

6.0 APPENDIX B: HAZARD MITIGATION ANNUAL REPORTS

Since the approval of the 2015 Knox County Hazard Mitigation Plan, the planning team participated in annual plan maintenance activities. Each annual event included a review of the identified mitigation strategies and a discussion of hazard occurrences and community development. This section demonstrates the ongoing mitigation discussion that occurred during annual review meetings in 2016, 2017, and 2018.

6.1 2016 Annual Review Summary

Participating Jurisdictions

Centerburg, Gambier, Fredericktown, Knox County, Mount Vernon,

Meeting Summary

The Knox County Emergency Management Agency conducted an annual review of the current Knox County Natural Hazard Mitigation Plan on Tuesday, April 19, 2016 at the Mt. Vernon Community Center. The meeting was organized by EMA Director Mark Maxwell. Facilitators included Sandy Hovest and Lauren Yeagle of Resource Solutions Associates; Dean Ervin, State Mitigation Planner, was a guest speaker. All attendees are evidenced by the attached sign-in sheet. The meeting was called to order at approximately 10:00 am by Mark Maxwell. Twenty-two local attendees were present. (See Attachment A and B)

Mark Maxwell opened with a guest welcome and thank you. He reminded attendees that the meeting was intended to enable jurisdictions to keep the goals and strategies identified in the plan moving forward in an effort to bring forth interest in mitigation projects and actions. He told them that this was the first annual review meeting, and that it would focus on education and awareness of the effectiveness of mitigation and the strategies that had been determined to be potentially effective. Mark then introduced the facilitators and guest speaker.

Sandy Hovest asked the attendees to introduce themselves and their agencies. She reviewed the development of the 2015 Knox County Natural Hazard Mitigation Plan, including how and when it was developed, the criteria that needed to be reviewed, and the plan maintenance section. Sandy's slide presentation is attached to this report for detail. (See Attachment C)

Dean Ervin, State Mitigation Planner, spoke to the group about potential projects, and how a strategy might be developed into a project. He reviewed the process of applying for federal mitigation funding, the requirements of the applications, and the assistance available from the Ohio EMA Mitigation Branch during such work. Mr. Ervin's presentation outlined the federal grant process, including cost-benefit analysis as it varies from the cost-benefit review considered during the development of the current mitigation plan. His slide presentation is attached to this report. (See Attachment D).

Lauren Yeagle presented a session that covered tips and ideas about how to evaluate your progress in implementing a mitigation plan, bridging the information from planning to to doing.

She presented this right after lunch and included a brief review of points made by the previous speakers.

After a short lunch break, the group broke into two discussion groups. One group included Knox County representatives and the other included municipal representatives. The City of Mt. Vernon, and the Villages of Centerburg, Fredericktown, and Gambier were represented. The Villages of Danville, Gann, and Martinsburg were not represented.

Each group was given a work sheet for the mitigation actions in the plan, and they were asked to review each one. They received a comprehensive list of various types of mitigation actions and a table of the current plan actions and strategies taken from the current plan.

Each group was asked to evaluate progress for every action item in the current plan, and then to review the overall information and to outline anything that should be added to the plan when it is revised in 2019. They were given a guide of mitigation types and actions to help them understand the purpose and function of each type project or action.

Hovest and Yeagle facilitated the discussion groups, and Ervin worked with both groups to answer questions and present feedback as needed. Each group selected a member as the group recorder, and one as the group presenter. They evaluated each action according to worksheets which are attached to this report. (See Attachment E)

Attendees considered any significant weather incidents that took place in the past year. The consensus was that there were no significant weather events that had occurred in 2015 or up until April 19 in 2016. Weather and precipitation were categorized as “very mild”, although recognition was given to the NWS prediction that this upcoming summer may be extremely hot and dry

In general, both groups felt that there had been accomplishments that have contributed to achievement of many of the mitigation actions in the plan. Some achievements were small parts of a bigger project. They felt that without the annual review, these same accomplishments would be forgotten or disregarded if the review were to be postponed for several years. This documentation of actual accomplishment also allowed them to break each action into achievable steps, lessening the effect of financial and other practical challenges.

After all potential action items were reviewed, each group presented their group’s findings to the entire audience. Questions and comments were addressed. Mark thanked Mr. Ervin for his participation, and thanked the local attendees for spending the greater part of the day working to make emergency management, specifically mitigation, an important part of their job.

The meeting adjourned at 1:30.

6.2 2017 Annual Review Summary

Participating Jurisdictions

Centerburg, Fredericktown, Knox Community Hospital, Knox County, Mount Vernon, Mount Vernon City Schools, Ohio Department of Natural Resources

Meeting Summary

The Knox County Emergency Management Agency sponsored a countywide disaster mitigation plan update and review on Thursday, April 27 at the Community Center in Mt. Vernon. The core planning team, representing a wide array of interests across the county, were invited to participate in the meeting. (Agenda and sign in sheets are attached to this report.)

County EMA Director Mark Maxwell welcomed participants and spoke of the importance of the county's mitigation plan in preventing storm damage as well as reducing it. Mr. Maxwell introduced Lauren Yeagle and Sandy Hovest of Resource Solutions Associates, the company that prepared the current mitigation plan and assisted with the annual update meeting in 2016 as well as this year.

