SUMMARY NOTES OF THE JUNE 29, 2016 MEETING OF THE WASHINGTON COUNTY HAZARD MITIGATION PLAN LOCAL PLANNING TEAM

INTRODUCTION

The June 29, 2016, meeting of the Washington County Hazard Mitigation Plan Local Planning Team was convened at the Washington County Sheriff's Department at 2:03 p.m. The meeting was called to order by Rob Schmid, Washington County Emergency Management Coordinator. Attendance was taken by circulating a sign-in sheet.

In attendance at the meeting were the following individuals:

Local Planning Team Members	
Rob Schmid, Chair	Emergency Management Coordinator, Washington County
Joseph E. Boxhorn, Secretary	Senior Planner, Southeastern Wisconsin Regional Planning Commission
Brad Bautz	Director of Emergency Management, Town of Erin
Ryan Betancur	Emergency Preparedness Coordinator, Washington County Health Department
Tom Bishop	Chief of Police, Village of Kewaskum
Richard Engel	Chairman, Washington County Volunteer Organizations Active in Disasters/Assistant Emergency Coordinator Amateur Radio Emergency Service
Phil Gaudet	Land Resources Manager, Washington County Land Use Division
Joe Gonnering	Chairman, Town of Trenton
Jim Healy	Village Administrator, Village of Richfield
Ray Heidtke	Chairman, Town of Jackson
Laura L. Kletti	Chief Environmental Engineer, Southeastern Wisconsin Regional Planning Commission
Don Kriefall	Washington County Supervisor
Gerald W. Kudek	Fire Chief, City of West Bend
Chris Marks	Emergency Management Director, Village of Richfield
Aaron W. Owens	Planner, Southeastern Wisconsin Regional Planning Commission
Jeff Puetz	Director of ERM, West Bend Mutual Insurance
Mark Piotrowicz	City Planner, City of West Bend
Scott Schmidt	County Engineer/Highway Commissioner, Washington County
Deb Sielski	Deputy Administrator, Washington County Planning and Parks Department
Paul J. Stephans	Fire Chief, City of Hartford

Mr. Schmid welcomed the attendees to the meeting, thanked them for their participation, and asked them to introduce themselves.

CONSIDERATION OF THE SUMMARY NOTES OF THE OCTOBER 19, 2015 LOCAL PLANNING TEAM MEETING

Mr. Schmid introduced Joseph E. Boxhorn of the Southeastern Wisconsin Regional Planning Commission (SEWRPC) staff. At Mr. Schmid's request, Mr. Boxhorn reviewed the summary notes of the

October 19, 2015 meeting of the Local Planning Team. He stated that several exhibits are attached to the summary notes. He indicated that Exhibit B contains a revised version of Table II-5. He noted that the table has been revised to show equalized property values from the 2015 equalization. He added that the table also give a more detailed breakdown of types of property.

Mr. Boxhorn stated that Exhibit C contains Map II-3A and Appendix A-2, which he proposes to add to Chapter II. He explained that this map shows planned land use for year 2035 for the incorporated municipalities in the County. He noted that Appendix A-2 shows how the categories on the map relate to the categories in the local plans. He noted that the accompanying text to be added to Chapter II can be found at the top of page 4 of the summary notes.

Mr. Boxhorn asked whether there were any corrections, questions, or comments on the summary notes. Mr. Schmid noted that Mr. Groelshel's name was misspelled in the summary notes. Mr. Boxhorn indicated that this would be corrected. No other additions or corrections were offered.

Mr. Boxhorn indicated that the Local Planning team members could send him any comments or corrections to the summary notes by electronic mail or through the comments screen on the project webpage. He proposed that if he receives no comments by July 8, 2016, he will consider the summary notes to present an accurate reflection of what transpired at the October 19, 2015, meeting.

DISCUSSION OF HAZARDS TO BE ADDRESSED BY THE WASHINGTON COUNTY HAZARD MITIGATION PLAN

Mr. Schmid noted that the draft of Chapter III that the Local Planning Team will review during most of this meeting gives an assessment of risks associated with the hazards that the Team selected at the October 19, 2015 meeting for the plan to address. He stated that he would like the Team to review several hazards in light of the risk analyses presented in Chapter III and reconsider the appropriateness of addressing them in the County hazard mitigation plan. Mr. Schmid added that this also presents a final opportunity for the Team to propose any additional hazards for the plan to address.

Mr. Schmid stated that the risk analysis presented in Chapter III for school violence found no history of this hazard occurring in Washington County. He reported that he discussed the possibility of the hazard mitigation plan addressing this hazard with the law enforcement liaison officers to schools in the County. He stated that the liaison officers indicated that this issue was being adequately addressed through efforts of the school districts and the Sheriff's and police departments in the County. He added that the liaisons also indicated that they felt that this was not an appropriate issue to address within the hazard mitigation plan. Mr. Schmid proposed removing this hazard from the hazards to be addressed by the plan. Mr. Boxhorn explained that if the Team would decide to remove school violence from the list of hazards that the plan addresses, the risk analysis for this hazard would be removed from Chapter III and a short discussion of school violence would be added to the section of the chapter that discusses hazards that were considered for inclusion but rejected. The consensus of the Local Planning Team was to remove school violence from the list of hazards to be addressed by the hazard mitigation plan.

[Secretary's Note: The section discussing school violence on pages 92-97 of Chapter III was deleted from the Chapter. The entry for school violence was deleted from Table III-6. The following paragraph was added after the third full paragraph on page 11 of Chapter III:

"*School Violence*

> School violence is violence that occurs on school property, on the way to or from school or school-sponsored events, or during school-sponsored events. Violence is the intentional use of physical force or power against another person, group, or community, with the behavior likely to cause physical or psychological harm. While systematic data are not available on incidents of school violence in schools located in Washington County, national data suggest that there has been a long-term decrease in the levels of school violence.[10] Liaisons from law enforcement departments to schools in Washington County have indicated that this issue is being adequately addressed through activities conducted by the school districts and law enforcement agencies within the County. Because of this, school violence will not be considered further in subsequent sections of this report.
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> [10]*Simone Robers, Jana Kemp, Amy Rathburn, Rachel E. Morgan, and Thomas D. Snyder*, Indicators of School Crime and Safety: 2013, *U.S. Department of Education National Center for Educational Statistics and U.S. Department of Justice Bureau of Justice Statistics, (NCES 2014-042/NCJ 243229), June 2014.*"
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> Subsequent footnotes in the chapter were renumbered.]

Mr. Schmid stated that he wanted to discuss the status of three additional hazards that were selected for the plan to address: cyberattack, communicable disease outbreaks, and terrorism.

Mr. Schmid asked whether the Team wished to retain cyberattack as a hazard for the plan to address. After some discussion, the consensus of the Local Planning Team was to retain this hazard.

Mr. Schmid asked whether the Team wished to retain communicable disease outbreaks as a hazard for the plan to address. After some discussion, the consensus of the Local Planning Team was to retain this hazard.

Mr. Schmid asked whether the Team wished to retain terrorism as a hazard for the plan to address. After some discussion, the consensus of the Local Planning Team was to retain this hazard.

Mr. Schmid asked the Team whether there were any other hazards that should be added to or removed from the list of hazards that the plan will address. None were offered.

CONSIDERATION OF CHAPTER III, "ANALYSIS OF HAZARD CONDITIONS," OF SEWRPC COMMUNITY ASSISTANCE PLANNING REPORT NO. 326, *WASHINGTON COUNTY HAZARD MITIGATION PLAN*

At Mr. Schmid's request, Mr. Boxhorn reviewed preliminary draft Chapter III, "Analysis of Hazard Conditions," of SEWRPC Community Assistance Planning Report No. 326, *Washington County Hazard Mitigation Plan.* Mr. Boxhorn indicated that he would display copies of the maps from Chapters III and IV on the projection screen in the meeting room during discussion of these chapters.

[Secretary's Note: Mr. Boxhorn's presentation is attached herein as Exhibit A.]

Mr. Boxhorn explained that this chapter addresses three major issues: 1) it documents how the hazards addressed in the plan were identified, 2) it briefly describes how the risk and vulnerabilities associated with these hazards were assessed, and 3) it presents a profile of each of the identified hazards. He added that the profiles include a definition and description of the hazard, descriptions of notable historical instances of the hazard that affected the County, descriptions of notable recent instances of the hazard that affected the County, an assessment of vulnerabilities to and likely impacts from the hazard, a description of potential future changes in impacts from the hazard, and a discussion of any differences among communities in the risks that they face from the hazard.

Mr. Boxhorn reviewed the section of the chapter on hazard identification. He noted that the results from the hazard and vulnerability assessment tool that were discussed at the October 19, 2015 meeting were incorporated into this section. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section chapter on vulnerability assessment analysis methods and procedures. He noted that this section includes a subsection describing climate trends since 1950 and climate projections for the middle of the 21st century. He explained that this subsection is used in the discussion of potential future changes for individual hazards later in the chapter. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section of the chapter on flooding and associated stormwater drainage problems. He noted that the first two paragraphs of this section on page 16 will be rearranged and that the duplicated sentence will be removed.

[Secretary's Note: The first two paragraphs on page 16 were revised to read (text in bold is included here, and in similar subsequent Secretary's Notes, to indicate language changed or added onto the text. Text will not be bold in the report):

"Flooding is a significant hazard in Washington County. As described in Chapter II, there are approximately 220 miles of major streams in the County, located within four watersheds: the Fox (Illinois) River, the Menomonee River, the Milwaukee River, and the Rock River watersheds. Floodplains are the wide, gently sloping areas contiguous to, and lying on both sides of, a stream channel. For planning and regulatory purposes, **floodplains** are normally defined as the areas subject to inundation by the one-percent-annual-probability (100-year recurrence interval) flood event. The floodplains shown on Map II-5 in Chapter II of this report have been identified by Washington County, the Wisconsin Department of Natural Resources (WDNR), and FEMA. Approximately 38,850 acres, not including surface water in lakes and existing stream channels, or about 14 percent of the total area of the County, are located within the one-percent-annual-probability flood hazard area. **There are also 14 major lakes in Washington County. Some of the one-percent-annual-probability floodplains in the County are associated with these lakes.**

A consideration in flood hazard mitigation is the potential for increased flooding due to dam failures. **As indicated in Table II-8A in Chapter II, there are 57 existing dams in Washington County. Hazard ratings have been assigned by the WDNR for 28 of these. One of those dams has been assigned a high hazard rating, two have been assigned significant hazard ratings, and the remaining 25 have been assigned low hazard ratings.[18] Both dams built according to accepted engineering standards at the time**

> **of construction and dams built without application of engineering principles can fail. When a dam fails or is subject to overtopping, large quantities of water can rush downstream with great destructive force. Because of the presence of one high hazard and two significant hazard dams in the County, future evaluation of floodplain areas related to dam failure should be considered. It should be noted that between 1990 and 2014 there was not loss of life associated with dam failures in Washington County.**"
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> The text of footnote number 18 was not changed.]

Mr. Schmidt noted that Main Street in the City of West Bend in no longer County Trunk Highway (CTH) P. He asked that the CTH P label be removed from Map III-5A. Mr. Boxhorn replied that it would be removed.

[Secretary's Note: The CTH P label was removed from Map III-5A.]

Mr. Boxhorn reviewed the subsection on historical flood events. He noted that this subsection is organized by watershed. Mr. Schmid asked that West Branch of the Menomonee River be added to the streams listed as being in the portion of the watershed that is located in Washington County.

[Secretary's Note: The sixth sentence in the last paragraph on page 20 of the draft chapter was revised to read:

> "Other streams of this watershed that are located in Washington County include Goldenthal creek, the Nor-X-Way Channel, the North Branch of the Menomonee River, **the West Branch of the Menomonee River,** and Willow Creek."]

Mr. Healy asked whether the discussion of flooding in the plan would make it easier for municipalities to receive funding for acquiring and removing flood prone lakeside properties. Mr. Boxhorn replied that adoption of the plan makes the municipalities eligible for funding through the Hazard Mitigation Grant Program, the Flood Mitigation Assistance Program, and the Pre-disaster Mitigation Program, all of which are administered by FEMA.

Mr. Boxhorn noted that he had obtained pictures of flooding in the Village of Slinger that had apparently occurred during the 1940s, but could find no records or descriptions of the event. He asked that anyone who has information on this event pass it on to him.

