

Section 5: Mitigation Strategy

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Section 5: Mitigation Strategy

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

5.1 Updates to the 2015 Plan Mitigation Goals and Actions

This section of the plan focuses on the mitigation strategies developed by each participating jurisdiction to reduce or avoid long-term vulnerabilities to the 8 identified hazards. For continuing participants from the 2015 Plan, each of the jurisdictions' mitigation goals and actions identified in the 2015 Plan were reviewed for relevance and updated with current status. Continuing and new participants are noted within the mitigation strategies section (**Attachment 1**).

These mitigation actions were activities that stakeholders in the hazard mitigation process, especially local governments, could implement over a five-year period. Many of the actions were intended to be implemented in a relatively short period of time, generally less than two years, using existing organizations and resources in each county or across the region. Other actions required a longer implementation timeframe, perhaps two to five years or longer, as well as additional resources, particularly funding.

For the 2015 Plan, an online database was created to allow jurisdictions to evaluate hazards and corresponding mitigation goals and actions for their community. Jurisdictions were instructed to complete information on goals and actions for hazards that were identified threats to their community. For each mitigation action, jurisdictions were asked to designate a project's status as completed, deleted, deferred or ongoing. If the action was completed, jurisdictions were asked to provide a date of completion. For those deleted or deferred, jurisdictions were asked to provide a narrative explanation. If a project was marked as ongoing, further information was requested to document the current status and expected future effort.

In 2015, the planning team determined that "priority" should be ranked on a qualitative scale of high, medium and low and jurisdictions were instructed to consider a generic cost/benefit analysis when ranking mitigation actions. However, the 2020 planning team decided the qualitative ranking scale was not helpful to jurisdictions when making mitigation decisions. The planning team decided to show the individual values for magnitude, impact, and probability of occurrence instead of assigning a qualitative ranking.

High-priority actions were those for which resources, manpower, political capital, etc., are readily available to accomplish the actions and should generally be accomplished within two years. Medium-priority actions were those that are desirable, but due to various planning limitations, weren't expected to be implemented for two to five years. Low-priority actions were those that weren't scheduled to be implemented in the near future (greater than five years). Actions deleted or deferred were either no longer applicable or regarded as "failing" the cost/benefit analysis.

5.1.1. Changes to 2015 Mitigation Goals and Actions Database for 2020 Plan Update

For this 2020 Plan update, continuing participants used the database created in 2015 to update their goals and actions. The database was modified slightly to collect additional information. Two of the added fields were optional and one was required. The new fields were:

- Type of Mitigation Activity – *optional* field to describe if the action related to Natural Systems protection, Structure and Infrastructure Projects, Local Plans and Regulations or Education and Awareness Programs
- Cost / Benefit Review – *required* field to discuss a benefit-cost review of each action as part of the evaluation and prioritization process to determine if costs are reasonable compared to probable benefits. Jurisdictions could use cost estimates based on experience and judgment and discuss benefits as losses avoided (such as the number and value of structures and infrastructure protected by the action and the population protected from injury and loss of life). Qualitative benefits, such as quality of life and natural and beneficial functions of ecosystems could also be used for the review.
- Target Capacity – *optional* field to project the extent of population or infrastructure the action is intended to serve/protect/mitigate.

5.1.1a. Prioritization of Mitigation Actions

The chronological ranking methodⁱ of prioritizing mitigation goals and actions (based on implementation timeframes) used for the 2015 Plan was again used for this update and defined as:

- Low-Priority Actions -- those not scheduled to be implemented in the near future (greater than five years).
- Medium-Priority Actions – those that are desirable but due to various planning limitations, are not expected to be implemented for two to five years.
- High-Priority Actions: -- those for which resources, manpower, political, capital etc. are readily available to accomplish the action within the next one to two years.

Jurisdictions considered the results of the hazard profiles and their current capabilities to protect and mitigate natural hazards. They also looked at actions taken previously, 2015 goals and strategies, and projects that could be supported with FEMA pre-disaster or hazard mitigation grants. Local jurisdictions also considered the increase in risks due to changing climate conditions.

5.1.1b Cost Estimates for Mitigation Action

In 2015, to estimate the cost of mitigation actions a cost estimation process was used where specific costs weren't known. This same process was used for the 2020 plan. Jurisdictions were encouraged to use a cost estimation range qualifier in accordance with the scale below:

- Low – the action is estimated to cost between \$0 and \$10,000
- Medium – the action is estimated to cost between \$10,001 and \$100,000
- High -- the action is estimated to cost more than \$100,000

Additionally, jurisdictions were asked to consider whether the costs were one-time or recurring.

5.1.1c Status of Jurisdictional 2015 Goals and Actions

As noted above, continuing jurisdictions were required to update the status of their goals and actions and make changes as appropriate. Attachment 2 is the consolidated listing of all participating jurisdictions' mitigation goals and actions and reflects the most current status of their goals and actions. Where a jurisdiction marked an action as "completed" or "deleted" from the 2015 Plan, these actions have been removed from the listing. To avoid confusion and for ease of **reference** to the 2015 Plan and Attachment 1, remaining goals and actions were not re-numbered or re-lettered.

5.1.2 Updates to School District/College/University 2015 Mitigation Goals and Actions

Those school districts and colleges and universities that participated in the 2015 plan were asked to review their 2015 goals and strategies similarly to cities and counties. For school districts that did not participate in 2015, they were asked to identify goals and strategies for the 2020 plan. These have been consolidated in Attachment 2 in a table format and include the same information elements discussed above that cities and counties were required to complete.

5.2 Mitigation Goals and Actions for 2020 Plan

Jurisdictions that participated in the 2015 plan were invited to participate in the 2020 plan. In addition, all cities, school districts and public colleges and universities that did not participate in 2015 were invited to be a part of the plan. Continuing participants were encouraged to develop new goals and actions using the online tool (or an excel spreadsheet). Some jurisdictions chose to add new goals and actions, others elected to continue focusing on previously identified strategies. Both the old (2015) and new (2020) mitigation goals and actions were consolidated into **Attachment 2**. The column labeled "Plan year" indicates if the goal or action is from the 2015 plan or newly added as part of the 2020 update. New (2020) goals continue to mirror the numbered list from the 2010 goals and actions (see Attachment 1), but new actions are unnumbered, both to avoid confusion and denote them as new actions.

5.3 Implementation of the National Flood Insurance Program (NFIP)

Requirement §201.6(c)(3)(ii): *[The hazard mitigation strategy] must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirement, as appropriate.*

In accordance with regulatory requirements, all hazard mitigation plans must describe each jurisdiction's participation in the NFIP by identifying, analyzing and prioritizing actions related to continued compliance with the NFIP. These three basic components include:

- 1) Adoption and enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs);
- 2) Floodplain identification and mapping, including any local requests for map updates; or
- 3) Description of community assistance and monitoring activities

Three sections of this 2020 updated plan were developed to show compliance with the above requirements: 1) and 3) The Local Capabilities Section (Section 3, table 3.7) shows which jurisdictions have floodplain management plans or ordinances in effect and describe community assistance and monitoring activities where applicable. 2) Floodplains were identified and mapped for all participating jurisdictions as part of the Flood risk assessment and are available as part of the data layers for the online planning tool (**Refer to Section 4.5.4**).

Additionally, several goals and actions were identified in the 2010 and 2015 Plans that jurisdictions could adopt in order to meet the deliverables of NFIP compliance and are listed below. These have been grouped below according to NFIP component and are notated by double asterisks (**) within each jurisdiction's mitigation strategy (**Attachment 1**).

New strategies developed for the 2020 Plan which fall into these categories are likewise identified by a double asterisk:

1) Floodplain management

Discourage new development in floodplains and flood-prone areas.

- a.) Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.
- b.) Consider using the 500-year floodplain rather than the 100-year floodplain or consider adopting a stream setback ordinance.
- c.) Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.
- d.) Consider fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.

Participate in, and ensure compliance with, flood mitigation and floodplain management programs.

- a.) Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).
- b.) Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents. Evaluate current and planned development in areas where risks from flooding have increased due to changes in the FIRMs.
- c.) Designate a Floodplain Manager and support training to become certified.

2) Floodplain identification and mapping

Improve flood hazard assessments and flood mapping.

- a.) Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.
- b.) Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.
- c.) Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.
- d.) Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.
- e.) Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.

3) Community assistance and monitoring activities

Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.

- a.) Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.
- b.) Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.
- c.) As funding allows, repetitive flood loss properties and structures will be targeted for buyout.
- d.) With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses

Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.

- a.) Identify incentives to offer property owners to remove or retrofit structures in flood-prone areas.

The Metropolitan Emergency Managers Committee has committed to review the Hazard Mitigation Plan annually and assist local jurisdictions with updated information and guidance to maintain the plan and to consider steps to integrate the HMP into other plans and policies. The Kansas City region is preparing a climate action plan (KC Climate Coalition with support from MARC) and the results of that analysis will be used to engage local officials to take more proactive steps to mitigate risks from natural hazards.