Ms. Hovest presented a mitigation overview to the group, and showcased several projects in Ohio that have successfully reduced losses for particular businesses. She spoke about elevation techniques used in Findlay at Rosilli's Restaurant, acquisition and relocation used in Ft. Recovery for their fire department and six flood-prone homes; and Shelby's comprehensive flood program that relocated 57 property owners, creates parks and walkways along the Black Fork River, and created several retention basins for flood water.

The Zuck Riparian preserve project conducted by the Knox County Park District was discussed. This project created a scenic river access point and a waterside hiking trail through creation of natural habitat, funded by multiple local and state sources. This project not only contributed to the health of the Kokosing River but also added recreational area to the county's park system. Heather Doherty from the Ohio Department of Natural Resources, one of the meeting participants, was able to speak about the project and answer questions.

The Blackberry Alley Restoration project combined sources of funding to improve water detention and water quality in an area of Mt. Vernon that has difficulty in managing flood water. The project managers are trying to determine how to build a brick roadway as the three-phase project connect the downtown walking trail to the Grand Hotel area. Brian Ball, engineer for the City of Mt. Vernon, was able to provide an overview of the project and its purpose, accomplishments, and challenges. He was able to answer questions about the project.

Ms. Hovest spoke about changes at the state and federal mitigation review points. Luan Nguyen has replaced Dean Ervin in Columbus. Mr. Ervin was a speaker at the meeting last year, and retired in December 2016. Steve Green is the new reviewer at the Region V Chicago office, and is an experienced mitigation planner and reviewer. The federal and state attention to mitigation continues to increase, and statistics still point to a cost of \$1 to mitigate a problem as opposed

to \$4 to repair or replace after a disaster. Hovest urged the group to continue to approach mitigation from a whole-community perspective as has been done the past several years.

Lunch was provided by the Knox County EMA. Participants took a short break before the afternoon session began.

Ms. Hovest reviewed the storm incidents over the past year. Most agreed that the 2016-2017 recent past has yielded mild weather and little storm damage. Incidents over the past year, as recorded by the National Weather Service, include snowfall in northern Ohio on April 8 and 9, 2016 amounting to a measured 2.5 inches in northeast Richland County; rain and thunderstorms on June 4 – 6 but no reports of any damage in Knox County; high wind and thunderstorms near Academia with \$35K of damages on June 15, 2016; record high temperatures with no damages in August 2016; high winds on September 10, 2016 caused \$15K in damages south-southwest of Mt. Vernon; December 18, 2016 brought a record high of 73 in Mansfield; a December 8 – 10, 2016 snowstorm dumped snow on Knox County, but only measured 1.5 inches in Fredericktown; and high winds were measured at 41 knots at the county airport on January 10 and 11, 2017. Other than the earlier-identified damages, no other losses or casualties were noted by the meeting participants.

The attention of the group turned to the Knox County Mitigation Strategy Update form. Participants were directed to split into small groups and review the 10-page list of strategies taken from the Knox County Hazard Mitigation Plan. A copy of that handout with summarized comments is attached to this report. Originals are scanned and maintained by the EMA Director and Resource Solutions.

Mr. Maxwell wrapped the meeting up with a short summary and thanked everyone for attending. He indicated that any questions about mitigation could be submitted to him at the EMA and he would help as needed.

6.3 2018 Annual Review

Participating Jurisdictions

Centerburg, Fredericktown, Kenyon College, Knox County, Mount Vernon, Mount Vernon Nazarene University

Meeting Summary

The Knox County Hazard Mitigation Planning Committee met on May 22, 2018 to review the current hazard mitigation plan that expires in two years. This was the third annual review meeting and twenty local officials were in attendance. Resource Solutions Associates managed the meeting, and EMA Director Maxwell participated as a county official. The attendance sheet is attached.

The meeting opened with Sandy Hovest (RSA) speaking about recent feedback on county mitigation plans. Sandy provided a handout with numerous areas of inclusion that listed dam failure, earthquake, water quality emergency, hazardous materials incidents, invasive species,

infrastructure failure, and wind categorized by derecho, tornado and severe thunderstorms. She identified the following areas as having increased importance in the plan development process:

- Participation by all jurisdictions, including the smallest villages in the county as well as special groups like economic development, natural resources, agriculture, and utilities
- Non-participation must be documented and jurisdictions must provide written evidence that they voluntarily and knowingly opted out of the program
- Vulnerabilities must be clearly and accurately assessed for each jurisdiction and the entire county
- How disaster mitigation is considered and incorporated into community growth activities must be documented by an explanation of exactly how that occurs
- Risk assessment must include all hazards that are reasonably present and those not considered must be explained and specifically excluded; these can include, for Knox County, hurricane, volcano, tsunami, landslide, and wildfire. (Wildfire is not the same as field fire or urban conflagration)

Discussion opened the first activity on risk assessment. Mark explained that he felt the next mitigation plan should be all-hazards, adding technological and human-caused disasters to the plan. Participants broke into two work groups and assessed the probability and magnitude of a comprehensive list of hazards broken into three categories – natural, human-caused, and technological.

Activity #2 involved the same groups in assessing community growth areas. They were asked to list the growth and development, or loss of entities, in several areas. These areas included residential, industrial, retail and service, agriculture, government and institution, and other areas not specified.