Mr. Boxhorn reviewed the subsection on historical flood events. No comments or questions were offered on this subsection.

Mr. Boxhorn reviewed the subsection on recent flood events. No comments or questions were offered on this subsection.

Mr. Boxhorn reviewed the subsection on vulnerability and community impacts assessment. He stated that two different analyses were conducted to assess the impacts of a one-percent-annual probability flood: an analysis using FEMA's HAZUS-MH software and a parcel-based analysis.

Mr. Boxhorn stated that the Wisconsin Division of Emergency Management (WEM) performed an analysis using HAZUS-MH to estimate the impacts of a one-percent-annual probability flood. He noted

that this analysis used a flood depth grid developed by the Wisconsin Department of Natural Resources (WDNR). He explained that HAZUS-MH makes estimates at the level of census blocks used in the 2010 U.S. Census. He added that the software estimates the value of structures at risk from flooding by value of structures in the census block based on the fraction of the block that is located within the floodplain. He thanked Caitlin Shanahan of the WEM staff for her efforts in performing this analysis. He noted that he feels that the estimates of flood damages resulting from the HAZUS-MH analysis probably represent an overestimate of the damages that would result from a one-percent-annual probability flood for reasons that are described in Chapter III.

Mr. Boxhorn stated that SEWRPC staff performed a parcel-based analysis to estimate the impacts of a one-percent-annual probability flood. He explained that this was done using a geographic information system (GIS) to identify structures in the floodplain. He added that damages resulting from flooding were estimated based upon the assessed value of the structure, flood elevations from the flood insurance study, and topographic mapping. He thanked Julia Orlowski of the SEWRPC staff for her efforts in conducting this analysis.

Mr. Piotrowicz asked whether the results of the parcel-based analysis were checked against FEMA's Letters of Map Amendment (LOMAs). Ms. Kletti replied that this is generally not done in this type of analysis.

[Secretary's Note: The parcel-based analysis was checked against the FEMA Letters of Map Amendment. Based upon the findings of this comparison the first three sentences in the first full paragraph on page 29 were revised to read:

"The parcel-based loss analysis refined the property value data presented by community in Chapter II to reflect specific flood prone structure information. There are currently **987** structures estimated to be located within the one-percent-annual-probability (100-year recurrence interval) flood hazard areas of Washington County. The locations of these structures are shown on Maps III-2 and II-3. There are **667** residential structures; **106** industrial, business, and commercial structures; **64** agricultural buildings; **137** residential mobile homes; **11** governmental structures; and **2** other structures."

Maps III-3 and III-4 and Tables III-8 and III-9 were revised to reflect the findings of the comparison. Revised versions of Maps III-3 and III-4 and Tables III-8 and III-9 are included herein as Exhibit B.

The third full paragraph on page 29 was revised to read:

"Estimated damages from the parcel-based analysis are shown in Table III-8 for the one-percent-annual-probability (100-year recurrence interval) flood event. In 2015, the total value of the **987** structures that are identified as being subject to flooding was about **$132.9 million**. Damages expected during a one-percent-annual-probability flood event affecting the entire County are estimated to be **$22.9 million**.]

Mr. Healy noted that Maps III-2 and III-3 show 55 residential structures in the floodplain adjacent to Druid Lake. He indicated that the floodway for this floodplain has been adjusted and asked that the floodplain be checked.

[Secretary's Note: The structures within the floodplain adjacent to Druid Lake was reviewed in conjunction with the comparison of the results of the parcel-based analysis to the FEMA LOMAs. The number of residential structures was found to be 53. This is shown on the revised versions of Maps III-2 and III-3 that are included in Exhibit B.]

Mr. Gaudet asked what assumptions were made to produce the damage estimates in the parcel-based analysis. Mr. Boxhorn replied that the assumptions are discussed on pages 27-28 of the draft chapter. He indicated that the first floor of residential buildings were assumed to be one foot above ground level. He added that the value of buildings were taken from the 2015 assessed value of improvements to the properties obtained from the County Assessor's Office.

Mr. Healy commented that he feels that the floodplain modeling conducted by the WDNR was overly conservative. He indicated that the Village of Richfield will be contracting with a consultant to develop their own floodplain models. Mr. Piotrowicz commented that the most recent Digital Flood Insurance Rate Maps (DFIRMs) for the Milwaukee River are more generalized than the previous DFIRMs which were based on more specific models.

[Secretary's Note: The following paragraph was added after the second full paragraph on page 26:

"The analyses estimating the damages that would result from a one-percent-annual probability were based on the floodplains that were available at the time the analyses were conducted. Several floodplain mapping projects are being conducted in Washington County which would refine these floodplains and associated data and could potentially change the damage estimates. These projects are described in Chapter V of this report.]

Mr. Schmid noted that Table III-9 does not include any specific flood considerations for the Village of Slinger and asked whether this is correct. Mr. Boxhorn replied that the parcel-based analysis found that there were no structures located within the floodplain in the Village. He indicated that this finding was specifically double checked. A Team member noted that there are some stormwater issues in the Village.

Mr. Healy stated that the Richfield Volunteer Fire Company will be selling its fire station No. 4 and building a new facility at Heritage Park near the center of the Village of Richfield. He noted that the new station will be out of the floodplain.

Mr. Boxhorn reviewed the subsections on agricultural flood damages, stormwater drainage problems, potential future changes, and multi-jurisdictional risk analysis. Mr. Kriefall asked whether the agricultural damages presented are expressed in current dollars. Mr. Boxhorn answered that they are expressed in 2014 dollars.

Mr. Piotrowicz noted that the orange dots on Map III-5A are not located at the sites of schools. Ms. Sielski added that the legend for this map does not indicate what the yellow dots depict. Mr. Boxhorn replied that he would check and correct the legend for his map.

[Secretary's Note: The legend for Map III-5A was corrected.]

Mr. Boxhorn reviewed the section on thunderstorms and associated hazards. Ms. Sielski noted that the legend to Map III-7 should read Washington County instead of Kenosha County.

[Secretary's Note: The legend on Map III-7 was corrected to read "Washington County."]

Mr. Boxhorn reviewed the section on tornadoes. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section on extreme temperatures. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section on winter storms. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section on drought. He explained that Table III-21 compares crop damage estimates attributed to drought in the National Climatic Data Center storm event database to the indemnities paid for losses due to drought by Federal crop insurance programs. He noted that there was little overlap between the estimates from these two sources. He stated that in those cases where the two overlap, the higher value was used. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section on transportation accidents. Mr. Piotrowicz asked whether the accident rates shown on Map III-10 were normalized against traffic levels. Mr. Boxhorn replied that they were. Mr. Healy noted that the Wisconsin Department of Transportation's rationale for planned roadwork along State Trunk Highway 164 is based upon high accident rates at intersections. He added that Map III-10 does not seem to show this. Mr. Schmidt responded that the analysis shown in the map is conducted on a segment-by-segment basis. He noted that problems at specific intersections may not show up in this type of analysis.

Mr. Boxhorn reviewed the section on contamination or loss of water supply. He noted that the section examines both groundwater and surface water sources of supply. He explained that although public water supply in the County relies exclusively on groundwater, there are some surface water withdrawals for other uses.

Mr. Kudek asked what the area labeled "Critical Recharge Area" on Map III-12 represents. Mr. Boxhorn gave a brief description of the aquifer system under Washington County. He stated that there are two aquifer systems underneath the County: a shallow aquifer system consisting of aquifers in glacial deposits and dolomite and a deep aquifer system consisting of aquifers in sandstone. He explained that under most of the County, these systems are separated by a layer of shale that prevents water from moving between the two systems. He indicated that this shale layer is absent in the area labeled "Critical Recharge Area." He added that this is the only area in the County providing recharge to the deep aquifer system and consequently the only area in the County in which contaminants deposited on the land's surface could potentially contaminate the deep aquifer system.

Mr. Stephans stated that one of the City of Hartford's wells is located in Dodge County. He asked whether this well is located within the critical recharge area. Mr. Boxhorn replied that his understanding is that all of the City's wells are finished in the shallow aquifers.

[Secretary's Note: Examination of currently active and permanently abandoned wells for the City of Hartford in the WDNR Groundwater Retrieval Network (GRN) database shows that all of the City's currently active wells are finished in the shallow aquifer. The City abandoned its last well in the deep sandstone aquifer in around 2009.]

Mr. Stephans stated that the well for the Erin Hills Golf Course may be finished in the deep aquifer. Mr. Boxhorn replied that this may be so and noted that this is a private well.

[Secretary's Note: Review of information in the WDNR GRN database shows that the Erin Hills Golf Course has five wells. Four of these are finished in the shallow aquifer and one is finished in the deep aquifer. It should be noted that the WDNR classifies these wells as being part of a transient non-community water system. This type of water system was not inventoried as part of the hazard mitigation plan.]

Mr. Boxhorn reviewed the section on loss of sewerage system. He noted that this section only applies to municipalities with either sanitary sewage conveyance systems or sanitary sewage conveyance and treatment systems. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section on hazardous material incidents. No comments or questions were offered on this section.

Mr. Boxhorn reminded the Local Planning Team that based on their decision during the discussion of hazards for the plan to address, the section on school violence would be removed from the chapter.

Mr. Boxhorn reviewed the section on terrorism. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section on cyberattack on local government. He noted that based upon State and national data, there are large differences in the estimates of risk. No comments or questions were offered on this section.

Mr. Boxhorn reviewed the section on electrical system outages. He indicated that he has some additional material to add to this section. No comments or questions were offered on this section.

[Secretary's Note: The following paragraph was added after the first paragraph on page 109:

"Most recent power outage events affecting Washington County are short term, lasting from a few hours to, at most a few days. Long-term events can happen. Two examples from outside Wisconsin illustrate this. In January 1998, the Montreal, Canada area experienced a major ice storm. The power outages resulting from this storm impacted over four million residents. Portions of the Montreal area were without power for over three weeks. Similarly, an ice storm hit the State of Kentucky in January 2009. At the peak of the storm, about 700,000 customers were without power. Two weeks after the storm 50,000 customers were still without power. It took 38 days to restore power to all of the affected customers."

The following paragraphs were added after the second paragraph on page 109:

"While likely to be rare, the impacts of a long-term power outage affecting Washington County could be large. Such an event would likely involve many downed trees and power lines. Downed power lines can present safety hazards for residents, travelers, and emergency responders. The response to such an event would be hampered by roads blocked by power lines and debris.

"Given experiences like the Montreal and Kentucky events and the 1976 Washington County ice storm described in the section on winter storms, it is

possible that a significant portion of Washington County's population and facilities could be without power for one to three weeks, should a particularly severe event occur. Following the 2009 Kentucky ice storm, about 37 percent of affected customers were without power one week after the storm. About 7 percent were still without power after two weeks. The Kentucky event resulted in 36 fatalities. The largest cause of death related to this event was carbon monoxide poisoning resulting from improper generator use. Given that the average high and low temperatures in Washington County during the winter are considerably colder than those in Kentucky,[87] the impacts on human life of an ice storm causing a power outage of similar severity in Washington County may be even greater.

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[87]*For example, average high temperatures during January are 43°F and 26°F, respectively in Louisville and West Bend. Average low temperatures during January are 27°F and 11°F, respectively, in Louisville and West Bend."*

The footnotes following this were renumbered.]

Mr. Boxhorn reviewed the section on communicable disease outbreaks. Mr. Schmid asked that definitions of disease outbreaks, epidemics, and pandemics be added to this section. He indicated that he would send suggested definitions via electronic mail. No other comments or questions were offered on this section.

[Secretary's Note: Mr. Schmid submitted suggested definitions to SEWRPC staff via electronic mail. A copy of Mr. Schmid's message is included herein as Exhibit C. The first full paragraph on page 110 was revised to read:

"**Several terms are used to describe episodes of communicable diseases. A "disease outbreak" describes a limited area of disease occurrence in a community at a particular time. An "epidemic" describes the outbreak and spread of a disease in a community that affects a significant number of people and/or animals over a relative short period of time. E**pidemics **may also** occur as part of the aftermath of natural disasters**, such as floods or tornadoes,** or human-induced hazards**, such as terrorist incidents. A "pandemic" is an epidemic that has spread over a large region, such as a country, a continent, or the world.**"]

During the meeting, Mr. Bautz provided comments on Chapter III to Ms. Kletti of the SEWRPC staff. Mr. Bautz stated that Table III-13 lists tornado number 3 as having impacted the Town of Erin; however, Map III-8 shows this tornado in the City of Hartford. He also noted that some thunderstorms that are shown as having affected the Town of Erin on Map III-7 are listed in Table III-10 as having occurred in Holy Hill or Hartford.