5.4 Attachments

Attachment 5.1: Community Mitigation Goals and Actions

Attachment 5.2: School Mitigation Goals and Actions

ⁱ FEMA *Local Mitigation Planning Handbook*, 6-B, March 2013

Cass County 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Floods										
Discourage new development in floodplains and flood-prone areas.										
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Deferred	Not something the county commission is comfortable doing at this time	Local Plans and Regulations	Unspecified					
*Enhance public awareness and education efforts related to flooding.	2020	Ongoing	Work with regional PrepareMetroKC effort	Education and Awareness Programs				county	Low	local
**Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing	Public awareness events, brochures , media, severe weather training	Education and Awareness Programs	High	12/1/2018	No/ or low cost to implement and require little staff support.	county	Low	Federal, State and local grants when available
Identify low water crossings in the county that may pose a risk to the driving public and eliminate those hazards.										
Emergency Management will work with public works to identify low water crossings in the county and plan for their elimination.	2020	Ongoing	The Emergency Manager will work with county officials including public works and GIS to begin the identification and planning process.	Structure and Infrastructure Projects	Unspecified	12/31/2021		county emergency management and public works	to be determined	local government staff time
Emergency management working on with other county departments in looking at the purchase of flood gates to protect the public from driving into floodwaters	2020	Ongoing	County Commission shows interest in utilizing HMPG funds to fund this project.	Structure and Infrastructure Projects	Medium	TBD		county emergency management and public works	TBD	Grant funding
Implement or improve flood warning systems.										
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing	Use of the county Everbridge alert system to alert the public of severe weather events and use of social media accounts	Education and Awareness Programs	Unspecified	TBD		county public works and public information	TBD	Grant funding
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Deferred	waiting for more complete data	Local Plans and Regulations	Unspecified					
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Ongoing	Zoning dept, Assessors office and GIS department are developing this	Local Plans and Regulations	Medium	12/1/2018	Data has multiple uses and can benefit across multiple programs.	county zoning, assessor and GIS departments	Low	Federal, State and local grants when available
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred	County does not have the money for the match or maintenance	Unspecified	Unspecified					
**Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing	Zoning Office, through the NFIP regulates new structures	Structure and Infrastructure Projects	High	12/1/2018	Decreases potential damage and reduces out of pocket insurance costs.	county zoning office	Low	Federal, State and local grants when available
**Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing	Working with Zoning and Emergency Management through handouts and public education ie fairs, festivals and social media	Education and Awareness Programs	Medium	12/1/2018	No/ or low cost to implement and require little staff support.	county zoning and emergency management	Low	Federal, State and local grants when available
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Deferred	Not controlled by county, we will advise and assist when requested	Unspecified	Unspecified					
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Deferred	Not controlled by county, we will advise and assist when requested	Structure and Infrastructure Projects	Unspecified					
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing	Zoning, codes and Flood Plain manager working with homeowners and SEMA/FEMA to resolve issues	Local Plans and Regulations	High	12/1/2018	Requires cooperation of landowners to implement, but ultimately beneficial.	zoning, codes and floodplain manager	Low	Federal, State and local grants when available
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Deferred	Should be incorporated in the new building code standards	Local Plans and Regulations	Unspecified					
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Deferred	Should be incorporated in the new building code standards	Local Plans and Regulations	Unspecified					
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deferred	No interest in local government doing so at this time	Unspecified	Unspecified					
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing	Public education via MARC/MEMC, local government and working with facilities that house vulnerable public	Education and Awareness Programs	Medium	Ongoing	Low/no cost mechanism to increase public safety.	county emergency management and public information	\$1,000.00	Local government and any grants available
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds. DELETE GOAL										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Deleted	Should be incorporated in new building code standards	Unspecified	Unspecified					
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Deleted	Already incorporated into local building codes	Structure and Infrastructure Projects	Low	Ongoing	Would reduce recovery costs, but would have high initial implementation		Unknown	NA
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deleted	No interest in local government in doing so at this time.	Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	Will start looking at sheltering plans for existing county facilities and start to place shelter info placards for them.	Structure and Infrastructure Projects	Unspecified			county public works	low	county
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Deferred	Interest is not there at this time	Unspecified	Unspecified					
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred	No Funding available at this time	Unspecified	Unspecified					
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing	Public awareness events ie county fair, local festivals, brochures, social media and yearly storm spotter training.	Education and Awareness Programs	Medium	Ongoing	Low/no cost mechanism to increase public safety.	county emergency management		Federal , state and local grants
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing	Public education with MARC and MEMC	Education and Awareness Programs	Unspecified	Ongoing	Low/no cost mechanism to increase public safety.	work with MARC and MEMC		NA

Belton 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing	No requirement to retrofit	Unspecified	Medium	Ongoing, unknown	While may increase building costs, will lead to greater occupant safety	building code office	Medium	City
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Completed	Based on IBC	Unspecified	Medium	Ongoing, unknown	While may increase building costs, will lead to greater occupant safety		\$0.00	City
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Completed	Based on IBC	Unspecified	High	Ongoing, unknown	Low/no cost mechanism to increase public safety.		\$0.00	City
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Completed	IBC requires. Belton has adopted IBC'12	Unspecified	High	Ongoing, unknown	Low/no cost mechanism to increase public safety.		\$0.00	City
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Completed	Community Storm shelter built with Federal funds.	Unspecified	High	Ongoing, unknown	Tax incentives could defray otherwise high costs for developing safe rooms and will likely lead to greater acceptance.		Medium	City
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing	Promote the BHS shelter, and other community shelters	Unspecified	High	Ongoing, unknown	Low/no cost mechanism to increase public safety.	emergency management	\$0.00	School Dist.
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Deferred	Deferred to utilities	Unspecified	Medium	Ongoing, unknown	Initial high costs offset by potential savings in recovery costs.		High	City
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred	Not offered	Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	Coordinating with MPR for assessment	Unspecified	High	Ongoing, unknown	Low/no cost mechanism to increase public safety.	emergency management and public works	\$0.00	City
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Completed	Policy implementation under way	Unspecified	High	Ongoing, unknown	Low/no cost mechanism to increase public safety.		\$0.00	City
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing	Will be based on assessment	Unspecified	High	Ongoing, unknown	Increases safety of existing infrastructure for moderate cost	emergency management and public works	Medium	City
Improve Citizen Tornado Preparedness and Warning.										
Encourage residents to be prepared with "ready in 3 Kits"	2015	Ongoing		Education and Awareness Programs	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	0	0
Encourage use of map your neighbors program "Block Captains"	2015	Ongoing	Use of Neighborhood watch capt.	Education and Awareness Programs	Medium	Ongoing	Free mechanism to assist in damage assessment and community preparedness	emergency management	0	0
Keep update of city expansion annexes for new siren coverage	2015	Ongoing		Local Plans and Regulations	Medium	Ongoing	Ensures siren coverage areas are up to date at little cost.	emergency management	0	0
Promote participation of community for "Code Red" alerting	2015	Completed	Offered thru Cass Co. ESB	Education and Awareness Programs	High	Ongoing	Free mechanism to alert public of disasters.		0	0
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing	We encourage during Community Development, and Belton Emergency Management presentation	Unspecified	Medium	Ongoing, unknown	Low/no cost mechanism to increase public safety.	emergency management	\$0.00	City
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing	None at time	Unspecified	Medium	Ongoing, unknown	Low/no cost mechanism to increase public safety.	emergency management	\$0.00	City
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Completed	Per Code	Unspecified	High	Ongoing	Will provide legal mechanism to enforce floodplain management.		\$0.00	City

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Completed	Per Code	Unspecified	High	Ongoing	Will provide comprehensive approach to floodplain management.		Low	City
**Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Completed	Per Code	Unspecified	High	Ongoing	Will discourage development in floodplain while generating funds for floodplain management activities.		Low	City
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing	when identified, appropriate, and available	Unspecified	High	Ongoing, unknown	Will eliminate or greatly reduce repetitive loss properties.		High	Grants
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing	When available	Unspecified	High	Ongoing, unknown	No/ or low cost to implement and require little staff support.		\$0.00	City, via grants
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing	see above	Unspecified	High	Ongoing, unknown	No/ or low cost to implement and require little staff support.		\$0.00	City
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing	We work with FEMA and property owners	Unspecified	High	Ongoing, unknown	No/ or low cost to implement and require little staff support.		\$0.00	City
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Ongoing	Flood warning system no gauges	Unspecified	Medium	Ongoing	Stream gauges are relatively cost effective measures to warn of flooding events and implement mitigation measures.		Medium	City
Improve flood hazard assessments and flood mapping.										
Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Completed	Work with FEMA	Unspecified	High	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	City

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deferred	Work with FEMA	Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing	Currently required by Code	Unspecified	High	Ongoing, unknown	Will prevent flooding for moderate costs	public works	\$0.00	Grants
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing	As identified, and funding is available	Unspecified	High	Ongoing, unknown	No/ or low cost to implement and require little staff support.	public works	\$0.00	Grants
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing	Required during development process	Unspecified	High	Ongoing, unknown	Will reduce floodplain vulnerability and increase city greenspace.	public works	Medium	Grants
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Ongoing	As identified, and funding is available	Unspecified	Medium	Ongoing, unknown	Will reduce floodplain vulnerability and increase city greenspace.	public works	Medium	Grants
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing	Work with property owners to identify opportunities	Unspecified	Medium	Ongoing	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	emergency management	\$0.00	Grants
Severe Thunderstorms										
Increase storm warning and forecasting collaboration between city agencies.										
Work with PW on comparing information on incoming weather events	2015	Completed	Weather events are monitored and shared with all city departments	Structure and Infrastructure Projects	High	Ongoing	Potential damage areas requiring public works support will be known before disasters, reducing response times and speeding recovery.		0	0

Harrisonville 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2020 - 2030	Planning Stage	Work within the parameters of adopted building codes regarding hazardous area glazing and newer proposed code requirements based on wind speed design for tornado prone areas(ie: ICC-600 expanded and new areas).	Future adoption of most current ICC code cycles. Increase public awareness of building materials options and work with material suppliers to enable availability.	Medium	2025-2030	High costs/High benefit	building code office	Public =over \$500,000 Private= over \$1,000,000	City, private property owners and developers and federal assistance
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2020-2025	Ongoing	The City of Harrisonville will encourage new businesses,schools, etc to construct shelters for their employees and residents	Code and Ordinance adoption. Education	High	2025	Medium costs/high benefit	building code office	\$15,000	City and federal assistance
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2020-2030	Deferred	Due to City budget constraints incentives offered by the City will be unknown	Lobby for increased availability of federal funding	High	Unknown	Unknown costs/high benefit		Unknown	Federal assistance
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2025	Ongoing		Unspecified	Unspecified			emergency management	Low	local govt
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred		Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2020	Ongoing	Have adopted 3 shelter locations and it works to make them visible on Google Maps and GPS	Hazard Control	Medium	Ongoing	Low/no cost mechanism to increase public safety.	public works	1000	operating funds
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2020	Ongoing	Encouraging new policies for construction of safe room and shelters in new public facilities	Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	building code office	1000	operating funds
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2020	Ongoing	Ongoing issue to ensure that in place public facilities have adequate sheltering for the public and its residents.	Unspecified	Unspecified			public works	High	Grants