Over a working lunch, the groups assessed progress on all county and jurisdiction strategies identified in the 2015 Knox County Natural Hazard Mitigation Plan. They were asked to consider each of about 60 mitigation actions for various areas of the county. Not all areas were represented and some assessments could not be provided. Mark said he would mail meeting handouts to those jurisdictions and ask them to return completed surveys.

After lunch, groups turned in their completed paperwork. Sandy and Mark provided a brief summary and expression of appreciation for participation, and reminded them that handouts were available for anyone who wanted to complete them because they were unable to attend.

The meeting began at 9:00 a.m. and concluded at 12:45 p.m.

6.4 Strategy Progress Report 2016 – 2018

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
KNOX COUNTY				
1. Knox County will accurately and thoroughly identify flood prone areas in the county, including all non-municipal jurisdictions, and identify development practices that allow or facilitate flooding through interference with natural drainage as structures are improved, renovated, and/or built.	Knox County Flood Plain Administrator	01.01.15	12.31.15	General Budget
1.1 Knox County will maintain and update flood maps and adopt or appeal and modify any FEMA revisions during the 5-year plan cycle.		2016: Ongoing		
		2017 Ongoing; Corps model used for mapping by FEMA is outdated; last updated July 2009; need to review flood model and make amendments to maps; observe, monitor and update; review flood module		
		2018: Last update 2009; localized as needed		
1.2 Knox County will develop and enhance the county’s capability and capacity to review new construction and/or substantial modifications to existing buildings to assure that natural drainage and water runoff will not be impeded by development, expansion, and other changes.		2016: Ongoing		
		2017: Regional Planning – ongoing; reviewing storm water now; done through storm water permits; requires significant funding that is not available; Knox County does have a runoff mitigation plan		
		2018: Ongoing; County has storm water mgt. plan in place; Mt.V. and Centerburg signed off		
1.3 Knox County will collaborate with jurisdictional officials (cities, villages, and townships) to establish regulations and construction standards where they could be beneficial in managing construction in floodplains or areas at high risk for flooding.		2016: Ongoing		
		2017: Regional Planning – ongoing; cumulative impacts; requirements needed for property owner over 1 acre per the City of Mt. Vernon for water runoff		
		2018: Ongoing; Being done; all municipalities have FPM		
1.4 Knox County will work with officials in jurisdictions where regulations do not exist to educate and advocate the value of land use planning as a tool to prevent the consequences of construction within flood plains and high-risk properties.		2016: Ongoing		
		2017: Ongoing; steps to move toward zoning in 4 townships		
		2018: Ongoing; Working with Danville and Gambier		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
2. Knox County will develop and complete structural projects to mitigate against flooding in areas where repetitive loss has occurred or where structures and development have been built on high-risk properties, including acquisition and demolition when appropriate and effective.	Knox County Engineer	01.01.16	12.31.19	General Budget PDM Special Grants
2.1 Knox County will facilitate and coordinate natural stream improvement projects with conservation groups and agencies to facilitate natural drainage on public property.		2016: Ongoing 2017: n/a; ODNR Scenic Rivers putting together Kokosing State Scenic River council to include various local partners (see notes); engineer checks and replaces culver with high water issues to reduce the problem; who owns Rt. 229 dike wash-out? KCSWCD and Corps of Engineers 2018: Ongoing; Has been met		
2.2 Knox County will conduct projects to elevate sections of county roads and bridges that flood on a regular basis and become blocked to raise them above frequent floodwater levels and protect them against wear and tear due to floodwater flow.		2016: Ongoing 2017: Ongoing; Mt. Vernon Avenue; Beaver and Beckley Roads both raised by engineer; replaced several culverts and bridges with appropriate openings; county engineer with township trustees ongoing; bridge and culvert replacement program in place 2018: Yes, bridges as replaced; roads – no; Has been met		
2.3 Knox County will coordinate with the various watershed and conservation groups to initiate embankment clearing to eliminate impediments to natural drainage so that waterways drain at maximum capacity during high precipitation or floods.		2016: Ongoing 2017: Continue to coordinate with ODNR and the engineer; ODNR, county, MWCD 2018: No; Has been met; ongoing continuous issue		
2.4 Knox County will construct retention ponds and waterway diversions where heavy rain and runoff accumulates and causes flooding to existing residential and commercial properties.		2016: Ongoing 2017: Annual inspection by engineer and Soil Conservation; county ditches exist 2018: Park District?; On any new developments		
2.5 Knox County will acquire, demolish, and return residential property to natural habitat where repeated flood losses are incurred.		2016: Ongoing 2017: None identified but ongoing monitor; not during this plan cycle 2018: Land Bank? None currently; Not had any issues		
2.6 Knox County will work with economic development groups to		2016: Ongoing		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
create retention ponds and/or waterway diversion as a condition of approval where new construction would cause or be vulnerable to frequent flooding.		2017: Ongoing; ODNR River Mt. Vernon Plan; storm water utility plan approval; in current plan; storm water regulations		2018: Ongoing; Doing this
2.7 Knox County will identify ways to construct new water management tools such as berms and floodwalls in the place of dikes that were built 50 years ago and are at risk of failure and may be vulnerable to breach today.		2016: Ongoing	2017: City engineer continues to work with ODNR for solutions; concern expressed about taking responsibility for dikes; working with Corp of Engineers and city	2018: Corp doing a full inspection of levee; pare of non-federal levee pilot project; Mt. V. levees have been identified
2.8 Knox County will work with ODNR to support their program that will assess and identify risks and needed improvements for privately held dams across the county for the purpose of advocating for adequate maintenance of the dams to prevent flooding caused by dam failure, either during storms or at any other time. 2.8.1 Knox County will work with private dam owners to keep information up to date about the dam and its condition as it relates to flood risk.		2016: Ongoing	2017: Ongoing ODNR and SWCD working with owners; Robbins Lake? ODNR working with owners, good relationship	2018: Ongoing; Held dam workshop 25 persons attended; have not taken pro-active stance with this; could push more info out routinely