[Secretary's Note: Mapping coordinates and location descriptions for all storm events shown on Maps III-7 and III-8 were obtained from the National Climatic Data Center's (NCDC) storm event database and supplemented with descriptions given in the monthly storm data reports published by the NCDC and previously published by its predecessor agencies. Three aspects of the NCDC's reporting practices should be kept in mind when interpreting the locations

shown on Maps III-7 and III-8 and listed in the tables. First, the NCDC reports locations to the nearest minute of a degree. On maps that show an individual county, this can add some uncertainty to locations. Second, storms such as thunderstorms and tornadoes move across the landscape. As a result of this, a single storm may affect multiple communities. The storms are shown on the maps as points, both for clarity purposes and because information on the actual storm tracks are not available for most of the storms. Third, the National Weather Service, which is the source of much of the data in the NCDC database, often identifies locations of storm events using names of nearby communities, including unincorporated settlements. These names may not be reflective of political boundaries.]

Mr. Bautz asked whether the May 31, 1998 derecho which affected the Town of Erin is shown on Map III-7.

[Secretary's Note: This event is listed in Table III-10 as number 134. It is listed on Map III-7 among the events that affected the entire County.]

CONSIDERATION OF CHAPTER IV, "HAZARD MITIGATION GOALS," OF SEWRPC COMMUNITY ASSISTANCE PLANNING REPORT NO. 326, *WASHINGTON COUNTY HAZARD MITIGATION PLAN*

At Mr. Schmid's request, Mr. Boxhorn reviewed the preliminary draft of Chapter IV of the plan report. Mr. Boxhorn stated that the goals and objectives listed in this chapter have been largely taken from other plans such as land use, park and open space, and watershed plans. He explained that FEMA wants to see hazard mitigation planning integrated into other planning. He indicated that one way to do this is to link the plans through their goals.

Mr. Piotrowicz commented that he feels that the phrase "maintains biodiversity" should not be included in Goal No. 2, noting that he does not view this as being tied to hazard mitigation. He added that he feels that objectives 4, 5, and 6 under this goal should also be removed for the same reasons. He noted that he has no such difficulties with these issues in the context of other plans, such as comprehensive and park and open space plans.

The Team discussed Mr. Piotrowicz's comments. Mr. Puetz noted that the biodiversity is affected by drought hazards. Mr. Gaudet commented that preservation of biodiversity helps preserve wetlands, noting that this prevents development of monocultures in wetlands. He added that the presence of monocultures reduces the effectiveness of wetlands in storing water. Mr. Betancur noted that reductions in biodiversity can increase likelihood of vector-borne diseases occurring.

Mr. Schmid asked whether the goals and objectives presented in Chapter IV appear in other county hazard mitigation plans. Mr. Boxhorn replied that he used the goals and objectives from the Kenosha County hazard mitigation plan as a starting point for developing the goals and objectives for the Washington County plan. He added that these are also similar to those given in Racine County's plan and the City of Milwaukee's plan.

Mr. Boxhorn asked the Local Planning Team whether they wanted to remove the phrase "maintain biodiversity" and objectives 4 through 6 from Goal 2. Several Team members expressed reluctance to make a decision at this point, noting that they felt that there should be more examination of the issue. Ms. Sielski suggested that SEWRPC staff consult with the SEWRPC Chief Biologist and ask for his analysis

of the issue. Mr. Boxhorn indicated that he would discuss this topic with the Chief Biologist and report views of the Chief Biologist at the next meeting of the Local Planning Team.

[Secretary's Note: Goal 2 and Objectives 4 through 6 under Goal 2 were discussed with Dr. Thomas M. Slawski, SEWRPC Chief Biologist. Dr. Slawski indicated that when development occurs it is important to protect the integrity of natural systems to protect them from natural hazards. He emphasized that the protection of natural areas and the connectivity of natural areas is essential to protect human community infrastructure and quality of life from natural hazards. He explained that this is important to minimize the damage that occurs during a hazard event and to reduce the recovery time after such an occurrence. He noted that both of these effects act to reduce the total cost to the community resulting from a hazard incident. Based upon Dr. Slawski's suggestions, Goal 2 on page 4 was revised to read:

"A spatial distribution of the various land uses that maintains **connectivity among** and will result in the protection and wise use of the natural resources of the County, including its, soils, inland lakes and stream, groundwater, wetlands, woodlands, wildlife, and natural areas and critical species habitat."

Goal No. 2 in Table IV-1 was revised to read:

"A spatial distribution of the various land uses that maintains **connectivity among** and will result in the protection and wise use of the natural resources of the County, including its, soils, inland lakes and stream, groundwater, wetlands, woodlands, wildlife, and natural areas and critical species habitat."

Objectives and Standards 4, 5, and 6 under Goal No. 2 in Table IV-1 were revised to read:

"4. The types and distribution of land uses should be developed to minimize loss and fragmentation of Primary Environmental Corridors and isolated natural resource areas and wetlands (particularly those adjacent to streams and lakes) and promote connectivity among those natural resource areas in order to protect and preserve the ecological resilience and resistance to natural hazards."]

DISCUSSION OF ARRAGEMENTS FOR THE AUGUST 10, 2016 PUBLIC MEETING

Mr. Boxhorn announced that the first public informational meeting regarding the hazard mitigation plan will be held on Wednesday, August 10, 2016, from 6:00 p.m. to 8:00 p.m. He note that this meeting will be held in Rooms 1113A and B at the County's Public Agency Center, at 333 E. Washington Street, West Bend. He stated that the purposes of the meeting will be to present progress on plan development to date and solicit public input. He indicated that members of the Local Planning Team are welcome to attend this meeting, but that it is not a meeting of the Team.

Mr. Schmid stated that WEM has applied to FEMA for an extension of the deadlines for completing several hazard mitigation plans, including the Washington County plan. He indicated that this extension request was planned as part of the schedule for plan development, due to the short performance period attached to the grant.

Mr. Boxhorn reminded the Local Planning Team that additional comments on Chapters I through IV can be emailed to him. He added that they can also be sent through the comment screen on the hazard mitigation planning page of the SEWRPC website.

[Secretary's Note: This page also has materials from meetings and draft chapters and is at: http://www.sewrpc.org/SEWRPC/communityassistance/Hazard-Mitigation-Planning.htm]

Mr. Schmid thanked the members of the Local Planning Team for their participation at the meeting and in the planning effort.

ADJOURNMENT

There being no further business, the meeting was adjourned by unanimous consent at 4:03 p.m.

INFORMATION ON HAZARDOUS MATERIAL COMMODITY FLOW THROUGH WASHINGTON COUNTY PROVIDED BY ROB SCHMID, WASHINGTON COUNTY EMERGENCY MANAGEMENT COORDINATOR

Subsequent to the June 29, 2016 meeting of the Local Planning Team, Mr. Schmid provided SEWRPC staff with copies of a study examining the flow of hazardous materials through Washington County and information from the Canadian National Railroad regarding the types and quantities of dangerous goods transported through the County on their rail lines.

[Secretary's Note: The following paragraphs were added after the first full paragraph on page 92 of Chapter III:

"In 2011, Washington County examined the flow of hazardous materials through the County via several elements of the County's transportation network, including highways and railways.[66] As part of this study, random observations of traffic were conducted on highways at 10 locations and railroads at two locations in the County during late June and early July 2011. These observations noted the information displayed on the required hazardous material placards shown on vehicles carrying hazardous material cargo.

The study found that the number of vehicles displaying placards while traveling along the highway that passed these sites ranged between 0 vehicles per hour and 36.0 vehicles per hour, with an average of 6.1 vehicles per hour. Average numbers of vehicles per hour displaying placards varied among highway sites, ranging between 0.0 vehicles per hour and 14.5 vehicles per hour. Vehicles transporting hazardous materials were observed more frequently on USH-41[67] than on USH-45 or State trunk highways. Average numbers of vehicles observed transporting hazardous materials on USH-41, USH 45, and State trunk highways were 12.39 vehicles per hour, 3.2 vehicles per hour, and 1.9 vehicles per hour, respectively. The study also found that the number of railroad cars displaying placards while passing railroad crossings in the County ranged between 0 cars per hour and 16.0 cars per hour, with an average of 4.5 cars per hour.

The placards indicating eight out of nine general categories of hazardous materials were observed on vehicles traveling on highways in Washington

County. No placards indicating the presence of radioactive materials were observed. Flammable liquids, corrosive substances, and compressed gases accounted for 53 percent, 20 percent, and 18 percent, respectively, of the general categories shown on the placards that were observed. Specific placards for 54 different substances were observed. About 44 percent of vehicles carrying placards that specifically identified a substance were carrying gasoline. Six other substances were observed being carried by 3 percent or more of vehicles with placards identifying specific substances: sodium hydroxide solution, liquids held at elevated temperatures, alcohols, liquefied petroleum gas, refrigerated liquefied carbon dioxide gas, and refrigerated liquefied nitrogen gas. The majority of vehicles displaying hazardous material placards while travelling along highways in the County consisted of tanker and semi-trailer trucks. About 94 percent of the railroad cars displaying placards were tanker cars.

The study also examined the types and quantities of extremely hazardous and hazardous substances present at fixed facilities in the County. This was done by examining a random sample of 31 emergency response contingency plans from fixed facilities that are on file with the County. The substances present at these facilities in the largest quantities were sulfuric acid, anhydrous ammonia, aluminum sulfide, nitric acid, and phosphoric acid. Four substances were reported as being present at more than facility: sulfuric acid, anhydrous ammonia, nitric acid, and chlorine.

The Canadian National Railroad provided the Washington County Emergency Management Office with a list of dangerous goods which it transported through the Village of Slinger for the year 2013. This list included 50 hazardous substances. Materials in seven out of nine general categories of hazardous substances were represented on the list. In addition, the list included substances classified as "combustible liquids," which are not included among the nine general categories. The list did not include any explosive or radioactive substances. Based upon "dangerous goods units" given on the list, the majority of hazardous materials shipped along the Canadian National Railroad through Washington County in 2013 consisted of flammable liquids, combustible liquids, flammable solids, and corrosive substances."

_____

[66]*Washington County Local Emergency Planning Committee, "Hazardous Materials Commodity Flow Study," August 2011.*

[67]*Since the study was conducted, this highway has been redesignated IH-41.*

The subsequent in the Chapter footnotes were renumbered.]