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2020-2025	Ongoing	Ongoing to distribute the information to public buildings and residential	Unspecified	Medium	Ongoing	increase in safe rooms in community	emergency management	1000	operating funds
Partner w/ trade orgs. to conduct safe room workshops.	2020	Ongoing	Working on some sort of partnership with a safe room company to conduct safe room workshops.	Unspecified	Medium	Ongoing	increase in safe rooms in community	emergency management	1000	operating funds
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2020	Ongoing	<i>City of Harrisonville does not allow developments in the floodplain. All developments or substantial redevelopments must be elevated above the floodplain</i>	Unspecified	Medium	Ongoing	NA	public works; floodplain manager	NA	NA
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2020	Ongoing	Provide public education materials from FEMA at public events and the city hall codes office kiosk. Provide NFIP local contact information to residents.	Floodplain Management - Improve Compliance with NFIP	High	Ongoing	Will reduce recovery costs and ensure compliance with NFIP.	emergency management	Low	Private
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2020	Ongoing	Provide public education materials from FEMA at public events and the city hall codes office kiosk	Floodplain Management - Beyond Minimum Requirements	Medium	Ongoing	Will reduce recovery costs and ensure compliance with NFIP.	emergency management	Low	City general fund
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2020	Ongoing	Held Flood Mitigation Workshop for residents in 2018 with representatives from SEMA, NFIP, and USACE - Silver Jackets. Another similar event is being planned for 2020	Educate Property Owners about Flood Mitigation Techniques	Medium	2020	Provide guidance to homeowners	emergency management	Low	City general fund
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2020	Will begin this year	The City of Harrisonville uses the FEMA SDE program to estimate and track losses. HMGP funding will be sought to buyout these properties.	Removing Existing Structure from Flood Hazard Areas	High	2025	Will eliminate or greatly reduce repetitive loss properties.	public works; emergency management	\$3,400,000	City of Harrisonville & HMGP

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2020	Watershed Evaluations Underway	Based upon recent flood events, the City has identified repetitive flood prone properties: Town Creek - 6 properties; Muddy Creek - 5 properties; Trib #2 - 6 properties. Look for private-public partnering opportunities with regional watershed, based solutions.	Removing Existing Structure from Flood Hazard Areas; Improve Stormwater Drainage System Capacity	High	2030	Will eliminate or greatly reduce repetitive loss properties.	public works; emergency management	\$4,000,000	City, private developers, and HMGP/FMA/PDM
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2020	Ongoing	The City of Harrisonville is in the process of implementing sustainable design practices in stormwater management. This process will be better defined as performance data is obtained and evaluated.	Sustainable Planning & Design	Medium	Ongoing	Non-structural solutions such as stream buffers will reduce long-term floodplain impacts	floodplain manager; emergency management	Low	Private and City of Harrisonville
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2020	Ongoing	Severe flood events in 2017 and 2019 resulted in numerous homes and businesses flooded. Public meeting events will be held in 2020 to determine public interest in mitigation alternatives.	Removing Existing Structure from Flood Hazard Areas	High	2022	Will eliminate or greatly reduce repetitive loss properties.	floodplain manager; emergency management	Low	City general fund
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2020	Ongoing	Following the severe flood events of 2017 and 2019, the City has been meeting with the USGS about the installation of stream gauges and flood warning devices	Emergency Preparedness	High	2025	Has the potential to save lives and property	public works; emergency management	\$200,000	City and USGS
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Deferred			Unspecified					
Improve flood hazard assessments and flood mapping.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Assist FEMA with the Cass County Restudy	2021	Starting	A county-wide restudy by FEMA is getting started with Wood Consulting performing the work. The City attended the scoping meeting and has provided list of data to the SC. The data includes topographic information, watershed characteristics, and USACE models.	Floodplain Management	High	2024	Help guide floodplain management	floodplain manager; emergency management	High	FEMA
**Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2022	Hold pending completion of the data acquisition	Will proceed upon completion of the data acquisition	Improved Flood Risk Management	Low	2023	Help guide floodplain management	public works; floodplain manager	Low	City of Harrisonville general funds
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2021	Hold pending completion of the investigation	Will proceed once the investigation is completed	Improved Flood Risk Management	Low	2022	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	planning, public works	Low	City of Harrisonville general funds
**Investigate the HAZUS program from FEMA. Download and learn how to operate the program including data acquisition requirements.	2020	Starting	City staff will evaluate this HAZUS program and determine if it should be utilized for further floodplain management	Improved Flood Risk Management	Low	2020	None	planning, public works	Low	City of Harrisonville general funds
Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Deferred		Unspecified	Unspecified					
Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Deferred		Unspecified	Unspecified					
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deferred		Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Consider & plan alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2020	Ongoing	Utilizing the watershed approach and GIS technology, the City of Harrisonville works with homeowners and developers to minimize impacts to the floodplains. Low impact development and utilization of riparian corridors are a priority. With the City's Parks Department, these green spaces are restored or assimilated into sports facilities.	Natural System Protection	High	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.	planning	Low	City Funds
Identify funding sources for the acquisition & construction of flood-prone land for environmental, recreational and flood mitigation uses.	2021	Starting after alternative planning, watershed and floodplain modeling, and private partnering agreements in place.	The City of Harrisonville has and continues the watershed based evaluation of regional stormwater detention basins. Since 2003 we have constructed one regional basin and prepared concept plans for two more. The City is working with the US Army Corps of Engineers (USACE) on a comprehensive watershed plan for Muddy Creek. Mitigation of flooding is being evaluated; these efforts include regional stormwater detention.	Removing Existing Structure from Flood Hazard Areas; Improve Stormwater Drainage System Capacity	High	Ongoing	Regional detention will protect flood prone properties	planning	\$3,000,000	Public/Private partnering. City funds, private land donations, USACE, and PDM/FMA assistance
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2020	Ongoing	Public Works and Community Development has worked together on low-impact development to maximize green space and minimize floodplain encroachments. In accordance with our MS4, by 2022, the city will be considering the implementation of riparian corridor protection.	Protect and Restore Natural Flood Mitigation Features	Medium	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.	planning; public works, parks and recreation	Medium	City general funds

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Design and construct detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2021	Concept and modeling completed	With assistance from the US Army Corps of Engineers, a detailed Muddy Creek watershed and floodplain analysis was performed. Regional stormwater detention has been identified as a potential mitigation effort. The City is negotiating with private developers for a private/public partnering.	Construct Flood Control Measures; Improve Stormwater Drainage System Capacity	High	Ongoing	Will prevent flooding for moderate costs	planning; public works, parks and recreation	\$4,000,000	City general funds, fee-in-lieu-of funds, private development, and federal assistance (FMA/PDM)
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2020	Starting	The City is evaluating the development of a stream team. We are working with the Missouri Department of Conservation and the South Grand River Watershed Alliance to determine the effectiveness and support if this effort is pursued.	Form Partnership to Support Floodplain Management	Medium	Ongoing	NA	planning; public works, parks and recreation	Low	City and private funds
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats		Deferred		Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing	City will continue to participate with the NFIP and assess the ability to work with the CRS program.	Floodplain Management	High	Ongoing	NA	floodplain manager	Low	City general funds
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2020	Will begin this year	Once HMGP funding is secured, City will seek to buyout these floodprone properties.	Removing Existing Structure from Flood Hazard Areas	High	2025	Will eliminate or greatly reduce repetitive loss properties.	floodplain manager, emergency management	\$3,400,000	City of Harrisonville & HMGP
**Elevate low-water crossing structurally failing due to overtopping	2021	Waiting to start	Low water crossing in the City Park that has been damaged from frequent overtopping would be relocated and raised	Infrastructure Protection	Medium	2022	Would help minimize loss to infrastructure	public works	\$150,000	City funds and FMA/PDM assistance

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2020	Ongoing	The City will provide education materials to guide property owners in flood prone areas.	Elevate or Retrofit Structures and Utilities	Medium	Ongoing	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	emergency management	NA	Private
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2023	Waiting to start	The City will evaluate alternate incentives	Elevate or Retrofit Structures and Utilities	Low	2024	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	floodplain manager, emergency management	NA	City & Private

Lake Annette 2020 Mitigation Strategy (New Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Ensure the community has shelters to accommodate residents and visitors during tornadoes/natural hazards.										
Retrofit or add shelters to existing public/critical facilities.	2020	New	No public building; community center no longer an option	Structure and Infrastructure Projects	Medium	TBD as funds are available	Will better ensure safety of residents	board of aldermen	High	TBD
Improve tornado warning capabilities.										
Install outdoor warning sirens	2020	New	Will work with fire dept to determine best option for community	Structure and Infrastructure Projects	Medium	TBD as funds are available	Will better ensure safety of residents	board of aldermen	Medium	TBD
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Continue to implement city regulations as participation in the federal flood insurance program.	2020	Ongoing	Part of city's planning and zoning process.	Local Plans and Regulations	High	Ongoing	Part of city operation	board of aldermen	Low	Local
Implement or improve flood warning systems.										
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2020	New	Explore ordinances and policies that may require attorney and education costs	Local Plans and Regulations	High	1-2 years	Will ensure that citizens are prepared real time for flood events.	board of aldermen	Low	Local funds; possible grant funds
Install outdoor warning sirens	2020	New	Will work with fire dept to determine best option for community	Structure and Infrastructure Projects	Medium	TBD as funds are available	Will better ensure safety of residents	board of aldermen	Medium	TBD
Increase communication with NWS for timely reporting	2020	New		Local Plans and Regulations	High	1-2 years	Low/no cost mechanism to increase public safety.	board of aldermen	Low	None required
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Part of city operation	board of aldermen	Low	Local

Lake Winnebago 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Deferred		Education and Awareness Programs	Medium		Low/no cost mechanism to increase public safety.		Low	Local
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred								Unknown
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Deferred		Education and Awareness Programs	High		Low/no cost mechanism to increase public safety.		Low	Local
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing		Local Plans and Regulations	High	Ongoing	While may increase building costs, will lead to greater occupant safety	building official	Medium	building permits
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing		Local Plans and Regulations	High	Ongoing	While may increase building costs, will lead to greater occupant safety	building official	Medium	building permits
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing		Local Plans and Regulations	High	Ongoing	While may increase building costs, will lead to greater occupant safety	building official	Low	building permits
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing		Education and Awareness Programs	High	Ongoing	Low/no cost mechanism to increase public safety.	building official	Low	fees for building permits
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Completed	We do not allow building in the flood plain.	Local Plans and Regulations	Unspecified					
Improve flood hazard assessments and flood mapping.										
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Local Plans and Regulations	Medium	Ongoing	Low cost mechanism to evaluate flood risk	engineer	Low	Unknown
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Local Plans and Regulations	High	Ongoing	Will ensure homeowners and businesses are protected.	floodplain manager	Low	City
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Ongoing		Local Plans and Regulations	High	Ongoing	Will ensure latest copies of flood maps are on hand to guide development and mitigation strategies.	floodplain manager	Low	City
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing		Local Plans and Regulations	Medium	2010	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	board of aldermen	Unknown	property owner

Peculiar 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Deferred		Unspecified	Unspecified					
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Deferred		Unspecified	Unspecified					
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Deferred		Unspecified	Unspecified					
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing		Unspecified	High		No/low cost mechanism to increase public safety.	building official	0	NA
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing		Unspecified	High		No/low cost mechanism to increase public safety.	building official	0	NA
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deferred		Unspecified	Unspecified					
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing		Unspecified	High		No/low cost mechanism to increase public safety.	emergency manager	0	NA
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Deferred		Unspecified	Unspecified					
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred		Unspecified	Unspecified					
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	Medium		No/low cost mechanism to increase public safety.	emergency manager	0	NA