2.9 Knox County will improve and maintain the dikes in all areas of the county.		2016: Ongoing	2017: Continue to maintain and improve; concern expresses over maintenance; being maintained; there is no budget for improvement; need an EPA compliant watershed plan to facilitate easy flow in Kokosing and considers dead trees and debris in the way now	2018: Ongoing
3. Knox County will conduct public information campaigns to improve and expand property owners' participation in voluntary facilitation of adequate and effective drainage through maintenance of individual and private property.	Knox County Soil and Water Conservation District	01.01.15	12.31.19	General Budget
3.1 Knox County will educate private and individual landowners about the need for and benefits of adequate property maintenance to ditches and streams on their property with the intent that they then remove fallen trees, debris, and excessive sediment from streams on their property to prevent flooding.		2016: Ongoing	2017: Newsletter public in news by SWCD to communicate; ongoing; county efforts with KC SWCD	2018: Soil & Water?; Continually doing this
3.2 Knox County will work to identify and develop working		2016: Ongoing		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
relationships with conservancy and watershed interest groups and organizations to facilitate joint projects and collaboration with emergency management.		2017: Ongoing		
		2018: Working on Muskingum watershed; "cover crop" ongoing		
4. Knox County will collaborate with economic development leaders to ensure that new construction and commercial development includes conservation and mitigation practices to prevent flooding.	Knox Regional Planning	01.01.15	12.31.19	General Budget
4.1 Knox County will work to include the purchase of set-aside property and retention pond construction in new development where flooding may be lessened by doing so. (Clarify statement in plan revision)		2016: Ongoing		
		2017: Ongoing; part of subdivision regulations		
		2018: Ongoing; Have done this		
4.2 Knox County will work to educate economic development groups and agencies about the need for flood mitigation and watershed conservation measures.		2016: Ongoing		
		2017: Ongoing		
		2018: Ongoing; Doing this on continual basis with area development		
5. Knox County will maintain and support county-wide communications capabilities to notify and warn county residents of dangers and natural hazards through public warning and mass notification systems that are compatible and functional in concert with new technology such as text messages, electronic mail, social media, and other means to convey information in a timely fashion.	Knox County EMA	01.01.15	12.31.16	General Budget Special Funding HSGP/EMPG
5.1 Knox County will develop a partnership between Emergency Management, 9-1-1 services, and 2-1-1 services to effectively and quickly distribute information and provide connection to services for residents across the county.		2016: Ongoing		
		2017: WENS system added; Knox Co. JIC		
		2018: Ongoing; Completed		
5.2 Knox County will develop and implement methods to communicate with all populations and communities in the county during disasters, taking into account lifestyles and habits of special populations of residents within the county.		2016: Ongoing		
		2017: Ongoing; update county's warning and public information annexes; ARES; WENS addition; MARCS upgrade; 211 partnership; social media		
		2018: Ongoing; Looking to start doing this more (Fire dept. develop more and ARC)		
5.3 Knox County will maintain and support the outdoor warning sirens in the county for the purpose of providing emergency warnings to people working and spending time outside when inclement weather and dangerous conditions exist with special emphasis upon areas where populations work out-of-doors on a daily basis, as funding is available.		2016: Ongoing		
		2017: Tested bi-weekly; notifies villages; ongoing; ARES plan to monitor siren		
		2018: Ongoing; Continuously maintain and update		
5.4 Knox County will maintain a registry of functional needs		2016: Ongoing		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
populations for the purpose of being able to better serve them during disasters, and to mitigate the long term health effects they may endure because of a lack of timely assistance during a disaster, and continue to promote participation in this registry for the benefit of all.		2017: Ongoing Knox Alerts; EMA Maintains a list; EMA updates equipment lists; functional needs update in Knox Alerts in 2016; KCHD working with agencies to identify special needs populations		
		2018: Ongoing; Fire departments are working to update continuously		
5.5 Knox County will complete updates to the first response early warning and notification system that supports responder readiness and situational awareness during disaster and emergency incidents.		2016: Ongoing		
		2017: Implemented iPaws; MARCCS system utilized		
		2018: IPAWS; Ongoing with agencies listed; updating aps		
6. Knox County will conduct a public awareness campaign that includes information about warning and mass notification methods, evacuation and other protective measures, and response to emergencies and disasters.	Knox County EMA	01.01.15	12.31.19	General Budget EMPG
6.1 Knox County will include in the public information campaign relevant information about the hazard assessment and disaster storm risk analysis for all of Knox County, identifying those types of hazards that are reasonably present in Knox County.		2016: Ongoing		
		2017: ongoing		
		2018: Ongoing; Ongoing info campaign utilizing all tools available		
6.2 Knox County will include information about the public warning and mass notification systems in Knox County in the campaign to inform residents about the purpose of each system and how to identify additional emergency information, as it is needed.		2016: Ongoing		
		2017: Ongoing; WENS information distributed at public events		
		2018: Ongoing; Ongoing		
6.3 Knox County will include information in the public information campaign about how and where to find shelter locations and how to access timely evacuation information when evacuation is ordered, including but not limited to where a shelter has been established, how to get there, and how to safely travel to the shelter.		2016: Ongoing		
		2017: Updated Public Information annex; Red Cross; ongoing; in county EOP		
		2018: Ongoing; Utilize the ARC Shelter app that provides this info		
7. Knox County will conduct a public information campaign to educate the general public about evacuation and shelter locations, safe rooms and storm shelters, community centers, and respite and gathering locations during disasters and emergencies.	Knox County EMA	01.01.15	12.31.16	General Budget Private (ARC) EMPG
		2016: Ongoing		
		2017: No update		
2018: Ongoing; Ongoing during different disaster seasons				
8. Knox County will complete improvements to the county addressing system and mapping capabilities to enhance and improve first responders' ability to rapidly identify and locate specific properties during emergencies.	Knox County Auditor	01.01.16 Ongoing	12.31.19	General Budget