EXHIBIT A

Washington County Hazard Mitigation Plan:
Local Planning Team Meeting
June 29, 2016
SEWRPC
Serving the counties of
Kenosha, Milwaukee,
Ozaukee, Racine, Walworth,
Washington, and Waukesha
Joseph E. Boxhorn, Ph.D., Senior Planner
Southeastern Wisconsin Regional Planning Commission
232242

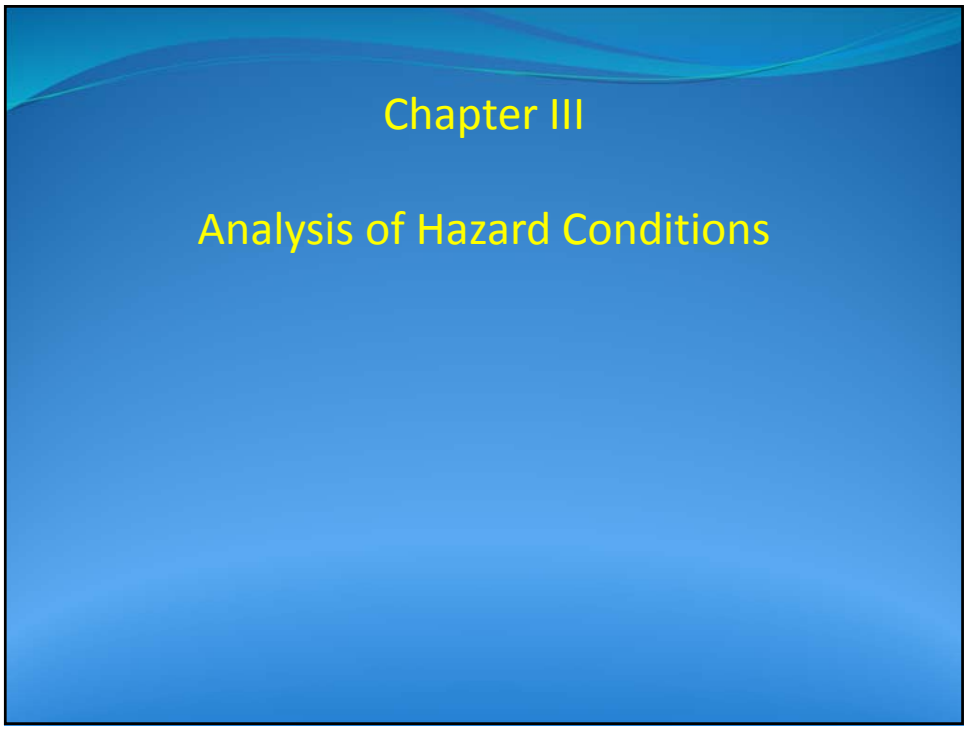

Chapter III
Analysis of Hazard Conditions

EXHIBIT A

Chapter III Overview

- Documents the identification of the hazards that the plan addresses
  - This includes brief descriptions of hazards that are not addressed but were considered for inclusion during the planning process
- Describes how risks and vulnerabilities were assessed
- Gives a profile of each hazard addressed by the plan

Hazard Identification

Table III-6

SUMMARY OF HAZARDS TO BE CONSIDERED IN THE WASHINGTON COUNTY HAZARD MITIGATION PLAN

Hazard	Risk of Occurrence (high, medium, or low)	Warning Time (short, medium, or long)	Damage to Property (high, moderate, or low)	Threat to Life Safety (high, medium, or low)	Duration of Impact (long, moderate, or short)	Size of Area Affected (large, medium, or small)
Natural Hazards						
Flooding and Stormwater Drainage Problems	High	Medium	High	Low	Moderate	Large
Thunderstorms, High-Wind, Hail, and Lightning	High	Short	High	High	Long	Large
Tornadoes	Low	Medium	High	Medium	Short	Small
Extreme Temperatures	Medium	Long	Low	High	Long	Large
Winter Storms	Medium	Medium	Low	Medium	Moderate	Large
Drought	Medium	Medium	Low	Low	Long	Large
Technological/Human-Induced Hazards						
Transportation Accidents	Medium	Short	Moderate	High	Short	Small
Contamination or Loss of Water Supply System	Low	Short	Moderate	Medium	Moderate	Medium
Loss of Sewerage System	Low	Short	Moderate	Medium	Moderate	Medium
Hazardous Material Incidents	High	Short	Low	Medium	Moderate	Small
School Violence	Low	Short	Low to moderate	Medium	Short	Small
Terrorism Incident	Low	Short	Moderate to high	High	Short	Small to medium
Cyberattack on Local Government	Low	Short	Moderate	Low	Moderate	Small to medium
Electrical System Outage	Medium	Short	Low	Low	Short	Small to medium
Communicable Disease Outbreak	Low	Short to medium	Low	High	Moderate to long	Small to large

Source: Washington County Division of Emergency Management, Washington County All Hazards Mitigation Plan Local Planning Team, and SEWRPC.

EXHIBIT A

Hazard Profiles

- Most profiles follow a similar format
  - Definition and description of the hazard
  - Description of notable historical events that affected the County
  - Description of some notable recent events that affected the County
  - Assessment of vulnerabilities to the hazard and community impacts from the hazard
  - Description of potential future changes in impacts
  - Discussion of any differences among communities in risks

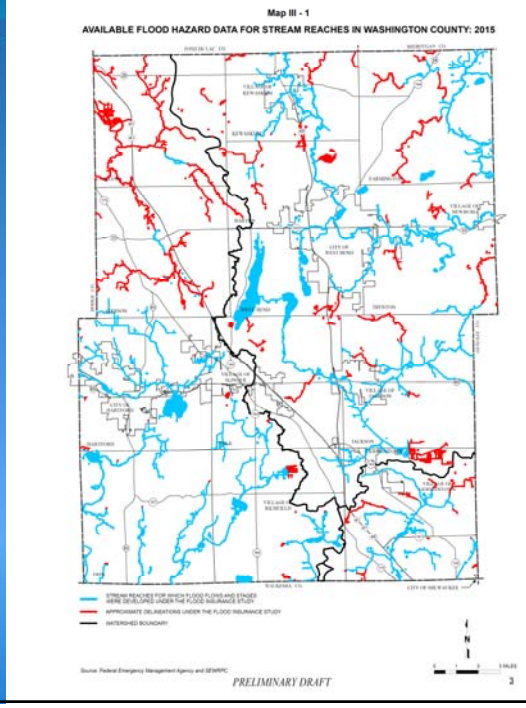
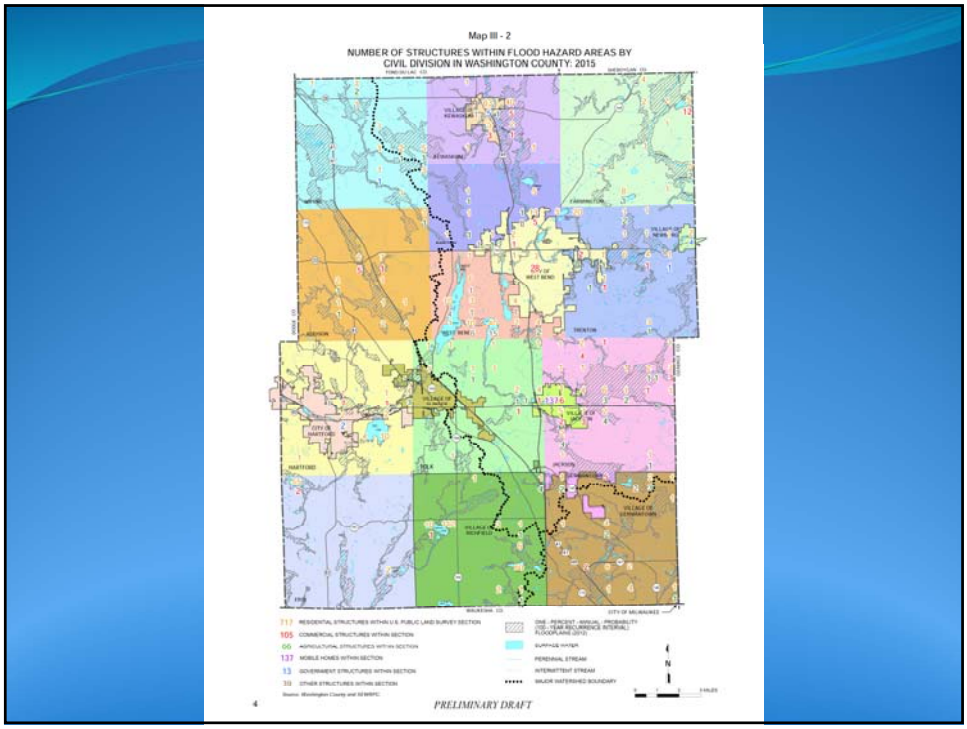


EXHIBIT A


Map III - 2
NUMBER OF STRUCTURES WITHIN FLOOD HAZARD AREAS BY
CIVIL DIVISION IN WASHINGTON COUNTY: 2015
717 RESIDENTIAL STRUCTURES WITHIN U.S. PUBLIC LAND SURVEY SECTION
105 COMMERCIAL STRUCTURES WITHIN SECTION
66 AGRICULTURAL STRUCTURES WITHIN SECTION
137 MOBILE HOMES WITHIN SECTION
13 GOVERNMENT STRUCTURES WITHIN SECTION
39 OTHER STRUCTURES WITHIN SECTION
ONE - PERCENT - ANNUAL - PROBABILITY (100 - YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)
SURFACE WATER
PERENNIAL STREAM
INTERMITTENT STREAM
MAJOR WATERSHED BOUNDARY
N
4
PRELIMINARY DRAFT

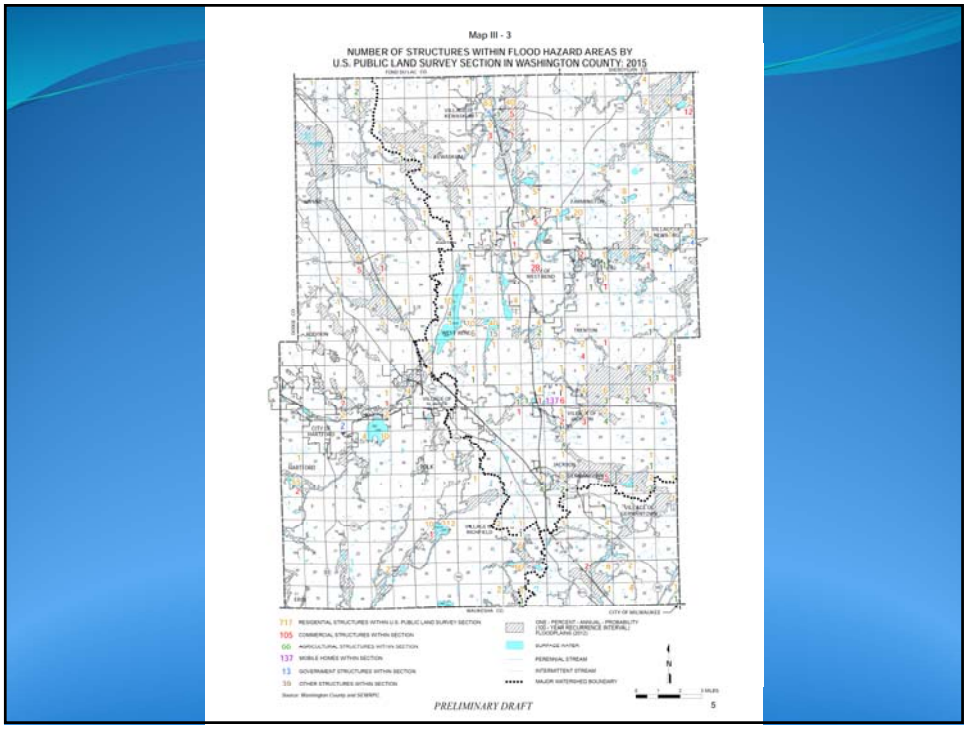
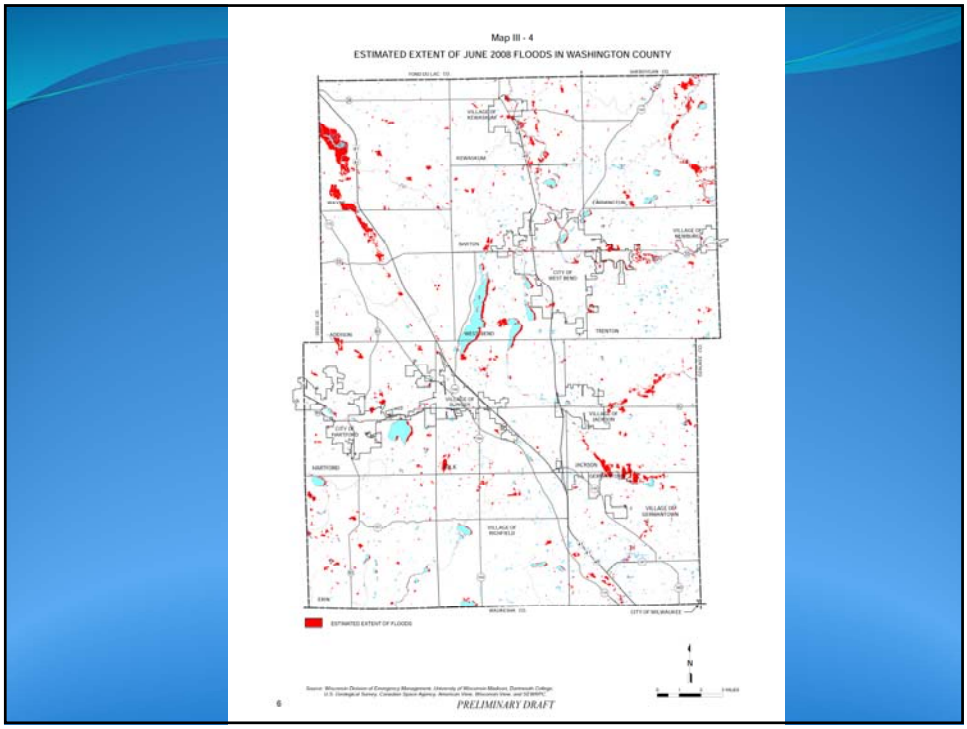