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred		Unspecified	Unspecified					
Floods										
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing		Unspecified	High	Ongoing	Will reduce recovery costs and ensure compliance with NFIP.	floodplain manager	free	NA
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Deferred		Unspecified	Unspecified					
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Deferred		Unspecified	Unspecified					
With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Deferred		Unspecified	Unspecified					
Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Deferred		Unspecified	Unspecified					
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Deferred		Unspecified	Unspecified					
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Deferred		Unspecified	Unspecified					
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Deferred		Unspecified	Unspecified					
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Ongoing		Unspecified	Medium	9/1/2016	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	planning and public works	100000	Public Works, Capital, Water and Wastewater Utility Funds
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Deferred		Unspecified	Unspecified					
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing		Unspecified	High	Ongoing	Flooded homes, and new downstream conditions are better than existing conditions.	planning and public works	High	Provided by development
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2010	Ongoing		Unspecified	Medium	Unknown	No/low cost mechanism to increase public safety.	planning and public works	Low	Unknown
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Deferred		Unspecified	Unspecified					
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Deferred		Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Unspecified	High	Unknown.	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	floodplain manager	Low	Unknown
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Deferred		Unspecified	Unspecified					
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					

Pleasant Hill 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deferred		Unspecified	Unspecified					
Evaluate commercial building code requirements for storm shelters requirements inside commercial and industrial buildings.	2020	New		Unspecified	Unspecified			building code official	low	general fund
If necessary, implement storm shelter requirements for commercial and industrial buildings.	2020	New		Unspecified	Unspecified			building code official	low	general fund
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing		Unspecified	Unspecified	No set date	Low cost mechanism to increase public safety.	public works	500	General Fund
Floods										
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Deferred		Unspecified	Unspecified		Lives and property losses avoided			
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing	Public education efforts will continue in plan year 2020; with a reminder to all properties and structures located within the flood plain.	Unspecified	Unspecified	Ongoing	No/low cost mechanism to encourage flood preparedness.	emergency management	Under \$100	General Fund
Ensure all roadways are accessible to emergency service personnel and that at least one route to a destination is accessible without undue delay.										
Assess and if necessary replace Culvert C-12a which crosses 58 Highway near the railroad track wye.	2020	New		Structure and Infrastructure Projects	High			public works	14000	Park/Stormwater Sales Tax/General Fund
Assess and if necessary, replace Culvert C-13a which crosses 58 Highway southeast of the railroad wye.	2020	New		Structure and Infrastructure Projects	High			public works		Park/Stormwater Sales Tax/General Fund
Assess and if necessary, replace Culvert C-17a which crosses 58 Highway east of 7 Highway	2020	New		Structure and Infrastructure Projects	High			public works	83000	Park/Stormwater Sales Tax/General Fund
Consideration of egress in subdivision design, particularly when roadways cross floodplains.	2020	Ongoing		Local Plans and Regulations	High			public works, planning	low	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Evaluate ordinances regarding roadway drainage ditches and culverts in an effort to allow conveyance of stormwater rather than pooling on roadways (58 Highway).	2020	Ongoing		Local Plans and Regulations	High			public works	low	General Fund
Obtain preliminary cost estimates to either elevate roadways or improve stormwater systems in areas of persistent roadway flooding.	2020	Ongoing		Structure and Infrastructure Projects	High			public works	low	General Fund
Evaluate dams throughout Pleasant Hill to ensure they are structurally sound and do not pose any downstream threats.										
Evaluate City's responsibility and/or regulations which could be put in place for private dam inspections	2020	Ongoing		Local Plans and Regulations	Low			public works, floodplain manager	Low	General Fund
Obtain cost estimate for improvements at City Lake Dam	2020	Ongoing		Structure and Infrastructure Projects	High			public works	Low	General Fund
Select and implement a solution for dam repair at the City Lake	2020	Ongoing		Structure and Infrastructure Projects	Medium			public works	High	Park Fund/General Fund
Examine flood mitigation strategies near downtown Pleasant Hill and along 58 Highway.										
Commission a downtown stormwater study	2020	Ongoing		Local Plans and Regulations	High			public works, planning	medium	Park/Stormwater Sales Tax, General Fund
Obtain cost estimate for downtown stormwater study	2020	Ongoing		Local Plans and Regulations	High			public works, planning	low	General Fund
Examine repetitive flood loss properties. Evaluate feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	Low	ongoing	Will eliminate or greatly reduce repetitive loss properties.	public works	\$10,000 per year	General Fund
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing	The City still has a large number of structures within the floodplain. While flooding at some properties have either been alleviated or the structure has been removed, there is still work to do.	Unspecified	Unspecified	No date set	No/ or low cost to implement and require little staff support.	public works	100	General Fund
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing		Unspecified	Low	No date set	No/ or low cost to implement and require little staff support.	public works	100	General Fund
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing		Unspecified	Low	No date set	No/ or low cost to implement and require little staff support.	public works, floodplain manager	100	General Fund
Improve flood hazard assessments and flood mapping.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Unspecified	Medium	ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	planning, public works	no estimate available	General Fund
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Deferred		Unspecified	Unspecified			planning, public works	TBD	General Fund
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing	As the City prepares for a comprehensive plan update, this action will be considered again.	Unspecified	Unspecified			planning, city administration	TBD	General Fund
Provide a flood warning system for residents and motorists to alert of closures and rising water to allow time to alter routes, sandbag properties, or evacuate.										
Continue to work with MoDOT regarding 58 Highway closures and placing the closure on the road conditions map as quickly as possible.	2020	Ongoing		Education and Awareness Programs	Low			public works	low	General Fund
Coordinate with MoDOT regarding 58 Highway closure signage closer to 291 to reduce the number of individuals who drive through flooded roadways.	2020	Ongoing		Structure and Infrastructure Projects	Medium			public works	low	General Fund
Explore utilization of Everbridge or other alert notification system for a specialized flash flood prone area.	2020	Ongoing		Education and Awareness Programs	Low			emergency management	medium	General Fund
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Deferred		Unspecified	Unspecified					
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	Medium	ongoing	Will eliminate or greatly reduce repetitive loss properties.	floodplain manager	Varies	General Fund
**Evaluate the adoption of stream setback ordinances	2020	New		Local Plans and Regulations	Medium			planning, public works	low	General Fund
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					
Heat										
Explore ways to mitigate against extreme heat during outdoor activities.										
Coordinate with the Cass County Library for use as a cooling center when needed	2020	Ongoing		Education and Awareness Programs	Low			emergency management	100	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Evaluate cooling centers for use at the Cass County Fair.	2020	Ongoing		Structure and Infrastructure Projects	Low			emergency management	100	General Fund
Increase awareness of effects of extreme heat.										
Create a public information campaign regarding the effects of extreme heat on your body and health.	2020	New		Unspecified	Unspecified			emergency management	200	
Create a public information campaign regarding water conservation methods.	2020	New		Unspecified	Unspecified			emergency management	200	Water/Sewer Fund
Severe Thunderstorms										
Continue educational campaigns regarding severe thunderstorms, primarily during outdoor activities.										
Incorporate severe weather public information campaigns to all parents of children enrolled in recreation programs	2020	Ongoing		Education and Awareness Programs	Low			parks and recreation	200	General Fund/Park Fund
Provide signage at Cass County Fair regarding Everbridge and other means of weather alerts, encouraging patrons to utilize these systems.	2020	New		Unspecified	Unspecified			emergency management	300	Cass County Fair
Ensure warming centers and critical services can continue operations in the event of prolonged power outages.										
Assess availability of fuel resources in the event of power outages.	2020	New		Unspecified	Unspecified			emergency management	low	General Fund
Coordinate with critical facilities to assess back up generation capabilities including how long generators are operable.	2020	New		Unspecified	Unspecified			emergency management	low	General Fund
Evaluate number of emergency generators available for warming centers.	2020	Ongoing		Structure and Infrastructure Projects	Medium			emergency management	100	General Fund
Evaluate the backup generation capacity at each of the Red Cross emergency shelters listed in Pleasant Hill.	2020	New		Unspecified	Unspecified			emergency management		General Fund
Purchase emergency generators for sewer lift stations.	2020	New		Unspecified	Unspecified			public works	600000	Water/Sewer Fund
Purchase generator for emergency warming center (Memorial Building)	2020	New		Unspecified	Unspecified			public works	200000	General Fund
Test the generator for the emergency warming shelter at the Methodist Church.	2020	Ongoing		Structure and Infrastructure Projects	Medium			emergency management	100	General Fund
Reduce the number of trees or tree limbs likely to cause damage during severe winter weather.										
Create a public education campaign regarding tree health and property evaluations.	2020	New		Unspecified	Unspecified			parks and recreation	low	General Fund
Have the City Arborist inventory trees near utility poles.	2020	New		Unspecified	Unspecified			parks and recreation	low	General Fund
Identify nearest emergency shelter for public outdoor facilities.										
Identify shelters for public outdoor facilities.	2020	New		Unspecified	Unspecified			parks and recreation	low	General Fund