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
8.1 Update the county GIS and mapping capabilities to improve numbering consistencies and logical sequencing of addresses.		2016: Ongoing		
		2017: Ongoing; contacted and worked with mobile home parks and improved technology; been improved and ongoing; Updates in 2017		
		2018: Ongoing; Updating as needed		
9. Knox County will establish a shelter and comfort station system that meets the need for a variety of disasters in local jurisdictions including townships, villages, and cities so the centers are readily available to residents during emergencies without significant dangerous travel.	Knox County EMA	01.01.15 Ongoing	12.31.16	General Budget Private Funding
9.1 Knox County will identify locations for and construct safe rooms or storm shelters in areas without adequate shelter such as mobile home parks, multi-family housing communities, and gathering facilities.		2016: Ongoing		
		2017: Promoted safe room grant; identified but not publicized		
		2018: No		
9.2 Knox County will establish and communicate locations of temporary storm shelters and safe gathering places where residents and workers can go during and after storms to obtain critical information, recovery information, and to find services they need in the course of returning to normalcy.		2016: Ongoing		
		2017: List updated in 2016; updated data in EOC and hazardous materials analysis; Red Cross has established		
		2018: No update		
9.3 Knox County will establish and implement shelters and gathering locations for special and functional needs populations for use during storms, power outages, and other times when their unique needs are difficult to maintain in personal homes.		2016: Ongoing		
		2017: ARC has established		
		2018: All congregate shelters have been identified to support access and functional needs		
9.4 Knox County will identify alternate power source needs for residential locations that experience extended power outages during storms, and identify funding sources to install alternate power sources at those locations.		2016: Ongoing		
		2017: Included in plan		
		2018: No update		
9.5 Knox County will acquire alternate power sources for all critical facilities in the county, including overnight shelters, community gathering locations, fire and police stations, healthcare facilities, and other locations where large numbers of residents may congregate during disasters.		2016: Ongoing		
		2017: Included in plan		
		2018: Addressed in functional disaster annexes		
9.6 Knox County will create a plan to ensure fuel is provided to alternate power sources during disasters.		2016: Ongoing		
		2017: Included in plan		
		2018: Addressed in functional annexes		
10. Knox County will establish a debris management plan that facilitates rapid recovery from severe storms, and facilitates the restoration of utilities as quickly as possible to improve recovery of the community after such an incident.	Knox County EMA	01.01.16	12.31.16	General Budget
10.1 Knox County will identify local resources to complete rapid debris		2016: Ongoing		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
removal after a severe storm.		2017: Currently working on debris management plan		
		2018: Has been met		
10.2 Knox County will identify disposal sites to receive debris after a severe storm, and obtain EPA pre-approval as feasible for the sites.		2016: Ongoing		
		2017: Currently working on plan		
		2018: Has been met		
10.3 Knox County will establish contact with and cooperation from the utility companies, as a debris management plan is developed to rapidly remove storm debris after incidents.		2016: Ongoing		
		2017: Currently working on plan		
		2018: Has been met in county plan		
11. Knox County will conduct a public awareness campaign that conveys the critical points of a drought and the need for regular water conservation in preparation for times of severe drought. Section needs to be addressed; some fire dept. work to install dry hydrants and working to identify new areas	Knox County Soil and Water Conservation District	01.01.15	12.31.19	General Budget
11.1 Knox County will educate the public about the need for ongoing water conservation.		2016: Ongoing		
		2017: Ongoing; CERT training		
		2018: No update		
11.2 Knox County will educate the public about the consequences of severe drought.		2016: Ongoing		
		2017: Ongoing; CERT training		
		2018: No update		
11.3 Knox County will educate the public about the needs of agriculture during a severe drought.		2016: Ongoing		
		2017: Ongoing; CERT training		
		2018: No update		
11.4 Knox County will educate the public about fire prevention needs during a drought.		2016: Ongoing		
		2017: Ongoing; CERT training		
11.4.1 Knox County will educate the public about fire prevention and property protection from fire.		2018: No update		
11.4.2 Knox County will educate the public about the benefits of dry hydrants in farm and rural ponds as it relates to fire protection.				
11.5 Knox County will work with the Farm Service Agency (FSA) to facilitate and support the installation of ponds with dry hydrants in rural areas to be used for alternate water supply, firefighting water supply, or other critical water needs, and work with the USDA Natural Resources Conservation Service Environmental quality Incentives Program to achieve this.		2016: Ongoing		
		2017: Ongoing		
		2018: No update		
11.6 Knox County will facilitate improvements to the countywide water supply infrastructure so that a greater percentage of county residents can benefit from a public water system.		2016: Ongoing		
		2017: Ongoing; Bladensburg-Millwood		
		2018: No update		
11.7 Knox County will establish redundancy to the water supply across the county, to be used during times of disaster or when the primary system is not available or in working order.		2016: Ongoing		
		2017: Ongoing		
		2018: No update		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
12. Knox County will improve the dependability of utilities through establishment of resilient utility lines and delivery systems that withstand the stress of severe storms and disasters.	Knox County Engineer	01.01.15	12.31.19	General Budget Private Funding
