adopted by the participating jurisdictions. These requirements include:

- establishing the method and schedule for monitoring, evaluating and updating the Plan;
- describing how the mitigation strategy will be incorporated into existing planning processes; and
- detailing how continued public input will be obtained.

These requirements ensure that the Plan remains an effective and relevant document. The following provides a detailed discussion of each requirement.

5.1 MONITORING, EVALUATING & UPDATING THE PLAN

Outlined below is a method and schedule for monitoring, evaluating and updating the Plan. This method allows the participating jurisdictions to review and adjust the planning process as needed, make necessary changes and updates to the Plan and track the implementation and results of the mitigation actions that have been undertaken.

5.1.1 Monitoring and Evaluating the Plan

The Plan will be monitored and evaluated by a Plan Maintenance Subcommittee on an annual basis. The Plan Maintenance Subcommittee will be composed of key members from the Planning Committee, including representatives from all of the participating jurisdictions. The Subcommittee will be chaired by the Effingham County Emergency Management Agency (EMA). All meetings held by the Subcommittee will be open to the public. The information gathered at each Subcommittee meeting will be documented and provided to all participating jurisdictions for their review and use in the Plan update.

The Effingham County EMA will be responsible for monitoring the status of the mitigation actions identified in the Plan and providing the Illinois Emergency Management Agency (IEMA) with an annual progress report. It will be the responsibility of each participating jurisdiction to provide a progress report on the status of their mitigation actions at each Subcommittee meeting.

Monitoring & Evaluating

- A Plan Maintenance Subcommittee will be formed to monitor and evaluate the Plan.
- The ***Plan will be monitored and evaluated*** on an ***annual basis***.
- Each participating jurisdiction will be responsible for providing an annual progress report on the status of their mitigation actions.
- ***New mitigation actions can be added*** by participating jurisdictions ***during the annual evaluation.***

The Plan Maintenance Subcommittee will also evaluate the Plan on an annual basis to determine the effectiveness of the planning process and identify any implemented mitigation actions. In addition, the Subcommittee will decide whether any changes need to be made. As part of the evaluation of the planning process, the Subcommittee will review the goals to determine whether they are still relevant or if new goals need to be added; assess whether other natural or man-made hazards need to be addressed or included in the Plan; and

review any new hazard data that may affect the Risk Assessment portion of the Plan. The Subcommittee will also evaluate whether other County departments should be invited to participate.

In terms of evaluating the effectiveness of the mitigation actions that have been implemented, the Subcommittee will assess whether a project is on time, in line with the budget and moving ahead as planned; whether the project achieved the goals outlined and had the intended result; and whether losses were avoided as a result of the project. In addition, each of the participating jurisdictions will be given an opportunity to add new mitigation actions to the Plan and modify or discontinue mitigation actions already identified. In some cases a project may need to be removed from the list of mitigation actions because of unforeseen problems with implementation.

5.1.2 Updating the Plan

The Plan must be updated within five years of the Plan approval date indicated on the signed FEMA final approval letter. (This date can be found in Section 6, Plan Adoption.) This ensures that all the participating jurisdictions will remain eligible to receive federal grant money to implement those mitigation actions identified in this Plan.

The Effingham County EMA, with assistance from the Plan Maintenance Subcommittee, will be responsible for updating the Plan. The update will incorporate all of the information gathered and changes proposed at the previous annual monitoring and evaluation meetings. In addition, any jurisdictions that did not take part in the previous planning process may do so at this time. It will be the responsibility of these jurisdictions to provide all of the information needed to be integrated into the Plan update.

Updating the Plan

- The Effingham County EMA, with assistance from the Plan Maintenance Subcommittee, will be responsible for updating the Plan.
- The Plan ***must be updated within 5 years of the Plan approval date indicated on the signed FEMA final approval letter***.
- Any jurisdictions that did not take part in the previous planning process who now wish to participate may do so.
- Once the Plan update has received FEMA/IEMA approval, each participating jurisdiction ***must re-adopt the Plan to remain eligible to receive federal monies.***