Map III - 3
NUMBER OF STRUCTURES WITHIN FLOOD HAZARD AREAS BY
U.S. PUBLIC LAND SURVEY SECTION IN WASHINGTON COUNTY: 2015
717 RESIDENTIAL STRUCTURES WITHIN U.S. PUBLIC LAND SURVEY SECTION
105 COMMERCIAL STRUCTURES WITHIN SECTION
66 AGRICULTURAL STRUCTURES WITHIN SECTION
137 MOBILE HOMES WITHIN SECTION
13 GOVERNMENT STRUCTURES WITHIN SECTION
39 OTHER STRUCTURES WITHIN SECTION
ONE - PERCENT - ANNUAL - PROBABILITY (100 - YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)
SURFACE WATER
PERENNIAL STREAM
INTERMITTENT STREAM
MAJOR WATERSHED BOUNDARY
N
5
PRELIMINARY DRAFT

EXHIBIT A


Map III - 4
ESTIMATED EXTENT OF JUNE 2008 FLOODS IN WASHINGTON COUNTY
ESTIMATED EXTENT OF FLOODS
6
PRELIMINARY DRAFT

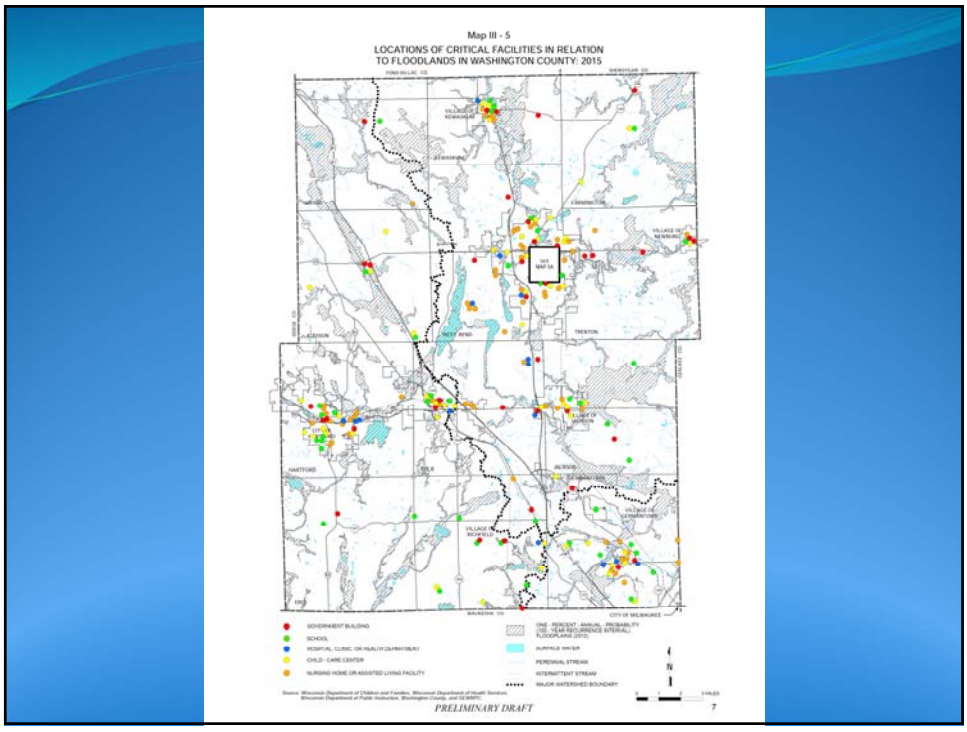
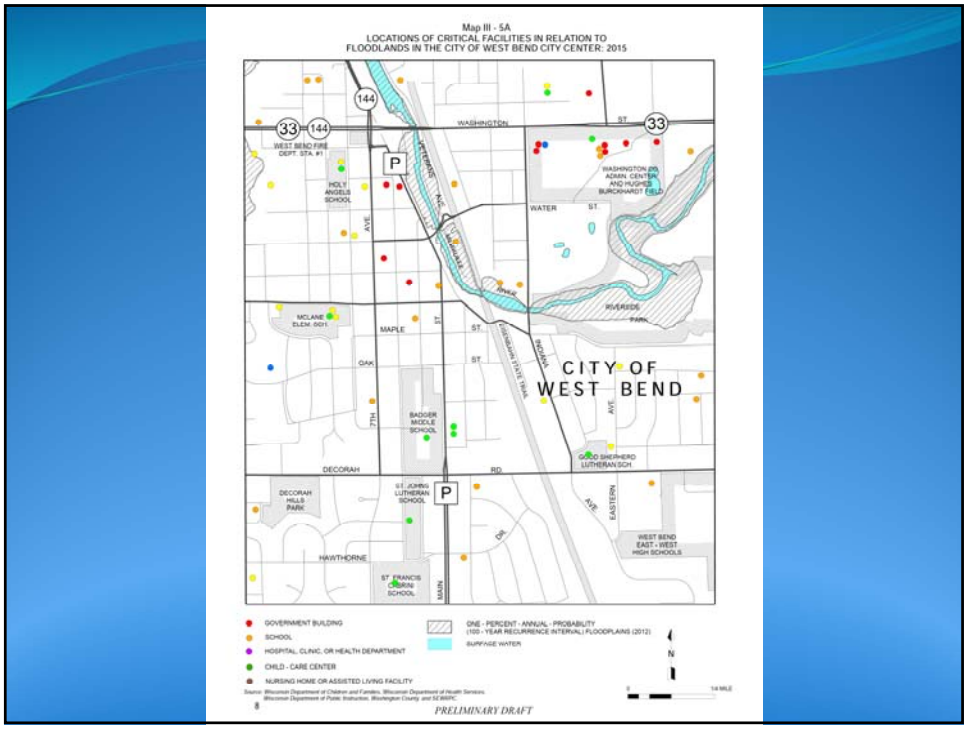

Map III - 5
LOCATIONS OF CRITICAL FACILITIES IN RELATION
TO FLOODLANDS IN WASHINGTON COUNTY: 2015
GOVERNMENT BUILDING
SCHOOL
HOSPITAL, CLINIC, OR HEALTH DEPARTMENT
CHILD - CARE CENTER
NURSING HOME OR ASSISTED LIVING FACILITY
ONE PERCENT ANNUAL PROBABILITY (100 - YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)
SURFACE WATER
PERENNIAL STREAM
INTERMITTENT STREAM
MAJOR WATERSHED BOUNDARY
7
PRELIMINARY DRAFT

EXHIBIT A


Map III - 5A
LOCATIONS OF CRITICAL FACILITIES IN RELATION TO
FLOODLANDS IN THE CITY OF WEST BEND CITY CENTER: 2015
CITY OF
WEST BEND
WASHINGTON ST
WATER ST
MAPLE ST
OAK ST
DECORAH RD
HAWTHORNE DR
RIVERSIDE PARK
BADGER MIDDLE SCHOOL
HOLY ANGELS SCHOOL
MCLANE ELEM. SCH.
ST. JOHN'S LUTHERAN SCHOOL
ST. FRANCIS CHRISTIAN SCHOOL
GOOD SHEPHERD LUTHERAN SCH
WEST BEND EAST - WEST HIGH SCHOOLS
DECORAH HILLS PARK
WEST BEND FIRE DEPT. STA. #1
WASHINGTON (ED) ADMIN. CENTER AND HUGHES BURCKHARDT FIELD
GOVERNMENT BUILDING
SCHOOL
HOSPITAL, CLINIC, OR HEALTH DEPARTMENT
CHILD - CARE CENTER
NURSING HOME OR ASSISTED LIVING FACILITY
ONE - PERCENT - ANNUAL - PROBABILITY
(100 - YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)
SURFACE WATER
PRELIMINARY DRAFT

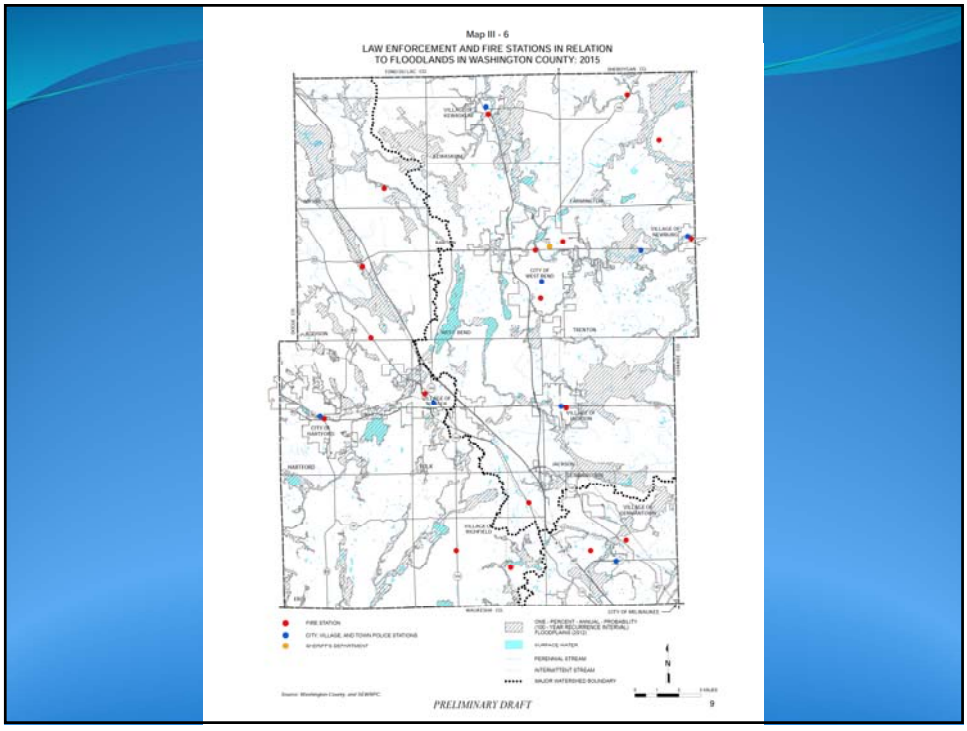
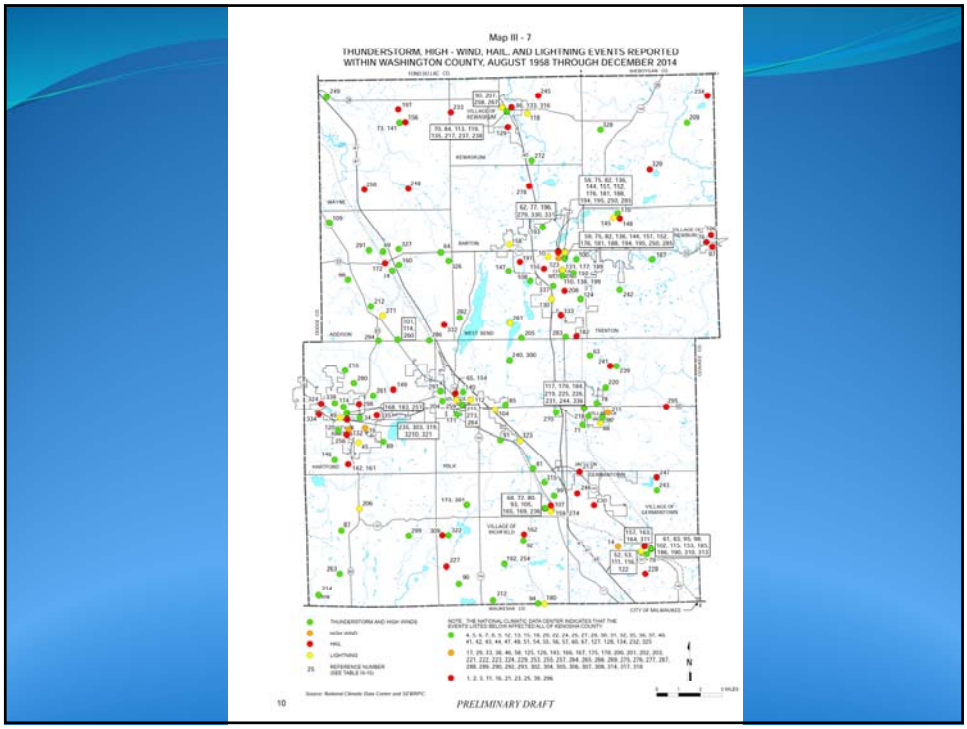