12.1 Knox County will establish underground utility delivery in new residential and commercial neighborhoods.		2016: Ongoing		
		2017: Ongoing with private utilities		
		2018: No update		
12.2 Knox County will support and advocate for improvements to the power grids both inside and outside Knox County with the purpose of making utility service more dependable and resilient.		2016: Ongoing		
		2017: Working with AEP upgrading lines in entire county		
		2018: No update		
12.3 Knox County will establish redundancy in suppliers of natural gas and other fuels with the purpose of resiliency during disasters and times of supply shortages.		2016: Ongoing		
		2017: Not addressed at this time; unknown		
		2018: No update		
CENTERBURG				
1. The Village of Centerburg will develop projects to lessen the damages to property from flooding, including consideration of acquisition and demolition.	Village Administrator	01.01.15	12.31.19	General Budget Special Funding PDM
1.1 Centerburg will consider acquisition and demolition projects to remove repetitive loss structures and prevent further losses.		2016: No update		
		2017: Not addressed yet; considering; in progress working with property owners;		
		2018: No update		
1.2 Centerburg will consider the construction of retention ponds to hold runoff waters during periods of heavy precipitation.		2016: No update		
		2017: Storm water Utility activity; not done		
		2018: No update		
1.3 Centerburg will improve storm sewer systems to more adequately manage runoff water for all areas and thus prevent/lessen flooding in residential and/or commercial properties.		2016: No update		
		2017: Creating storm water utility with funding questions; not done; in progress		
		2018: No update		
1.4 Centerburg will identify and develop elevation options for roadways, streets, and other infrastructure that is negatively affected by flooding on a regular basis.		2016: No update		
		2017: Not done		
		2018: No update		
1.5 Centerburg will maintain, repair, and/or replace dams, dikes, and reservoirs that hold or contain waters that otherwise may flood home and other properties.		2016: No update		
		2017: n/a <i>consider deferral or deletion?</i>		
		2018: No update		
2. The Village of Centerburg will educate the community about the notification systems that warn residents of impending disasters and the actions they should take immediately to protect themselves and their property.	Village Administrator	01.01.15	12.31.16	General Budget
2.1 Centerburg will investigate and identify communication tools such		2016: No update		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
as text messages, phone call systems, and others, perhaps as part of a countywide system, to effectively notify the community of impending danger and/or inclement weather risks.		2017: Using Knox Alert System; advertised on website and on water bills; WENS		
		2018: No update		
2.2 Centerburg will improve communication systems between first responders and other critical resources in the event of an emergency or disaster.		2016: No update		
		2017: Coordinating with County and Fire Dept.; updating systems		
		2018: No update		
2.3 Centerburg will develop partnerships with Knox County Emergency Management and other agencies to develop information dissemination capabilities that might include 2-1-1 and other community agencies, and would enhance the community's ability to communicate with all populations, including those with functional and special needs.		2016: No update		
		2017: Working on it; ongoing		
		2018: No update		
2.4 Centerburg will work to effectively identify and communicate with special populations within the jurisdiction as it relates to disasters, warning and notification, and response.		2016: No update		
		2017: Not addressed; still valid		
		2018: No update		
2.5 Centerburg will educate the community about evacuation procedures and how to identify shelter locations, comfort stations, and service centers during disasters.		2016: No update		
		2017: Work through Red Cross; needs to be addressed		
		2018: No update		
2.6 Centerburg will work to expand and/or maintain the outdoor warning siren system in the community to harden and improve warning and notification capabilities.		2016: No update		
		2017: Addressed and tested at this point		
		2018: No update		
3. The Village of Centerburg will establish sites to be used as shelters, comfort stations, and service centers during disasters and will strive to equip these sites with the features necessary to adequately serve the community during storms, power outages, and other disasters.	Village Administrator	01.01.15	12.31.16	General Budget
		2016: No update		
		2017: Work with Red Cross; should be done		
		2018: No update		
4. The Village of Centerburg will identify and implement a water supply plan for emergency purposes that supports, supplements, or services in place of a municipal or county water supply in cases of later fires.	Village Administrator	01.01.15	12.31.15	General Budget
4.1 Centerburg will advocate and support the construction of ponds with the capacity of being used as an alternate water supply, and that are equipped with dry hydrants.		2016: No update		
		2017: Contingency plan with Delco Water; in process of evaluation of water system		
		2018: Same as 2017		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
DANVILLE				
1. The Village of Danville will educate the community about notification systems that warn residents of impending disasters and the actions they should take immediately to protect themselves and their property.	Village Administrator	01.01.15	12.31.16	General Budget
1.1 Danville will investigate and identify communication tools such as text messages, phone call systems, and others, perhaps as part of a countywide system, to effectively notify the community of impending danger and/or inclement weather risks.		2016: No update		
		2017: No update		
		2018: No update		
1.2 Danville will improve communication systems between first responders and other critical resources in the event of an emergency or disaster.		2016: No update		