A public forum will be held to present the Plan update to the public for review and comment. The comments received at the public forum will be reviewed and incorporated into the Plan update. The Plan update will then be submitted to IEMA and FEMA for review and approval. ***Once the Plan update has received state and federal approval, FEMA requires that each of the participating jurisdictions re-adopt the Plan to remain eligible to receive federal monies to implement identified mitigation actions.***

5.2 Incorporating the Mitigation Strategy into Existing Planning Mechanisms

As part of the planning process, the Planning Committee identified current plans, policies/ordinances and maps that supplement or help support mitigation planning efforts. **Figure PP-3** identifies the existing planning mechanism available by jurisdiction. It will be the

responsibility of each participating jurisdiction to incorporate, where applicable, the mitigation strategy and other information contained in the Plan into the planning mechanisms identified for their jurisdiction.

Adoption of this Plan will trigger each participating jurisdiction to review and, where appropriate, integrate the Plan into other available planning mechanisms. The Plan Maintenance Subcommittee's annual review will help maintain awareness of the Plan among the participating jurisdictions and encourage them to actively integrate it into their day-to-day operations and planning mechanisms. Any time a mitigation action is slated for implementation by a participating jurisdiction, it will be integrated into their capital improvement plan/budget.

Several of the participating jurisdictions have limited capabilities to integrate the mitigation strategy and other information contained in the Plan into existing planning mechanisms. Five of the nine participating municipalities/townships are very small in size (less than 750 residents) and do not have the financial resources or trained personnel to develop planning mechanisms such as comprehensive plans. Only Dietrich and Teutopolis have comprehensive plans in place and only four of the participating municipalities have building codes. While the South Central Illinois Regional Planning and Development Commission is available to assist participating jurisdictions with planning and community development, a general reluctance by the participants to implement such policies may hinder implementation.

5.3 CONTINUED PUBLIC INVOLVEMENT

The County and participating jurisdictions understand the importance of continued public involvement and will seek public input on the Plan throughout the plan maintenance process. A copy of the approved Plan will be maintained and available for review at the Effingham County EMA Office. Individuals will be encouraged to provide feedback and submit comments for the next Plan update to the Effingham County EMA.

The comments received will be compiled and presented at the annual Plan Maintenance Subcommittee meetings where members will consider them for incorporation into the next Plan update. All meetings held by the Plan Maintenance Subcommittee will be noticed and open to the public. A separate public forum will be held prior to the Plan update submittal to provide the public an opportunity to comment on the proposed revision to the Plan.

6.0 PLAN ADOPTION

The final step in the planning process is the adoption of the approved Plan by each participating jurisdiction. Each jurisdiction must formally adopt the Plan to remain eligible for federal grant monies to implement mitigation actions identified in this Plan.

6.1 PLAN ADOPTION PROCESS

Before the Plan could be adopted by the participating jurisdictions, it was made available for public review and comment through a public forum and comment period. Comments received were incorporated into the draft Plan and the Plan was then submitted to the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA) for their review and approval.

Upon review and approval by IEMA and FEMA, the Plan was presented to the County and participating jurisdictions for adoption. ***Each participating jurisdiction was required to formally adopt*** the Plan to become eligible to receive federal grant monies to implement the mitigation actions identified in this Plan. Any jurisdiction that chose not to adopt the Plan did not affect the eligibility of those who did.

Figure PA-1 identifies the participating jurisdictions and the date each formally adopted the Plan. Signed copies of the adoption resolutions are located in **Appendix L**. FEMA signed the final approval letter on (date) which began the five-year approval period and set the an expiration date of (date) for the Plan.

Figure PA-1
Plan Adoption Dates

Participating Jurisdiction	Plan Adoption Date
Effingham County	
Beecher City, Village of	
Beecher City CUSD #20	
Dieterich, Village of	
Effingham, City of	
Mason, Town of	
Mound Township	
Shumway, Village of	
Teutopolis, Village of	
Watson, Village of	
Watson Township	

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Figure PA-1
Plan Adoption Dates

Participating Jurisdiction	Plan Adoption Date
Effingham County	
Beecher City, Village of	
Beecher City CUSD #20	
Dieterich, Village of	
Effingham, City of	
Mason, Town of	
Mound Township	
Shumway, Village of	
Teutopolis, Village of	
Watson, Village of	
Watson Township	