Map III - 6
LAW ENFORCEMENT AND FIRE STATIONS IN RELATION
TO FLOODLANDS IN WASHINGTON COUNTY: 2015
FIRE STATION
CITY, VILLAGE, AND TOWN POLICE STATIONS
SHERIFF'S DEPARTMENT
ONE - PERCENT - ANNUAL - PROBABILITY
(100 - YEAR RECURRENCE INTERVAL)
FLOODPLAINS (2012)
SURFACE WATER
PERENNIAL STREAM
INTERMITTENT STREAM
MAJOR WATERSHED BOUNDARY
PRELIMINARY DRAFT

EXHIBIT A


Map III - 7
THUNDERSTORM, HIGH - WIND, HAIL, AND LIGHTNING EVENTS REPORTED WITHIN WASHINGTON COUNTY, AUGUST 1958 THROUGH DECEMBER 2014
PRELIMINARY DRAFT
10

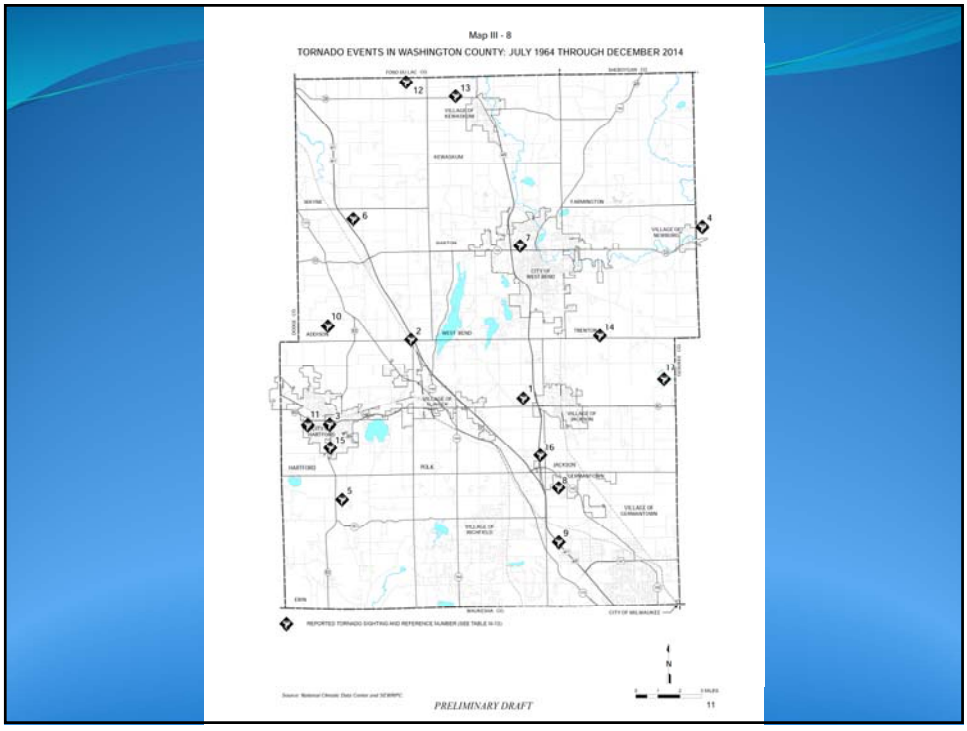
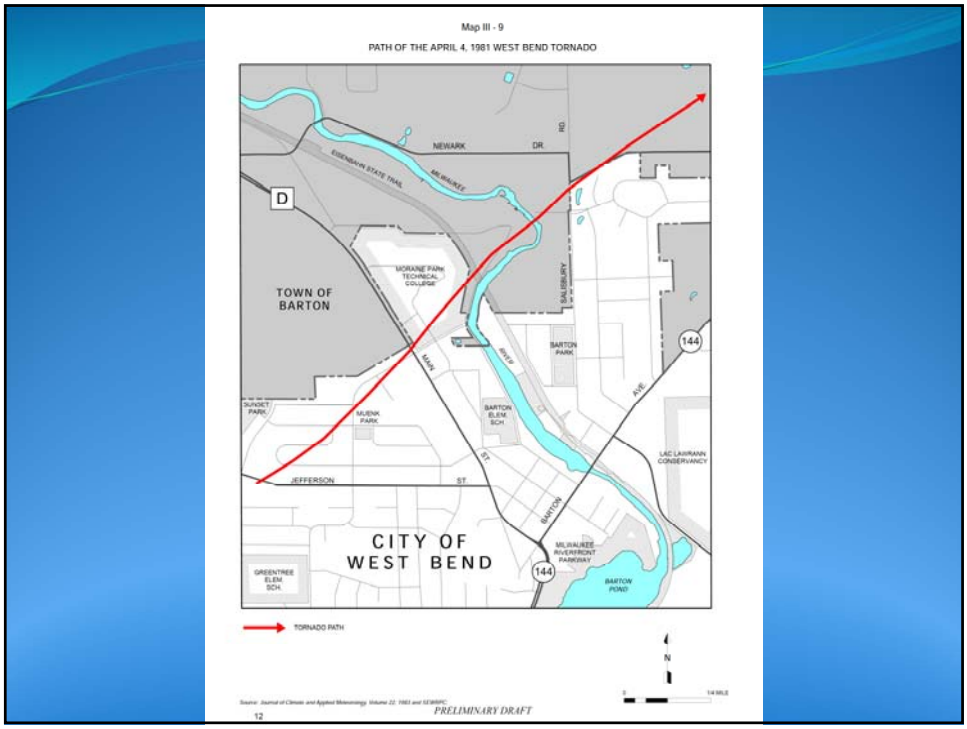

Map III - 8
TORNADO EVENTS IN WASHINGTON COUNTY: JULY 1964 THROUGH DECEMBER 2014
PRELIMINARY DRAFT
11

EXHIBIT A



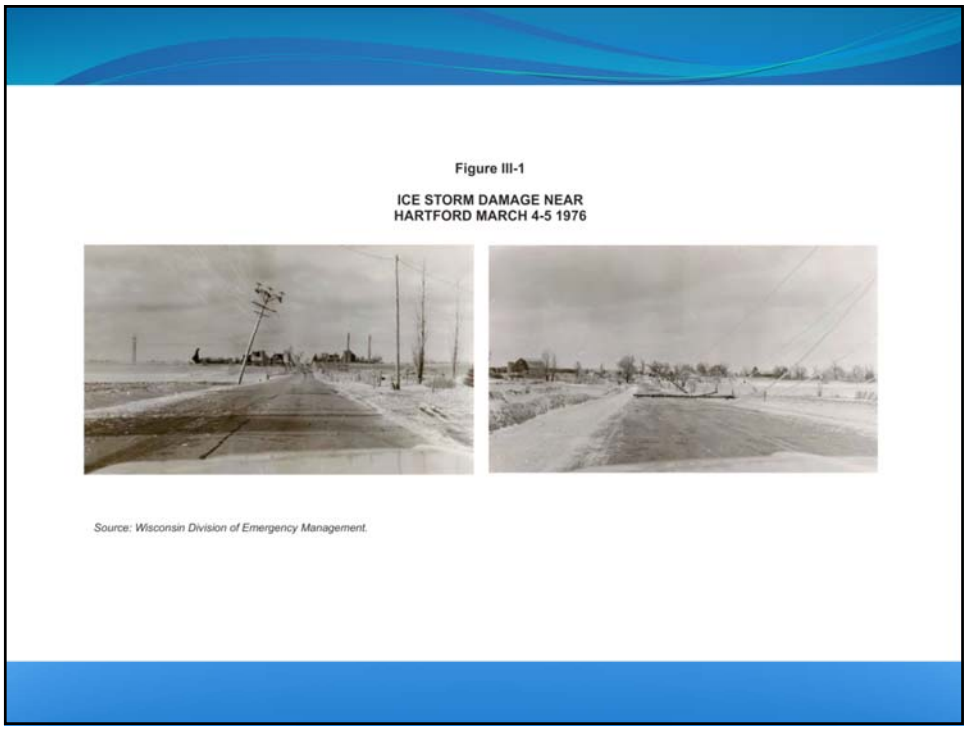
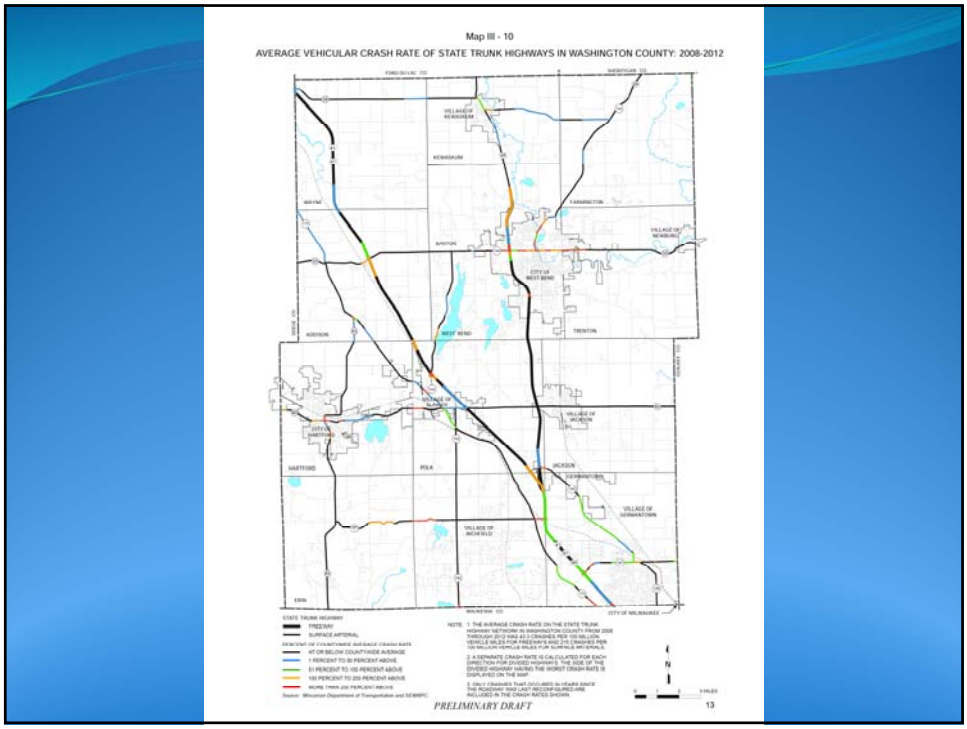


Figure III-1

ICE STORM DAMAGE NEAR HARTFORD MARCH 4-5 1976

Source: Wisconsin Division of Emergency Management.