		2017: No update		
		2018: No update		
1.3 Danville will develop partnerships with Knox County Emergency Management and other agencies to develop information dissemination capabilities that might include 2-1-1 and other community agencies, and would enhance the community's ability to communicate with all populations, including those with functional and special needs.		2016: No update		
		2017: No update		
		2018: No update		
1.4 Danville will work to effectively identify and communicate with special populations within the jurisdiction as it relates to disasters, warning and notification, and response.		2016: No update		
		2017: No update		
		2018: No update		
1.5 Danville will educate the community about evacuation procedures and how to identify shelter locations, comfort stations, and service centers during disasters.		2016: No update		
		2017: No update		
		2018: No update		
1.6 Danville will expand and/or maintain the outdoor warning siren system in the community to harden and improve warning and notification capabilities.		2016: No update		
		2017: No update		
		2018: No update		
2. The Village of Danville will educate property owners about and advocate for good regular maintenance practices that result in preventing excessive damages to structures during storms, such as ditch bank maintenance, trimming trees, and clearing excessive vegetation from streams, waterways, and embankments.	Village Administrator	01.01.15	12.31.16	General Budget
		2016: No update		
		2017: No update		
		2018: No update		
3. The Village of Danville will develop projects to lessen damages to property from flooding, including acquisition and demolition.	Village Administrator	01.01.15	12.31.19	General Budget Special Funding PDM
		2016: No update		
		2017: No update		
		2018: No update		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
FREDERICKTOWN				
1. The Village of Fredericktown will identify locations and develop plans for community gathering locations throughout the village to provide residents with shelter, information, and services during weather related events.	Village Administrator	01.01.15	12.31.15	General Budget Private Funding
1.1 Locations considered might include the Main building, Presbyterian Church; Old High School; and the police station and area behind building for future buildings.		2016: Ongoing		
		2017: MOU's with churches, schools for disasters		
		2018: Coordinated through police, fire, ems		
2. The Village of Fredericktown will prohibit construction of new homes inside flood zones.	Village Administrator	01.01.15	12.31.15	General Budget
2.1 Areas such as the old football field will not be used for residential development, and will be maintained as open, natural space.		2016: Ongoing		
		2017: No update		
		2018: Yes		
3. The Village of Fredericktown will identify and develop a redundant water system connection.	Village Administrator	01.15.15	12.31.16	General Budget Private Funding Special Funding
3.1 Delco may provide a feasible redundant connection as alternate system, and will be investigated along with other reasonable alternatives.		2016: Ongoing		
		2017: No update		
		2018: Have been working with FT Precision and AEP for access to easement across property; so far, unsuccessful		
4. The Village of Fredericktown will develop a long-range plan for storm sewer protection and maintenance.	Village Administrator	01.01.15	12.31.17	General Budget
		2016: Ongoing		
		2017: No update		
		2018: Plan on implementing a storm water utility in 2019; currently separating storm water and sanitary sewer through an eleven-phase project 6/11 complete		
5. The Village of Fredericktown will strive to maintain and improve aged and low volume water supply lines for reasons of public health and fire protection.	Village Administrator	01.01.15	12.31.18	General Budget Special Funding
		2016: Ongoing		
		2017: No update		
		2018: Incomplete		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
6. The Village of Fredericktown will develop and strive to implement a street repair and maintenance plan to maintain proper storm water flow and to minimize roadway erosion damage due to storms.	Village Administrator	01.01.15	12.31.19	General Budget Special Funding
6.1 The village will strive to maintain and improve curbing, paving, and catch basins to better handle storm runoff and to prevent flooding of residential and commercial properties.		2016: Ongoing		
		2017: Currently in Phase 4 of 5 in ongoing project		
		2018: Received OPWC funding the past three years for annual street improvement program		
7. The Village of Fredericktown will strive to create hardened electrical service to critical facilities through acquisition and installation of alternate power sources.	Village Administrator	01.01.15	12.31.18	General Budget Special Funding Private Funding
		2016: Ongoing		
		2017: No update		
		2018: No update		
GAMBIER				
1. The Village of Gambier will work with utility providers to harden utility services and prevent excessive outages during storms and inclement weather.	Village Administrator	01.01.15	12.31.19	General Budget Private Funding Special Funding
1.1 Gambier will coordinate with utility companies to bury power and utility lines in all neighborhoods, homes, and businesses.		2016: No update		
		2017: No update		
		2018: No update		
1.2 Gambier will replace aging and deteriorating power, water, sewer, and other utility distribution systems.		2016: No update		
		2017: No update		
		2018: No update		
1.3 Gambier will develop protective actions to prevent or lessen the likelihood of damage to water treatment and/or distribution systems during disasters and inclement weather.		2016: No update		
		2017: No update		
		2018: No update		
1.4 Gambier will work to coordinate dependable and resilient wireless service through those providers within the jurisdiction to improve the capability to communicate during inclement weather and disasters.		2016: No update		
		2017: No update		
		2018: No update		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
GANN				