Raymore 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deferred	This goal continues to be deferred.	Unspecified	Unspecified					
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing	This action is continually promoted through various departments.	Unspecified	Medium	ongoing	Low/no cost mechanism to increase public safety.	emergency management	Low	Unknown
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Completed	This is completed.	Unspecified	Medium	ongoing	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.		Medium	Unknown
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred	Lack of resources continue to make this a deferred resource.	Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	We have finished all identifications necessary and will be working to complete all appropriate signage as soon as possible. Especially for our new buildings.	Unspecified	Medium	12/1/2017	Low/no cost mechanism to increase public safety.	emergency management	Low	Unknown
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred	This item is still a budgetary constraint at this time.	Unspecified	Unspecified					
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing	we continue to develop individual preparedness materials that include safe rooms. Additionally, I attended the safe room construction class in order to better serve the community in answering questions.	Unspecified	Medium	ongoing	No/low cost mechanism to increase public safety.	emergency management	Low	Unknown
Floods										
Enhance public awareness and education efforts related to flooding.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing	We also market the NFIP.	Unspecified	Medium	Ongoing (as new homes and businesses continue)	Will reduce recovery costs and ensure compliance with NFIP.	floodplain management	Low	Unknown
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing	We also have city ordinances restricting building in a floodplain.	Unspecified	Low	ongoing	Will reduce floodplain vulnerability and increase city greenspace.	planning, public works	Unknown	Unknown
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing	We have a designated stormwater plan.	Unspecified	Medium	ongoing	Will prevent flooding for moderate costs	planning, public works	Medium	Unknown
Severe Thunderstorms										
Ensure local alert systems are in place and operational during severe weather.										
Continue to promote the Code Red alert notification system within the City of Raymore and the county	2015	Ongoing	We use Everbridge now, not Code Red.	Education and Awareness Programs	Medium	ongoing	Low cost mechanism for mass alerting of citizens to danger.	emergency management	0	N/A
Maintain the city's siren system in good working order and continue to assess the coverage those sirens provide	2015	Ongoing	We continue to contract with Blue Valley Public Safety for this issue.	Structure and Infrastructure Projects	Medium	ongoing	Will sustain primary warning capability of the city.	emergency management	0	N/A
Establish a current database of Red Cross certified shelters that could be used during severe weather and make that list available to the public.										
Identify all establishments that could be used as shelters. If consented to be a shelter, have Red Cross inspect and certify establishment as a shelter	2015	Ongoing	We have one dedicated (and Red Cross inspected) shelter and are currently in the process of getting a second site inspected.	Structure and Infrastructure Projects	Medium	ongoing	Low cost mechanism to increase public safety.	emergency management	0	N/A
Work with neighboring communities, MEMC, and MARC on creating an updated shelter database for the entire region	2015	Ongoing	We need to continually get an updated list from MARC of area shelters.	Local Plans and Regulations	Medium	ongoing	Low cost mechanism to increase public safety.	emergency management	0	N/A
Increase the public's awareness of the dangers of severe thunderstorms and the need to shelter immediately.										
Distribute severe storms safety literature at public events and launch announcements through social media and the city website	2015	Ongoing	We offer a robust platform for severe weather information including literature, Facebook, Twitter, city website, and outside online resources.	Education and Awareness Programs	Medium	ongoing	Low cost mechanism to increase public safety.	emergency management	0	N/A

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Promote storm spotter training for the entire region	2015	Ongoing	We continually promote the annual storm spotting class through the National Weather Service.	Education and Awareness Programs	Low	ongoing	Free program that benefits public awareness and city alerting procedures.	emergency management	0	N/A
Promote the advantages of identifying, creating, or building a safe room to be used during severe weather.										
Continue to register storm shelters as they are installed in homes and businesses throughout the community	2015	Ongoing	We maintain a safe room registration list within our Police Department.	Local Plans and Regulations	Low	ongoing	Low cost mechanism to increase public safety.	emergency management	0	N/A
Work with residents and business partners by providing information on safe rooms and shelters when requested	2015	Ongoing	This would be the same as above in the Tornado section.	Education and Awareness Programs	Low	ongoing	Low cost mechanism to increase public safety.	emergency management	0	N/A

Clay County 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2015	Deferred		Education and Awareness Programs	Unspecified					
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Low/no cost mechanism to increase public safety.	planning	Low	Unknown
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Tax incentives could defray otherwise high costs for developing safe rooms and will likely lead to greater acceptance.	planning	Medium	Unknown
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2020	Ongoing		Education and Awareness Programs	High	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	Low	Unknown
Ensure Alert, Warning and Mass Notification systems are in place and operational.										
Conduct monthly test of outdoor siren warning system.	2020	Ongoing		Local Plans and Regulations	High	ongoing	Low cost preventative maintenance ensures operational reliability.	emergency management	0	
Continue outdoor siren routine maintenance program	2020	Ongoing		Structure and Infrastructure Projects	High	Ongoing	Low cost preventative maintenance ensures operational reliability.	emergency management	1000	EM budget
Evaluate the need for new storm sirens to ensure that all parts of the county, particularly the unincorporated area where homes are located may be warned during severe weather.	2020	ongoing		Structure and Infrastructure Projects	High	Ongoing		emergency management		FEMA grant and EM budget

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Encourage use of mass notification systems such as Nixle	2020	Ongoing		Education and Awareness Programs	High	Ongoing	No cost mechanism to increase public alert and warning.	emergency management	0	
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2020	Ongoing		Structure and Infrastructure Projects	High	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	Low	Unknown
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Low/no cost mechanism to increase public safety.	public works, planning	Low	Unknown
Provide education and awareness.										
Post educational info to media and social media sources	2020	Ongoing		Education and Awareness Programs	High	Ongoing	No cost mechanism to increase public awareness and education.	emergency management	Low	
Floods										
Discourage new development in floodplains and flood-prone areas.										
Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2015	Deferred		Unspecified	Unspecified					
Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2015	Deferred		Unspecified	Unspecified					
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2015	Deferred		Unspecified	Unspecified					
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2020	Ongoing		Education and Awareness Programs	Low	Ongoing		emergency management, floodplain manager	Low	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2020	Ongoing		Education and Awareness Programs	High	Ongoing	Low cost mechanism to increase public awareness for floodplain management.	emergency management	Low	county and city government
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2020	Ongoing		Structure and Infrastructure Projects	High	Ongoing	No/ or low cost to implement and require little staff support.	public works, floodplain manager	Low	Unknown
**Review plans and update as needed	2020	Ongoing		Local Plans and Regulations	High	Annual	Low cost mechanism to ensure response plans are in place and feasible.	public works, floodplain manager	0	
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2020	Ongoing		Local Plans and Regulations	High	Ongoing	No/ or low cost to implement and require little staff support.	public works, floodplain manager	Low	municipal funds
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2020	Ongoing		Structure and Infrastructure Projects	High	Ongoing	No/ or low cost to implement and require little staff support.	public works, floodplain manager	Low	Unknown
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Stream gauges are relatively cost effective measures to warn of flooding events and implement mitigation measures.	public works, floodplain manager	Medium	county and municipal funds
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Will ensure that citizens are prepared real time for flood events.	public works, floodplain manager	Low	county and city government
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2020	Ongoing		Local Plans and Regulations	Unspecified	Ongoing	No/ or low cost to implement and require little staff support.	public works, floodplain manager	Low	
Improve flood hazard assessments and flood mapping.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2015	Deferred		Unspecified	Unspecified					
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2015	Deferred		Unspecified	Unspecified					
Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2015	Deferred		Unspecified	Unspecified					
Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2015	Deferred		Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2015	Deferred		Unspecified	Unspecified					
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2015	Deferred		Unspecified	Unspecified					
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Low cost mechanism to improve floodplain management on local and regional levels.	emergency management	Low	government source
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2015	Deferred		Unspecified	Unspecified					
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2015	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2015	Deferred		Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	Low	county and municipal funds
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing		Local Plans and Regulations	High		Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	floodplain manager		
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2015	Deferred		Unspecified	Unspecified					
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2015	Deferred		Unspecified	Unspecified					
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2015	Deferred		Unspecified	Unspecified					
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2015	Deferred		Unspecified	Unspecified					
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2015	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2015	Deferred		Unspecified	Unspecified					

Excelsior Springs 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		building code official		NO FUNDS
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		building code official		NO FUNDS
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		building code official		NO FUNDS
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing	Lack of resources	Education and Awareness Programs	Unspecified	NOT COMPLETED		building code official		NO FUNDS
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		planning; public works		NO FUNDS
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.	2020	Ongoing	Identified for new plan	Education and Awareness Programs	Unspecified	NOT COMPLETED		planning; public works		NO FUNDS
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		planning; public works		NO FUNDS
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing	Lack of resources	Education and Awareness Programs	Unspecified	NOT COMPLETED		emergency management		NO FUNDS
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Deferred	Most of our city that is above ground, there is not enough space to put in underground lines.	Local Plans and Regulations	Unspecified	NOT COMPLETED				NO FUNDS

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Deferred	Ameren MO is our local provider, they are continually looking into the issue.	Local Plans and Regulations	Unspecified	NOT COMPLETED				NO FUNDS
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Ongoing	This is an ongoing process.	Local Plans and Regulations	Unspecified	NOT COMPLETED		public works		NO FUNDS
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		public works		NO FUNDS
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		public works		NO FUNDS
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind including Hall of Waters and schools in the city.	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		public works	high	Make application to FEMA for grant
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing	Lack of resources	Education and Awareness Programs	Unspecified	NOT COMPLETED		emergency management		NO FUNDS
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred	Lack of resources	Education and Awareness Programs	Unspecified	NOT COMPLETED				NO FUNDS
Increase public Education/ Awareness and Readiness for Tornadoes and Severe Thunderstorms										
Host a mock drill with all city officials.	2015	Ongoing	Needs to be completed with ever changing city officials.	Education and Awareness Programs	High	Year	Low cost mechanism to increase public safety.	emergency management	0	N/A
Host a public education event.	2015	Ongoing	Resources for this event is limited, minor ongoing education continues.	Education and Awareness Programs	Medium	2+ years	Low cost mechanism to increase public safety.	emergency management	0	N/A
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Continue to implement city regulations as participation in the federal flood insurance program.	2020	Ongoing	Part of city's planning and zoning process.	Local Plans and Regulations	High	ongoing	part of city operation	floodplain manager	not specified	general revenue
Enhance public awareness and education efforts related to flooding.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing	Lack of resources	Education and Awareness Programs	Unspecified	NOT COMPLETED		emergency management		NO FUNDS
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing	Lack of resources	Education and Awareness Programs	Unspecified	NOT COMPLETED		emergency management		NO FUNDS
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		floodplain manager		NO FUNDS
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		floodplain manager		NO FUNDS
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		floodplain manager		NO FUNDS
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Completed		Structure and Infrastructure Projects	Unspecified					
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing	Lack of resources	Education and Awareness Programs	Unspecified	NOT COMPLETED		emergency management		NO FUNDS
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		floodplain manager		NO FUNDS
Improve flood hazard assessments and flood mapping.										
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Local Plans and Regulations	Unspecified	NOT COMPLETED		planning, public works		NO FUNDS