EXHIBIT A


Map III - 10
AVERAGE VEHICULAR CRASH RATE OF STATE TRUNK HIGHWAYS IN WASHINGTON COUNTY: 2008-2012
PRELIMINARY DRAFT
13

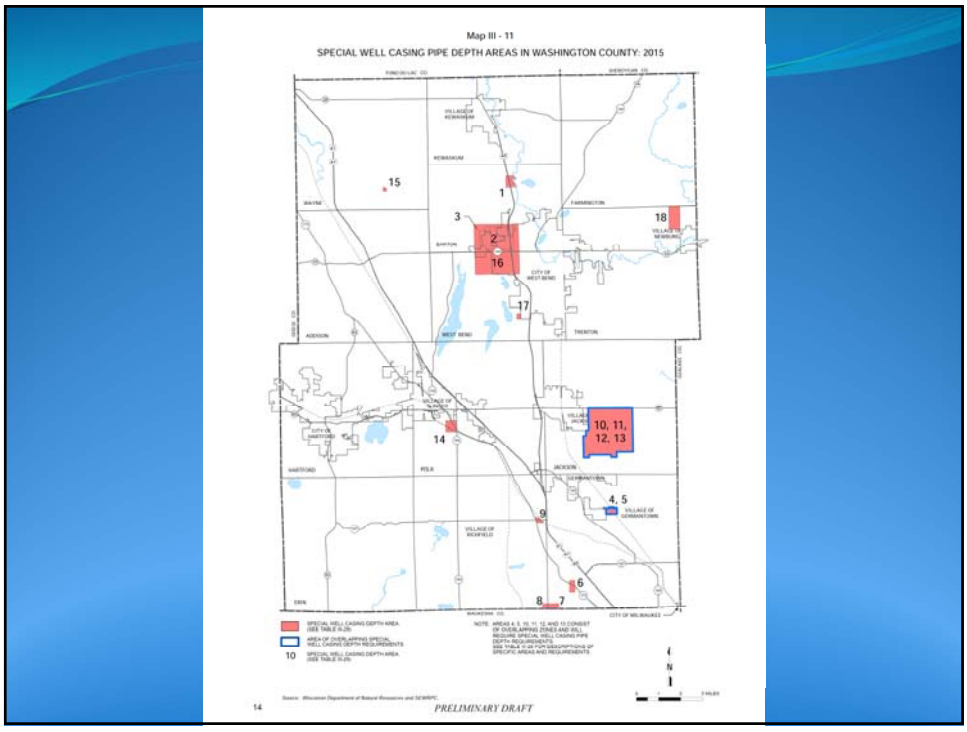
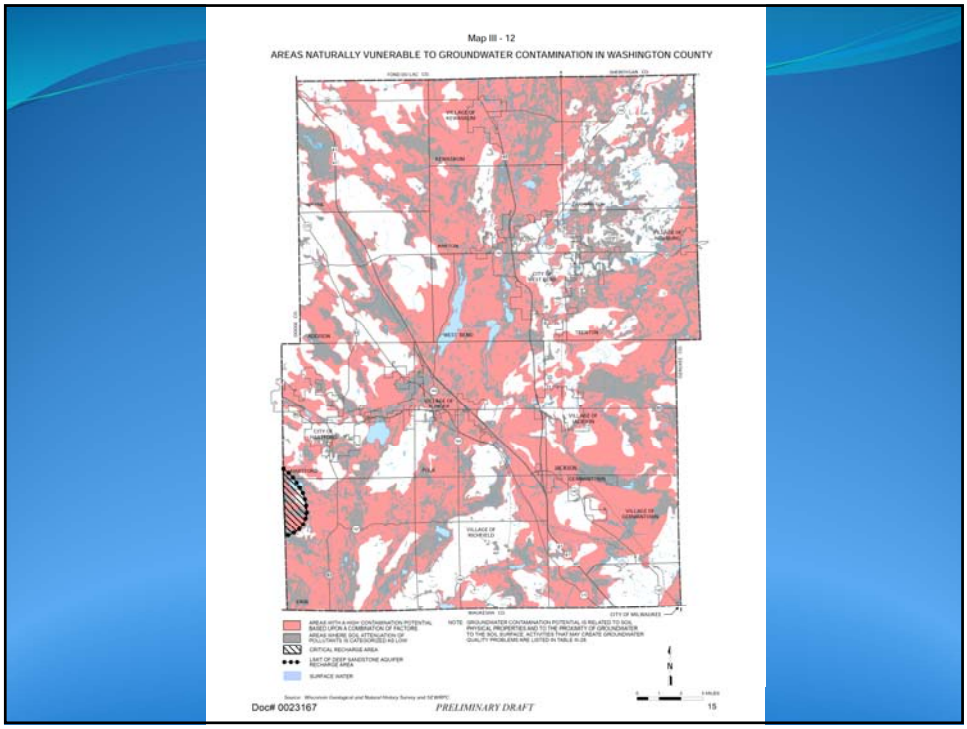

Map III - 11
SPECIAL WELL CASING PIPE DEPTH AREAS IN WASHINGTON COUNTY: 2015
15
1
3
2
16
18
17
14
10, 11, 12, 13
4, 5
9
6
8
7
PRELIMINARY DRAFT
14

EXHIBIT A



Chapter IV

Hazard Mitigation Goals

EXHIBIT A

Hazard Mitigation Goals

1. A spatial distribution of the various land uses that minimizes hazards and dangers to health, welfare, and safety as well as further enhancing the economic base of the County, and will result in a compatible arrangement of land uses properly related to the existing and proposed supporting transportation, utility, public safety, and public facility systems.
2. A spatial distribution of the various land uses that maintains biodiversity and will result in the protection and wise use of the natural resources of the County, including its soils, inland lakes and streams, groundwater, wetlands, woodlands, and natural areas and critical species habitats.

Hazard Mitigation Goals

3. An integrated transportation system that, through its location, capacity, and design, will safely, economically, and effectively serve the existing and proposed land use pattern and promote the implementation of the land use plan, meeting the current and anticipated travel demand and minimizing the potential for accidents and the associated toll on life and property damage.
4. The provision of facilities necessary to maintain a high quality of fire and police protection and emergency medical services throughout the County.

EXHIBIT A

Hazard Mitigation Goals

5. The development of a stormwater and floodplain management system that reduces the exposure of people to drainage- and flooding-related inconvenience and to health and safety hazards and that reduces the exposure of real and personal property to damage through inundation resulting from flooding and inadequate stormwater drainage.
6. The identification and development of programs that complement County and local emergency operations plans to mitigate the potential exposure to health and safety and the exposure of real and personal property resulting from a broad range of hazards that are unpredictable and not geographically specific in nature.

Public Meeting on Hazard Mitigation Plan

- August 10, 2016
  - 6:00 p.m.
  - Public Agency Center, Room 1113A/B
- Review progress on the plan update to date
- Seek public input
  - Problem areas relative to hazards
  - Potential mitigation measures and projects
  - Comments on draft plan

EXHIBIT A

Project Web Site

- http://www.sewrpc.org/SEWRPC/communityassistance/Hazard-Mitigation-Planning.htm
  - Agendas and other meeting materials
  - Summary notes from meetings
  - Presentations
  - Draft chapters as they are completed
  - Comment screen
  - Other ways to send a comment
- Email to jboxhorn@sewrpc.org

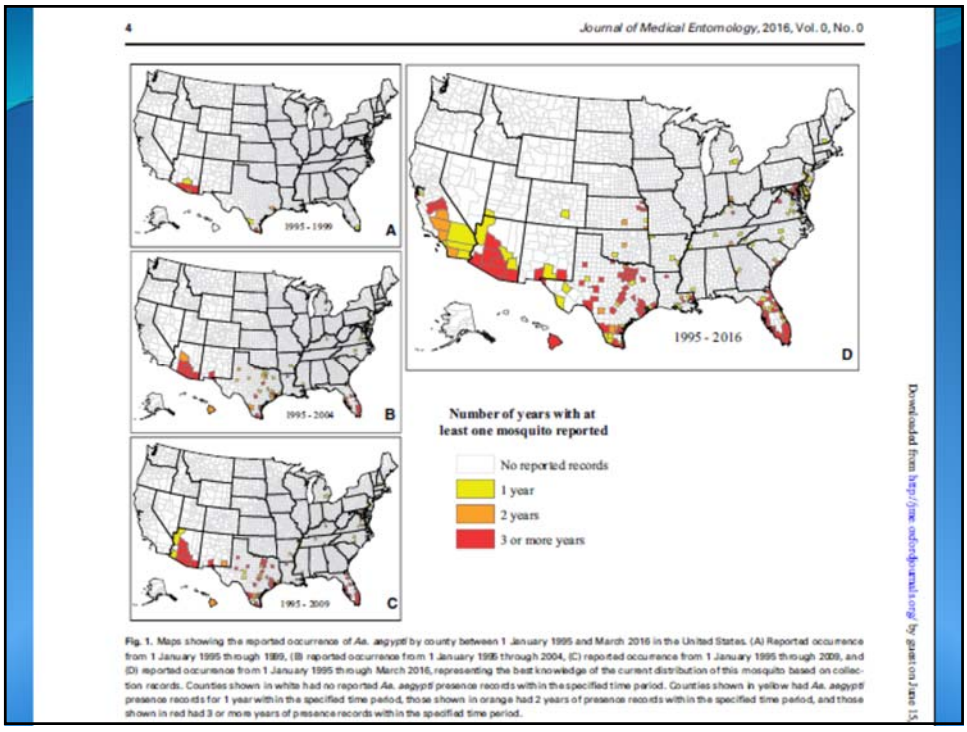


Fig. 1. Maps showing the reported occurrence of *Ae. aegypti* by county between 1 January 1995 and March 2016 in the United States. (A) Reported occurrence from 1 January 1995 through 1999, (B) reported occurrence from 1 January 1995 through 2004, (C) reported occurrence from 1 January 1995 through 2009, and (D) reported occurrence from 1 January 1995 through March 2016, representing the best knowledge of the current distribution of this mosquito based on collection records. Counties shown in white had no reported *Ae. aegypti* presence records within the specified time period. Counties shown in yellow had *Ae. aegypti* presence records for 1 year within the specified time period, those shown in orange had 2 years of presence records within the specified time period, and those shown in red had 3 or more years of presence records within the specified time period.

EXHIBIT A

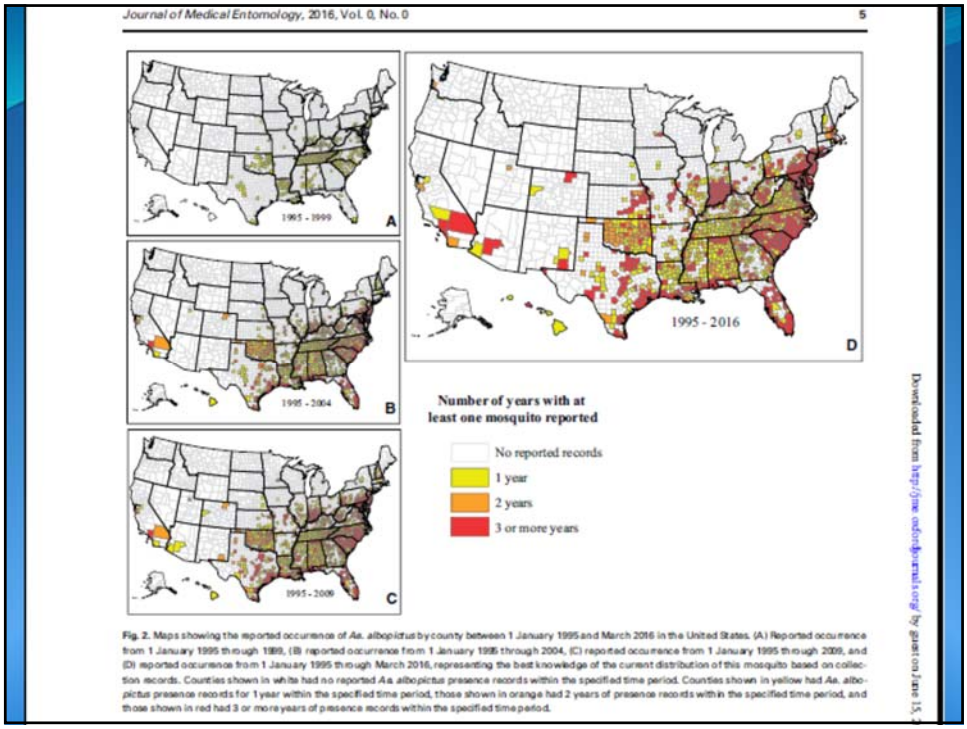
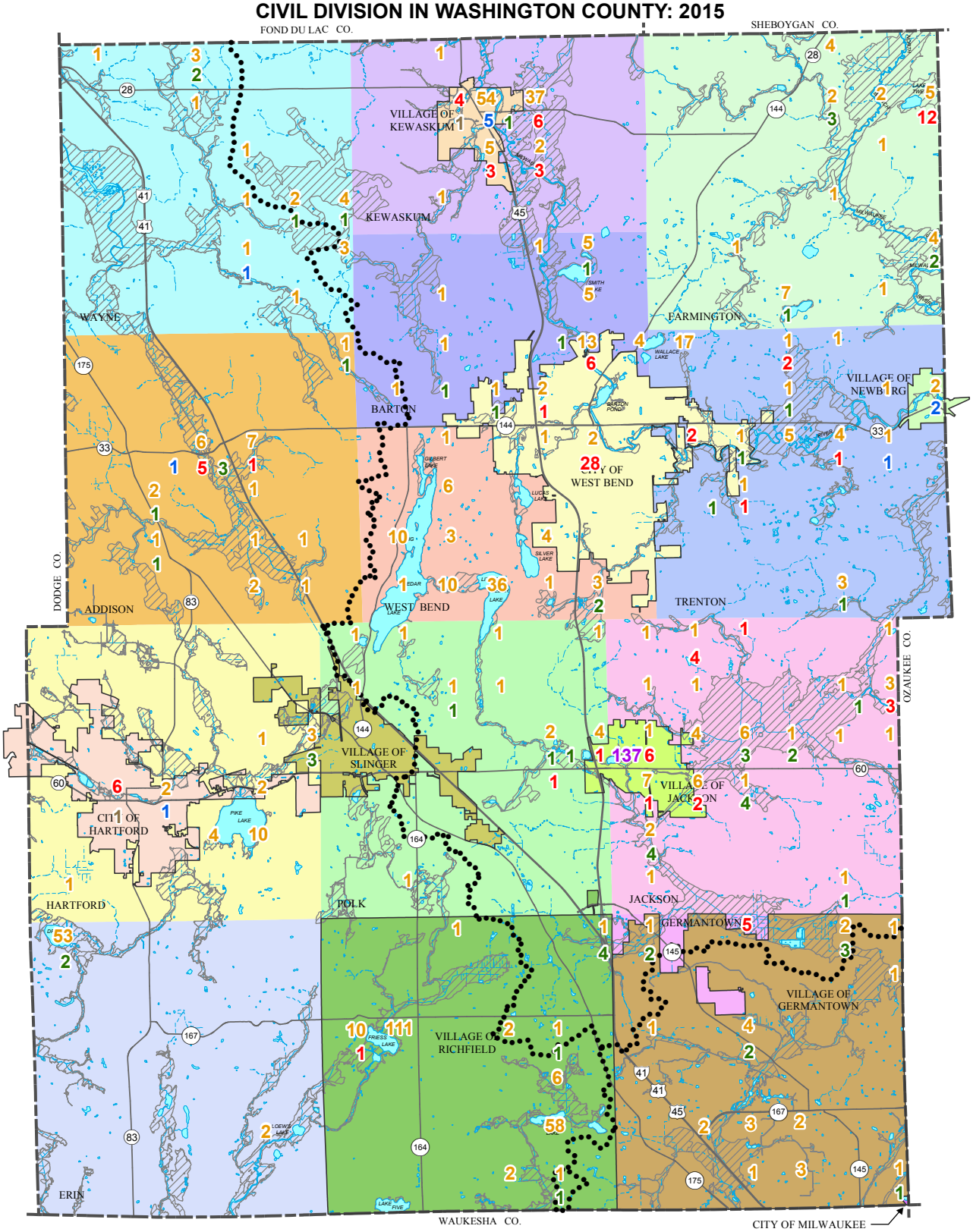