1. The Village of Gann will educate the community about notification systems that warn residents of impending disasters and the actions they should take immediately to protect themselves and their property.	Mayor	01.01.15	12.31.16	General Budget
1.1 Gann will develop partnerships with Knox County Emergency Management and other agencies to develop information dissemination capabilities that might include 2-1-1 and other community agencies, and would enhance the community's ability to communicate with all populations, including those with functional and special needs.		2016: No update		
		2017: No update		
		2018: No update		
1.2 Gann will educate the community about evacuation procedures and how to identify shelter locations, comfort stations, and service centers during disasters.		2016: No update		
		2017: No update		
		2018: No update		
MARTINSBURG				
1. The Village of Martinsburg will investigate and implement means to create and provide safe rooms for residents who live in mobile homes, homes built on concrete slabs, and other structures that lack storm shelters used as protection in wind and other severe storms.	Mayor	01.01.15	12.31.19	Special Funding Private Funding
		2016: No update		
		2017: No update		
2. The Village of Martinsburg will establish sites to be used as shelters, comfort stations, and service centers during disasters, and will strive to equip these sites with the features necessary to adequately serve the community during storms, power outages, and other disasters.		01.01.15	12.31.16	General Budget Private Funding
		2016: No update		
		2017: No update		
3. The Village of Martinsburg will develop storm sewer systems to more adequately manage runoff water for all areas and thus prevent/lessen flooding in residential and/or commercial properties.		01.01.15	12.31.19	General Budget Special Funding
		2016: No update		
		2017: No update		
MOUNT VERNON				
1. The City of Mount Vernon will develop projects to lessen the damages to property from flooding, including acquisition and demolition projects for repetitive loss properties when and where appropriate.	Safety Service Director	01.01.15	12.31.19	General Budget Special Funding Private Funding
1.1 Mount Vernon will consider acquisition and demolition projects to		2016: Ongoing		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
remove repetitive loss structures and prevent further losses.		2017: No rep loss structures at this time; old Middle School might be a project 2018: Use land bank, flood regulations		
1.2 Mount Vernon will consider the construction of retention ponds to hold runoff waters during periods of heavy precipitation.		2016: Ongoing 2017: Blackberry Alley project; ongoing with new construction; already in current plans; B.A. addresses underground retention 2018: Yes, in developments raingardens		
1.3 Mount Vernon will improve storm sewer systems to more adequately manage runoff water for all areas and thus prevent/lessen flooding in residential and/or commercial properties.		2016: Ongoing 2017: Developing a storm water utility; has been and will continue to be monitored 2018: CDBG Grant for 2019-2020		
1.4 Mount Vernon will identify and develop elevation options for roadways, streets, and other infrastructure that is negatively affected by flooding on a regular basis.		2016: Ongoing 2017: Mt. Vernon Ave. bridge is an example 2018: Yes; Mt. V Avenue Bridge		
1.5 Mount Vernon will maintain, repair, and/or replace dams, dikes, and reservoirs that hold or contain waters that otherwise may flood homes and other properties.		2016: Ongoing 2017: Developed new watershed plan; new bridge on Mt. Vernon Ave. 2018-19; has been assessed already; hoping for EPA funding; partially done for plan; need a watershed plan that is EPA compliant 2018: Yes; \$0.5M OEPA Grant Request		
2. The City of Mount Vernon will work with utility providers to harden utility services and to prevent excessive outages during storms and inclement weather.	Safety Service Director	01.01.15	12.31.17	General Budget Private Funding Special Funding
2.1 Mount Vernon will bury power and utility lines in new neighborhoods, homes, and businesses.		2016: Ongoing 2017: Ongoing; newer neighborhoods doing underground; newer neighborhood developments are buried 2018: 10 Year Plan and Asset Mgt. Plan		
2.2 Mount Vernon will replace aging and deteriorating power, water, sewer, and their utility distribution systems.		2016: Ongoing 2017: Implementing rate increases; raise rates to cover ground waterline breaks; on an as needed basis; number of line breaks is unacceptable so they need to repair and replace to avoid breaks 2018: 10 Year Plan and Asset Mgt. Plan		
2.3 Mount Vernon will develop protective actions to prevent or lessen the likelihood of damage to water treatment and/or distribution		2016: Ongoing 2017: No update		

Mitigation Goal	Lead Agency/Person	Start Date	End Date	Funding
systems during disasters and inclement weather.		2018: No update		
2.4 Mount Vernon will work with wireless service providers to establish dependable and resilient wireless service within the jurisdiction to improve the capability to communicate during inclement weather and disasters.		2016: Ongoing		
		2017: Codes need to be revised; new annual maintenance for city IT system with local provider; towers not able to be installed in the city so this is difficult to do		
		2018: No update		
3. The City of Mount Vernon will consider development of a comprehensive plan for land use within the jurisdiction, taking into account the consequences of development and the effect on existing properties and businesses, as well as the consequences on the communities downstream in Knox County and in counties beyond Knox County.	Safety Service Director	01.01.15	12.31.17	General Budget Special Funding
3.1 Mount Vernon will consider creation of building standards for construction, including such practices as contractor-vendor approval, acceptable industry standards for construction, and reasonable construction materials guidance.		2016: Ongoing		
		2017: Ongoing; no residential building codes now; city is very opposed to this and not under consideration delete?		
		2018: Yes		