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		planning, public works		NO FUNDS
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deferred	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED				NO FUNDS
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		emergency management		NO STAFF
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		public works, parks and recreation		NO STAFF
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		floodplain manager		NO STAFF
**Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		public works, planning		NO STAFF
**Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified	NOT COMPLETED		floodplain manager		NO STAFF
**Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Completed		Education and Awareness Programs	Unspecified					
**Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Completed		Education and Awareness Programs	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing	Lack of resources	Local Plans and Regulations	Unspecified	NOT COMPLETED		floodplain manager		NO STAFF
Reduce flood risk to city.										
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Completed		Structure and Infrastructure Projects	Unspecified					
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented.	2010	Ongoing	Lack of resources	Education and Awareness Programs	Unspecified			emergency management		
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing	Lack of resources	Structure and Infrastructure Projects	Unspecified			public works, parks and recreation		
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Completed		Structure and Infrastructure Projects	Unspecified					
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats.	2010	Deferred	Lack of resources	Structure and Infrastructure Projects	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Completed		Local Plans and Regulations	Unspecified					
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Completed		Local Plans and Regulations	Unspecified					
Dam Failures										
Enhance public awareness of the hazards associated with dam failures, as well as mitigation and preparedness activities.										
Identify area at risk for Crystal Lakes to provide updates as to condition of dam and ensure residents at risk have evacuation access.	2020	Ongoing	New	Education and Awareness Programs	Low		Low cost mechanism to increase public safety.	public works		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Heat Waves										
Ensure local government and human service agencies are aware of A/C facilities across area that can be used as shelters in the event of a heat wave.										
Identify cooling centers in the city.	2020	Ongoing	New	Local Plans and Regulations	Low		Low cost mechanism to increase public safety.	emergency management		
Severe Winter Weather										
Increase winter weather response readiness										
Identify emergency snow routes.	2020	Ongoing	New	Local Plans and Regulations	Medium			public works		
Ensure local government and human service agencies are aware of facilities across area with backup power or generators that can be used as shelters in the event of severe winter weather										
Identify potential sites for emergency shelters.	2020	Ongoing	New	Local Plans and Regulations	Low		Low cost mechanism to increase public safety.	emergency management		

Gladstone 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Deferred		Unspecified	Unspecified					
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	planning, building codes	Unknown	budget
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing		Unspecified	Medium	NA	Tax incentives could defray otherwise high costs for developing safe rooms and will likely lead to greater acceptance.	planning, building codes	NA	NA
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred		Unspecified	Unspecified					
Provide more public information on preparing for a disaster.										
Public Education and EOP updates	2015	Ongoing		Education and Awareness Programs	High	Year	Low/no cost mechanism to increase public safety.	emergency management		EMPG
Floods										
Enhance public awareness and education efforts related to flooding.										
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Deferred		Unspecified	Unspecified					
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing		Unspecified	Medium	Ongoing	No/ or low cost to implement and require little staff support.	floodplain manager	Low	Unknown
Improve flood hazard assessments and flood mapping.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Deferred		Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Deferred		Unspecified	Unspecified					
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Deferred		Unspecified	Unspecified					
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Deferred		Unspecified	Unspecified					
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					
Severe Thunderstorms										
Increase public disaster preparedness.										
Provide Public Education materials and EOP updates	2015	Ongoing		Education and Awareness Programs	High	Ongoing	Low cost mechanism to increase public safety.	emergency management	Low	EMPG

Kearney 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Completed	The City follows the 2012 IRC and IBC, which has standards for when tempered glass is required during construction.	Unspecified	Low	2014	While may increase building costs, will lead to greater occupant safety		100000	not available at this time
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deferred	Requiring construction of tornado shelters in not currently a high priority.	Unspecified	Low	2020+	Low/no cost mechanism to increase public safety.		3000	annual department budget
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deferred	lack of resources to accomplish this	Unspecified	Low	2020+	Tax incentives could defray otherwise high costs for developing safe rooms and will likely lead to greater acceptance.		Medium	not available at this time
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Completed	The City encourages the use of safe rooms/storm shelters with educational material available online and city hall.	Unspecified	Low	2020+	Low/no cost mechanism to increase public safety.		5000	not available at this time
Ensure public facilities have shelters to accommodate employees and visitors during severe weather events.										
Inspect city hall and police station facilities for use as tornado/severe weather shelters and post visible signage.	2015	Deferred	City hall is utilized as a storm shelter; however we still need to improve signage.	Education and Awareness Programs	High	2022	Low cost mechanism to increase public safety.		2000	departmental budget
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Deferred	City hall is utilized as a storm shelter; however, we still need to improve signage.	Unspecified	Low	2022	Low/no cost mechanism to increase public safety.		3000	annual department budget

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing	The City encourages the use of safe rooms/storm shelters with educational material available online and city hall. New public building construction in the City has only been school district facilities the past 10 years.	Unspecified	Low			code official, planning		
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred	Lack of resources	Unspecified	Low	2020+	Increases safety of existing infrastructure for moderate cost		Medium	not available at this time
Improve emergency response to large scale events										
Create a Community Emergency Response Team program	2015	Ongoing		Education and Awareness Programs	Low	2025	Increases community involvement and disaster preparedness at relatively low cost.	emergency management	Low	Fire District Budget
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Ongoing	The City requires residential construction to be a minimum 3' the base flood elevation.	Unspecified	Unspecified	Ongoing		planning, public works		
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing	The City's website includes flood insurance information	Unspecified	Low	2020	Will reduce recovery costs and ensure compliance with NFIP.	floodplain manager	3000	allocation in annual department budget
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Completed	The City has flood information available at City Hall and city website.	Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Deferred	The City does not have the resources at this time.	Unspecified	Low	2020	No/low cost mechanism to encourage flood preparedness.		5000	seek grants for funding
Implement or improve flood warning systems.										
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing	Police & Fire monitor problem areas and maintain close communication during flooding events	Unspecified	Low	2020	Low cost mechanism to increase public safety.	emergency management	3000	allocation in annual department budget
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing	Police & Fire monitor problem areas and maintain close communication during flooding events	Unspecified	Unspecified	Ongoing		emergency management		
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented jointly.	2010	Ongoing		Unspecified	Low	Ongoing through 2020	Low cost mechanism to improve floodplain management on local and regional levels.	emergency management	Low	annual department budget
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing		Unspecified	Low	Ongoing		planning, public works, parks and recreation	low	
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing	The City elevated electrical controls at the east side lift station. Sewer plant expansion improvements have been located outside the floodplain.	Unspecified	Medium	Ongoing		public works	high	
**Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Ongoing	The City elevated electrical controls at the east side lift station. Sewer plant expansion improvements have been located outside the floodplain.	Unspecified	Medium	2025	While initial cost is high, will reduce recovery and replacement costs.	floodplain manager	100000	water and sewer revenues, grants

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Reduce the impact of floodwaters on residential properties.										
Pass a stream buffer ordinance	2015	Deferred	Staff anticipates this to be approved within the next five years.	Natural Systems Protection	High	2025	Low cost mechanism to enforce floodplain management.		500	departmental budget
Severe Thunderstorms										
Ensure operability of public facilities during severe weather events										
Retrofit existing city facilities with backup power - city hall, water wells	2015	Ongoing	Backup power was installed at the water plant in 2016, and installed at the sewer plant and Jamespoint lift station in 2020. Remaining facilities include the east side lift station, water wells, and city hall.	Structure and Infrastructure Projects	High	2025	Would ensure continuity of government operations and public services.	public works	300000	City budget

Lawson 2020 Mitigation Strategy (New Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Create a safe storm shelter for people at public campgrounds and for city lake users.										
Identification and Planning	2020	New	Public safety issue has been identified but an affordable solution has yet to be found.	Structure and Infrastructure Projects	High	Unknown		planning, public works, parks and recreation	Unknown	None
Create a safe storm shelter in the downtown district to house members of the community living in older homes or without basements.										
Identification and Planning	2020	New	Public safety issue has been identified but an affordable solution has yet to be found	Structure and Infrastructure Projects	High	Unknown		emergency management, public works	Unknown	None
Create municipal storm shelter plan and purchase required supplies to house evacuees locally.										
Identification and Planning	2020	New	The community safety issue has been identified but an affordable solution has yet to be found.	Local Plans and Regulations	Medium	Unknown		emergency management, public works	Unknown	None
Develop and implement a continuity of service response plan to ensure continued vital functioning of municipal government.										
Identification and Planning	2020	Ongoing	Operational challenges have been identified and are being examined in follow up meetings.	Local Plans and Regulations	Medium	Unknown		city administration, emergency management	Unknown	Municipal revenues
Establish a safe storm shelter at the Southwest Elementary School in partnership with the Lawson School District.										
None at this time, assist only as needed	2020	Deferred	Assist the Lawson School District as needed with establishing a safe storm shelter. The School District has taken primary responsibility for this plan.	Structure and Infrastructure Projects	Low	Unknown			Unknown	None
Floods										
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing		Local Plans and Regulations	Unspecified		Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	Low	Local

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing		Local Plans and Regulations	Unspecified		Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	floodplain manager	Low	Local
Execute additional storm water drainage plans as listed in the city's Storm Water Master Plan.										
Execution of Plan	2020	Undetermined	Multiple storm drainage projects have been identified and are in execution as funding is obtained	Unspecified	Unspecified	ongoing		public works		Municipal revenues and local bonds
Execute north fork of Fishing River Flood Plain mitigation project to lessen flood plain impact for the surrounding community.										
Preliminary planning	2020	Ongoing	Discussion with public concerning projectPossible preliminary engineering	Structure and Infrastructure Projects	Medium	Unknown		public works	Unknown	None
Improve in house ability to maintain and improve existing storm water drainage system by purchasing additional equipment.										
Identification and Planning	2020	Ongoing	The need for additional equipment has been identified to allow for more in house work projects.	Structure and Infrastructure Projects	High	ongoing		public works	Unknown	None
Preliminary planning	2020	Ongoing	Identify equipment that would aid in maintenance of current stormwater system and procure	Other	High	Unknown		public works	Unknown	None
Improve natural drainage creek to mitigate storm water flooding between North Pennsylvania and North Raum street.										
Identification and Planning	2020	Ongoing	Storm water flooding issue has been identified but project funding has not been located to move forward with mitigation.	Local Plans and Regulations	Medium	Unknown		public works	Unknown	None
Replace wooden bridge on North Raum Street to allow for a norther evacuation route out of town capable of carrying the weight of fire trucks.										
Engineering work has been completed and an approved plan was selected.Plan is submitted to UP railroad for their review and approval	2020	Ongoing	A wooden bridge (last refurbished in 1940) owned privately by Union Pacific which is no longer rated for fire truck or school bus weights.	Unspecified	High	Unknown		public works	3200000	20% funding provided by the railroad.
Storm water drainage improvements near 8th Terrace.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Preliminary planning	2020	Ongoing	Discussion with public concerning project. Possible preliminary engineering	Unspecified	Unspecified	Unknown		public works	Unknown	None
Storm water drainage improvements near Cardinal Circle/Nolker Drive.										
Preliminary planning	2020	Ongoing	Discussions with public on project. Possible preliminary engineering	Structure and Infrastructure Projects	Medium	Unknown		public works	Unknown	None
Storm water drainage improvements near Milwaukee Street.										
Engineering and construction	2020	Ongoing	Engineering is nearly completed. Project will be going out for bid in Spring 2020. Construction to begin Summer 2020	Structure and Infrastructure Projects	High	Winter 2020		public works	400000	2016 Bond
Severe Thunderstorms										
Establish safe storm shelter for use as an evacuation point for the municipal pool complex.										
Identification and Planning	2020	Ongoing	Public safety issue has been identified but an affordable solution has yet to be found.	Structure and Infrastructure Projects	High	Unknown		parks and recreation	Unknown	None
Severe Winter Weather										
Establish a transportation plan to evacuate at risk individuals and create a municipal warming shelter.										
Identification and Planning	2020	Ongoing	Public safety threat do to long term power outages have been identified. Planning to meet this threat is ongoing but funding has yet to be located.	Local Plans and Regulations	Medium	ongoing		emergency management, public works	Unknown	None
Heat										
Institute a severe heat response by purchasing in home air conditioners and establishing public cooling centers.										
Identification and Planning	2020	Ongoing	The need for in home cooling and local cooling centers has been identified but additional funding has yet to be found.	Local Plans and Regulations	Medium	ongoing		emergency management, public works	Unknown	None