Fig. 2. Maps showing the reported occurrence of *Ae. albopictus* by county between 1 January 1995 and March 2016 in the United States. (A) Reported occurrence from 1 January 1995 through 1999, (B) reported occurrence from 1 January 1995 through 2004, (C) reported occurrence from 1 January 1995 through 2009, and (D) reported occurrence from 1 January 1995 through March 2016, representing the best knowledge of the current distribution of this mosquito based on collection records. Counties shown in white had no reported *Ae. albopictus* presence records within the specified time period. Counties shown in yellow had *Ae. albopictus* presence records for 1 year within the specified time period, those shown in orange had 2 years of presence records within the specified time period, and those shown in red had 3 or more years of presence records within the specified time period.

EXHIBIT B

Map III - 3

NUMBER OF STRUCTURES WITHIN FLOOD HAZARD AREAS BY CIVIL DIVISION IN WASHINGTON COUNTY: 2015



667 RESIDENTIAL STRUCTURES WITHIN U.S. PUBLIC LAND SURVEY SECTION

106 COMMERCIAL STRUCTURES WITHIN SECTION

64 AGRICULTURAL STRUCTURES WITHIN SECTION

137 MOBILE HOMES WITHIN SECTION

11 GOVERNMENT STRUCTURES WITHIN SECTION

2 OTHER STRUCTURES WITHIN SECTION

ONE - PERCENT - ANNUAL - PROBABILITY (100 - YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)

SURFACE WATER

PERENNIAL STREAM

INTERMITTENT STREAM

MAJOR WATERSHED BOUNDARY

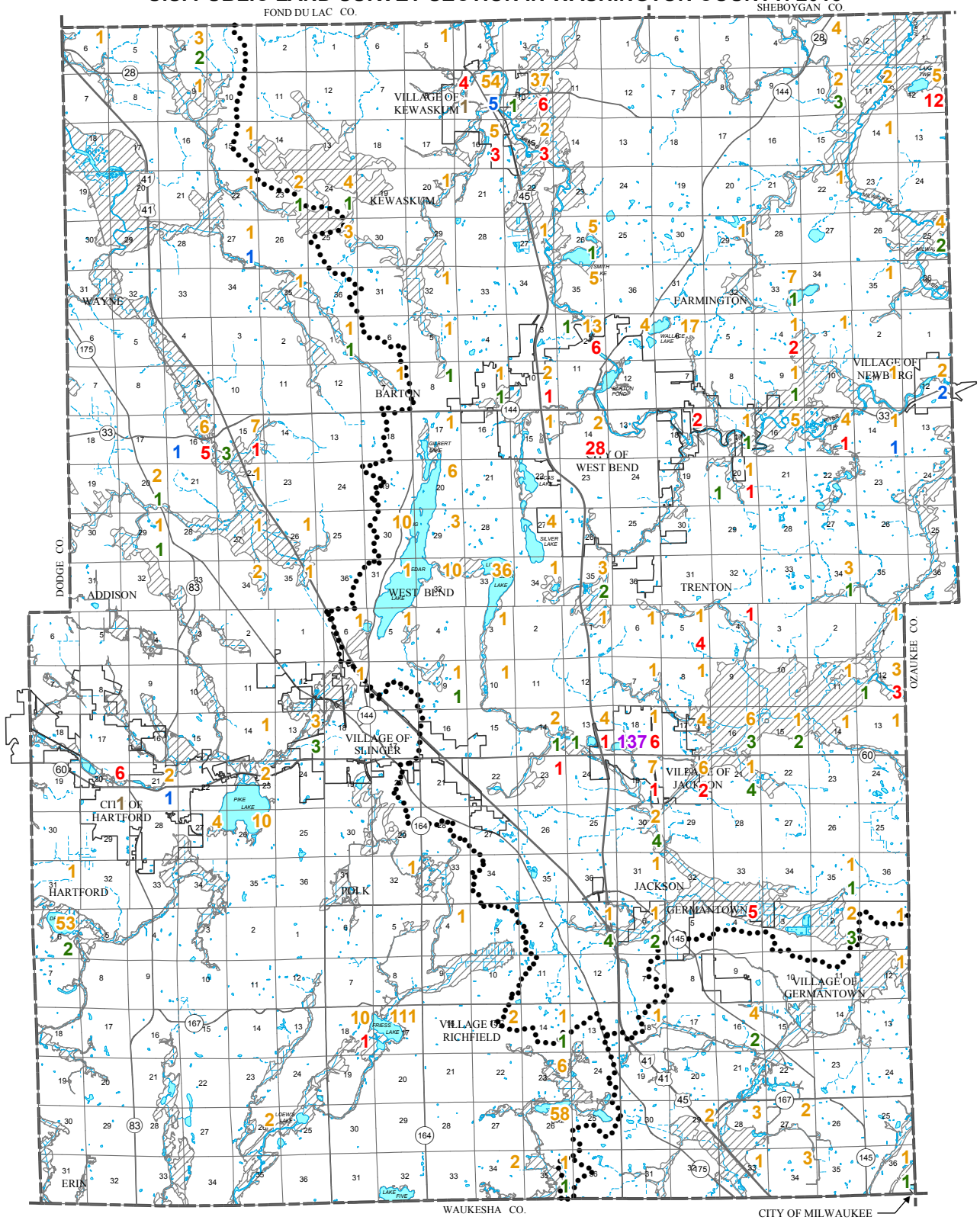
N

0 1 2 3 MILES

Source: Washington County and SEWRPC.

Map III - 4

NUMBER OF STRUCTURES WITHIN FLOOD HAZARD AREAS BY U.S. PUBLIC LAND SURVEY SECTION IN WASHINGTON COUNTY: 2015



667 RESIDENTIAL STRUCTURES WITHIN U.S. PUBLIC LAND SURVEY SECTION

106 COMMERCIAL STRUCTURES WITHIN SECTION

64 AGRICULTURAL STRUCTURES WITHIN SECTION

137 MOBILE HOMES WITHIN SECTION

11 GOVERNMENT STRUCTURES WITHIN SECTION

2 OTHER STRUCTURES WITHIN SECTION

ONE - PERCENT - ANNUAL - PROBABILITY (100 - YEAR RECURRENCE INTERVAL) FLOODPLAINS (2012)

SURFACE WATER

PERENNIAL STREAM

INTERMITTENT STREAM

MAJOR WATERSHED BOUNDARY

N

0 1 2 3 MILES

Source: Washington County and SEWRPC.

Table III-8

PARCEL-BASED STRUCTURE FLOOD DAMAGES FROM A ONE-PERCENT-ANNUAL-PROBABILITY FLOOD EVENT: WASHINGTON COUNTY, WISCONSIN

Annual Probability of Flood Occurrence	Number of Structures in Floodplain	Flood Damages		
		Direct	Indirect	Total
Detailed Studies (Zone AE)	826	$16,308,860	$3,465,590	$19,774,450
Approximate Floodplains (Zone A)	161	2,695,040	484,050	3,157,590
Total	987	$19,003,900	$3,949,640	$22,965,040

Source: SEWRPC.

Table III-9

COMMUNITIES IN WASHINGTON COUNTY WITH SPECIAL FLOOD AND RELATED STORMWATER DRAINAGE CONSIDERATIONS

Community	Reason for Special Consideration
City of Hartford	10 structures estimated to be in flood hazard area
City of West Bend	41 structures estimated to be in flood hazard area
Village of Germantown	27 structures estimated to be in flood hazard area
Village of Jackson	165 structures estimated to be in flood hazard area
Village of Kewaskum	112 structures estimated to be in flood hazard area
Village of Newburg	Four structures estimated to be in flood hazard area
Village of Richfield	200 structures estimated to be in flood hazard area, including three repetitive loss structures that are located in the Village
Town of Addison	36 structures estimated to be in flood hazard area. Substantial agricultural flood damages
Town of Barton	37 structures estimated to be in flood hazard area
Town of Erin	57 structures estimated to be in flood hazard area, including one repetitive loss structure that is located in the Town
Town of Farmington	46 structures estimated to be in flood hazard area
Town of Germantown	Eight structures estimated to be in flood hazard area
Town of Hartford	24 structures estimated to be in flood hazard area
Town of Jackson	47 structures estimated to be in flood hazard area
Town of Kewaskum	11 structures estimated to be in flood hazard area
Town of Polk	17 structures estimated to be in flood hazard area
Town of Trenton	45 structures estimated to be in flood hazard area
Town of Wayne	23 structures estimated to be in flood hazard area
Town of West Bend	77 structures estimated to be in flood hazard area

NOTE: See Maps III-3 and III-4.

Source: SEWRPC.

EXHIBIT C

Joe

I mentioned and/or passed along to Aaron all of my Chapter III edits except for this one:

Please add the following definitions regarding disease outbreaks to the end of the text section at the top of page 110.

- Disease Outbreak – limited area of disease occurrence in a community at a particular time.
- Disease Epidemic – the outbreak and rapid spread of a disease in a community affecting a significant amount of people and/or animals in a relatively short period of time. Epidemics may also be secondary to some other disaster such as flood, tornado or terrorist incident.
- Disease Pandemic – disease is prevalent over an entire region, country or the world.

Feel free to adapt/reword as needed but I feel the terms need to be defined in this section for clarity.

Thanks and have a nice holiday.

P.S. – Those definitions are copied from the Washington Co. Hazard Analysis. Do you have a copy of that document?

I believe I sent it to you but could not confirm that. Please let me know.

Rob Schmid
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