Liberty 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Continue to educate the public about the importance of having a weather radio in their home										
Outreach at local events	2020	Ongoing	Community outreach using CERT volunteers to distribute information to the public at local events.	Education and Awareness Programs	High	Ongoing	Low cost mechanism to increase public safety and avoid loss of life.	emergency management	Low	City budget
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2020	Ongoing	Ensure building codes pertaining to wind damage mitigation requirements are being followed	Unspecified	High	Ongoing	none	emergency management	none	none
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2015	Deferred		Unspecified	Unspecified					
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2015	Deferred		Unspecified	Unspecified					
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2020	Ongoing		Education of stakeholders in meetings such as our Safe Schools Task Force.	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	Low	School district
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2020	Ongoing	All new residential and commercial construction has buried electrical service lines.	Plan reviews are completed for all building projects within the city to ensure compliance	High	Ongoing	none	building code official	none	none
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2015	Deferred	Lack of resources and funding	Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards.										
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2020	Ongoing	While a low cost item we lack resources and funding to incorporate into public structures	The city will follow its own building and fire codes that require this	Low	Ongoing	Low/no cost mechanism to increase public safety.	planning, building code	Low	none at this time

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2015	Deferred	Lack of resources and funding	Unspecified	Unspecified					
Improve storm warning capabilities.										
Continue to hold monthly siren tests	2020	Ongoing		Local Plans and Regulations	High	March-Oct	No cost mechanism to ensure sirens operate effectively.	emergency management	None	N/A
Continue to upgrade outdoor warning sirens as funding allows	2020	Ongoing	Lack the necessary funding. Will have to seek grant opportunities in order to replace aging outdoor sirens as well as adding sirens to areas that have recently opened for development.	Structure and Infrastructure Projects	Medium	Will have to seek our and apply for grants to complete	Avoid loss of life	emergency management	\$175,000	City budget or more than likely grants
Continue to work with cable providers to ensure protocols and policies in place to allow for emergency interruption warnings and messages.	2015	Deferred	Lack the resources and funding for cable interrupt services.	Education and Awareness Programs	Medium	Ongoing	Low cost mechanism to increase public safety and avoid loss of life.		Low	Unknown
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2020	Ongoing	Lack the resources and funding for development.	Education and Awareness Programs	Low	Ongoing	Distribution of materials is a low/no cost mechanism to increase public safety.	emergency management	Low	City general fund
Partner w/ trade orgs. to conduct safe room workshops.	2015	Deferred	Lack of resources	Unspecified	Unspecified					
Floods										
Discourage new development in floodplains and flood-prone areas.										
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2015	Deferred	The city does not allow development in flood plains or flood prone areas	Unspecified	Unspecified					
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2015	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2020	Ongoing	Community outreach using CERT volunteers to distribute information to the public at local events.	Education and Awareness Programs	Low	Ongoing	Low cost mechanism to increase flood preparedness	emergency management	Low	none at this time
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2020	Ongoing	Community outreach using CERT volunteers to distribute information to the public at local events.	Education and Awareness Programs	medium	Ongoing		emergency management	n/a	none at this time
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2015	Deferred	Lack of funding and the city currently does not have any repetitive flood loss properties	Unspecified	low					
Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2015	Deferred	Lack of resources	Unspecified	Unspecified					
With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2015	Deferred	Lack of resources	Unspecified	Unspecified					
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2020	Ongoing	The city currently does not have any repetitive flood loss properties.	Unspecified	Low	Ongoing	No/ or low cost to implement and require little staff support.	floodplain manager	Low	none at this time
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2015	Deferred		Unspecified	Unspecified					
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2015	Deferred		Unspecified	Unspecified					
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2015	Deferred		Unspecified	Unspecified					
Improve flood hazard assessments and flood mapping.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2020	Ongoing	The city utilizes GIS data from FEMA and the Army Corp of Engineers.	Have used the data to identify potential risks to the community	High	Ongoing	low	planning, public works	Low	City budget
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2020	Ongoing		Unspecified	Low	Ongoing, updating as needed	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	planning, public works	Low	General Fund
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2020	Ongoing		Unspecified	Low	Ongoing, updating as needed	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	planning, public works	Low	General Fund
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2020	Ongoing		Unspecified	Low	Ongoing	Free technical assistance to improve floodplain management	planning, public works	Low	General Fund
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2015	Deferred	The city utilizes GIS data from FEMA and the Army Corp of Engineers.	Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2020	Ongoing		Unspecified	Low	Ongoing	n/a	planning, parks and recreation, public works		
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2020	Ongoing	The city follows regional stormwater guidelines issued by the MARC	Unspecified	High	Developers are required to follow regional stormwater management guidelines	Costs are borne by developers	planning, parks and recreation, public works	n/a	n/a
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented	2020	Ongoing	The city continues to participate in regional stormwater management practices	Unspecified	Low	Ongoing	Low cost mechanism to improve floodplain management on local and regional levels.	public works, emergency management	Low	none at this time

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2015	Deferred	Lack of resources	Unspecified	Unspecified					
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2015	Deferred	Lack of resources and funding. The city currently does not have any flood prone properties	Unspecified	Unspecified					
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2015	Deferred	Lack of resources and the city currently does not have any flood prone properties	Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing		Unspecified	Low	Ongoing, updating as needed	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	Low	none at this time
Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing		Unspecified	Low	Ongoing	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	floodplain manager	Low	none at this time
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2015	Deferred	Lack of resources and funding. The city currently does not have any flood prone properties	Unspecified	Unspecified					
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2015	Deferred	Lack of resources and funding. The city currently does not have any flood prone properties	Unspecified	Unspecified					
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2015	Deferred	Lack of resources and funding. The city currently does not have any flood prone properties	Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2015	Deferred	Lack of resources and funding. The city currently does not have any flood prone properties	Unspecified	Unspecified					
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2015	Deferred	Lack of resources and funding. The city currently does not have any flood prone properties	Unspecified	Unspecified					
Severe Thunderstorms										
Description Continue to monitor weather situation and provide warnings through Public relations department										
Provide warning through public relations	2020	Ongoing	PR department is active in providing mass text and social media alerts.	Education and Awareness Programs	High	ongoing	Avoid loss of life	emergency management	Unknown	Unknown

Mosby 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing		Unspecified	Unspecified			public works	Low	Local
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Deferred	Lack of resources	Unspecified	Unspecified					
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deferred	Lack of resources	Unspecified	Unspecified					
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deferred	No new public facilities anticipated	Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards.										
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Deferred	No new public facilities anticipated	Unspecified	Unspecified					
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing	Materials available if requested	Unspecified	Medium	Ongoing	Educating public about ways to protect themselves from hazards so they remain safe	emergency manager	0	NA
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred	Lack of resources	Unspecified	Low		public safety		0	NA
Floods										
Enhance public awareness and education efforts related to flooding.										
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing	Materials available if requested	Unspecified	Medium	Ongoing	Low cost mechanism to educate residents.	emergency manager	0	NA

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Deferred	Lack of resources	Unspecified	Unspecified					
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	Medium	Ongoing	Prevent future flooding of properties that have experienced past damage from floods	floodplain manager	36000	FEMA Buy Out
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing		Unspecified	Medium	Ongoing	Preventing future flooding of properties that have had history of flood damage	floodplain manager	0	City
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing		Unspecified	Medium	Ongoing	continually looking for ways to prevent damages to residential properties	floodplain manager	\$50 per month	City budget
Implement or improve flood warning systems.										
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing		Unspecified	Unspecified	Ongoing		emergency manager		
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing		Unspecified	Medium	Ongoing	Allows for coordination of emergency management services in case evacuations or other actions are necessary	emergency manager	less than \$100	None
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing		Unspecified	Low	Ongoing	City would be able to take property that repeatedly floods and use it for recreational purposes	city board of aldermen	Unknown	City/FEMA

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing		Unspecified	Low	Ongoing	City would be able to remove problematic properties and gain a park or open space - need to find out what is allowable on property	city board of aldermen	Unknown	City budget/FEMA grant
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Deferred		Unspecified	Unspecified					
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Unspecified	Medium	Ongoing	Provide financial protection for property owners	floodplain manager	depends on cost of insurance	City budget
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	High	Ongoing	Removing structures that repetitively get flooded.	floodplain manager	Depends on cost of property	FEMA buyout program
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing		Unspecified	Unspecified			floodplain manager	Low	Local
Work with County to explore funding to demolition, retrofit and/or replace damaged bridges in and around city.	2020	New		Structure and Infrastructure Projects	High	Ongoing	Removal and/or upgraded bridges will reduce flooding and increase public safety during floods and emergencies.	city board of aldermen	High	Local and Grants

North Kansas City 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing		Unspecified	Unspecified	Ongoing		emergency management		
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deferred	Lack of Staffing	Unspecified	Unspecified					
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deferred	Lack of Funding	Unspecified	Unspecified					
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Deferred	Lack of Funding	Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high winds	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	The cost of installing a tornado shelter in the fire station will be \$5600.00 to install the shelter. Benefit is to the Fire and Police personnel whose duty assignment places them in this station and patrol area	emergency management, public works	5600	Budgeted
Increase public awareness and understanding the benefits of "safe rooms."										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Develop and distribute informational materials on safe rooms	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	The cost of installing a tornado shelter in the fire station will be \$5600.00 . The benefit is that it provides a shelter from tornados independent of the existing structure and will serve as an example to be used when doing public education on tornado shelters	emergency management	5600	Budgeted
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing		Unspecified	High	Ongoing	Low cost mechanism to increase public safety.	emergency management	Minimal	budget
Increase public awareness and understanding of severe weather events and safe practices.										
The North Kansas City Fire Department has become an official Weather Ready Nation Ambassador and is working to provide consistent information about severe weather through social media	2020	Ongoing		Education and Awareness Programs	High	3- months	little to no cost	fire department	minimal	budget
Floods										
Conduct special education events such as flood mitigation and preparedness.										
Conduct special public education events	2015	Deferred	Waiting for approval of a new flood evacuation plan from our engineer.	Education and Awareness Programs	High	12 months	Since the training will be conducted by existing personnel and the media materials will come from FEMA there is no monetary outlay, the benefits will be to the at risk population and to the businesses located in flood prone areas.		N/A	Budgeted
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Complete inspection of storm sewers in the Paseo Industrial District (PID)	2020	Ongoing	We had severe damage from 2019 floods this will identify future problem areas	prevention	High	1-year	Cost of inspection prior to damage is much less than repairs	public works	\$50,000	Budgeted
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Deferred	Not relevant to the City of North Kansas City.	Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing		Local Plans and Regulations	Unspecified		Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	Low	Local
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2015	Ongoing	We currently participate in NFIP	Local Plans and Regulations	High	Ongoing	There is no cost to become part of the NFIP or CRS systems. Benefits are to the Residents and Businesses who take advantage of the programs	floodplain manager	No Cost	N/A

Smithville 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Deferred		Unspecified	Unspecified					
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Deferred		Unspecified	Unspecified					
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Deferred		Unspecified	Unspecified					
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Deferred		Unspecified	Unspecified					
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deferred		Unspecified	Unspecified					
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deferred		Unspecified	Unspecified					
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Deferred		Unspecified	Unspecified					
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Deferred		Unspecified	Unspecified					
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Deferred		Unspecified	Unspecified					
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred		Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2020	Ongoing		Structure and Infrastructure Projects	Medium	Next 5 Years	No cost mechanism to increase public safety.	public works	Low	Local
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Deferred		Unspecified	Unspecified					
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2020	Ongoing		Structure and Infrastructure Projects	Medium	Next 5 Years		public works	High	Local
Increase emergency shelter capacity.										
Develop relationships with area churches, library and senior center for use of facilities if needed as a shelter.	2015	Ongoing		Education and Awareness Programs	Medium	Ongoing	No cost mechanism to increase public safety.	emergency management	None	N/A
Hold discussions with school district to obtain permission to use Performing Arts Center as a tornado shelter	2015	Ongoing		Education and Awareness Programs	Medium	Ongoing	No cost mechanism to increase public safety.	emergency management	None	N/A
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Deferred		Unspecified	Unspecified					
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred		Unspecified	Unspecified					
Increase public safety alert and warning mechanisms.										
Continue social media use. Provide officers training on how to use social media to send info on weather incidents	2015	Ongoing		Education and Awareness Programs	High	Ongoing	No cost mechanism to increase public safety.	emergency management	None	N/A
Provide officers on-going training in use of the tornado siren system.	2015	Ongoing		Education and Awareness Programs	High	Ongoing	No cost mechanism to increase public safety.	emergency management	None	N/A
Use social media to provide community notice of upcoming weather related training and free weather radios.	2015	Ongoing		Education and Awareness Programs	Medium	Ongoing	No cost mechanism to increase public safety.	emergency management	None	N/A
Floods										
Discourage new development in floodplains and flood-prone areas.										
Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Deferred		Unspecified	Unspecified					
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Deferred		Unspecified	Unspecified					
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Deferred		Unspecified	Unspecified					
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2020	Deferred		Unspecified	Unspecified					
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Deferred		Unspecified	Unspecified					
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2020	Ongoing	More information is needed to initiate this effort	Unspecified	Unspecified			floodplain manager	Low	Local
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Deferred		Unspecified	Unspecified					
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Deferred		Unspecified	Unspecified					
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Deferred		Unspecified	Unspecified					
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Deferred		Unspecified	Unspecified					
Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Deferred		Unspecified	Unspecified					
Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Deferred		Unspecified	Unspecified					
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deferred		Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Deferred		Unspecified	Unspecified					
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Deferred		Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing		Local Plans and Regulations	Unspecified	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	Low	Local
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing	We currently participate in NFIP	Local Plans and Regulations	High	Ongoing	There is no cost to become part of the NFIP or CRS systems. Benefits are to the Residents and Businesses who take advantage of the programs	floodplain manager	No Cost	N/A
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Deferred		Unspecified	Unspecified					
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Deferred		Unspecified	Unspecified					
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Deferred		Unspecified	Unspecified					
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					

Fishing River Fire Protection District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Increase public awareness and understanding the benefits of "safe rooms"										
Work with housing subdivisions to provide residents with educational materials about tornadoes and keeping safe.	2015	Ongoing	continuing working with the subdivisions in educating about Natural disasters.	Education and Awareness Programs	Medium	Ongoing	Low cost way of increasing safety for homeowners	emergency management	Low	Fire District Budget
Work with schools within jurisdiction to provide students, staff and families educational materials about tornadoes and keeping safe.	2015	Ongoing	continuing working with the school in educating about Natural disasters.	Education and Awareness Programs	High	Ongoing	Low cost way of increasing safety for students, staff, families etc associated with school	emergency management	Low	Fire District Budget
Work with the Liberty Hill Country Club to increase awareness and determine options for safe shelter at that location.	2015	Ongoing	continuing working with the Liberty Hills Country Club in educating about Natural disasters.	Education and Awareness Programs	Medium	Ongoing	Low cost way of increasing safety for those that work and recreate at the Country Club	emergency management	Low	Fire District Budget
Floods										
Encourage and assist with the implementation of levee maintenance practices to prevent levee failure and flooding.										
Provide information to residents in Mosby and Missouri City about flooding, steps they can take to prevent property damage, and evacuation procedures.	2015	Ongoing	Trying to keep the citizens aware of some preventive measures and making them aware of rising water situations.	Education and Awareness Programs	Medium	Ongoing	Low cost way of increasing safety and preventing property damage	emergency management	Low	Fire District Budget
Work with levee districts to coordinate prescribed burn efforts that help maintain the amount of vegetation and debris on the levees.	2015	Ongoing	This is an ongoing procedure.	Natural Systems Protection	Medium	Ongoing	Low cost way of ensuring that prescribed burning efforts take place safely and in ways that ensure the protection of the levees.	emergency management	Low	Fire District Budget
Enhance public awareness and education efforts related to flooding.										
Provide information to residents in Mosby and Missouri City about flooding, steps they can take to prevent property damage, and evacuation procedures.	2015	Ongoing	Continuing to communicate and keeping the cities informed of weather situation and ways to help them to try and reduce damage of flooding.	Education and Awareness Programs	Medium	Ongoing	Low cost and effective way to make sure that residents are aware of and understand the danger of a likely flood	emergency management	Low	Fire District Budget
Implement comprehensive flood warning notifications.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Plan to coordinate door to door flood notification with use of existing siren system.	2015	Ongoing	Continuing to use this procedure along with social media to inform citizens of flooding situations.	Education and Awareness Programs	Medium	Ongoing	Low cost and effective way to make sure that residents are aware of and understand the danger of a likely flood	emergency management	Low	Fire District Budget
e										
Increase public awareness and understanding about the hazards associated with thunderstorms such as lightning strikes and high winds.										
Work with housing subdivisions to provide residents with educational materials about keeping safe and ways to avoid damage during severe thunderstorms.	2015	Ongoing	Continuing working with the subdivisions in educating about natural disasters.	Education and Awareness Programs	Medium	Ongoing	Low cost way of increasing safety for homeowners	emergency management	Low	Fire District Budget
Work with schools within jurisdiction to provide students, staff and families educational materials about ways to keep safe during a thunderstorm.	2015	Ongoing	Continuing working with the school in educating about natural disasters.	Education and Awareness Programs	High	Ongoing	Low cost way of increasing safety for students, staff, families etc associated with school.	emergency management	Low	Fire District Budget
Work with the Liberty Hill Country Club to increase awareness about keeping safe during severe thunderstorms.	2015	Ongoing	Continuing working with the Liberty Hills Country Club in educating about natural disasters.	Education and Awareness Programs	Medium	Ongoing	Low cost way of increasing safety for those that work and recreate at the Country Club.	emergency management	Low	Fire District Budget

Jackson County 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)													
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Applies to Community Assets (New/Existing)	Existing Local Planning Mechanism through which the action was/will be implemented	Primary Agency Responsible for Implementation / Administration	Date for Completion	Cost / Benefit Review	Target Capacity	Estimated Cost (\$)	Funding Source
Tornadoes													
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.													
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2020	Ongoing	The County has designated safety locations in governmental facilities for staff and visitors to shelter in during severe weather events. As a "Storm Ready" Community each facility has an "All-Hazard" weather radio and a method of being contacted by the EOC		High	Existing	Eastern Jackson County has designated shelter /safety locations as part of the Office of Emergency Preparedness function within County ordinances and codes	Department of Emergency Preparedness/ County	Ongoing	Low/no cost mechanism to increase public safety.		Low	County Department general funds and grants
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2020	Ongoing	Continued work with local jurisdictions within the County to implement such regulations.					public works, code officials	Ongoing				
Retrofit or add shelters to existing public facilities or incorporate safe rooms into new public buildings to allow for adequate protection from tornadoes and high wind.	2020	Ongoing	The county continues to try and develop storm shelters in existing public facilities as funding and opportunities become available. As new construction of public facilities is planned, consideration will be given to the addition of safe rooms.		High	Existing	Eastern Jackson County has designated shelter /safety locations as part of the Office of Emergency Preparedness function within County ordinances and codes	Department of Emergency Preparedness/ County	Ongoing	High cost to retrofit existing buildings but can also prevent large number of injuries and fatalities. Some cost could be subsidized by tax incentives and grants		High	Unknown
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.													
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Deleted	The County Continues to review and adopt local building codes to improve the structural and architectural safety of structures		High	New	County Building regulations and Code compliance	Public Works Department	Ongoing	High cost to design and build stronger facilities but can prevent large number of injuries and fatalities. Some cost could be subsidized by tax incentives and grants		Medium	County general funds
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Deleted	The County continues to encourage developers in non-incorporated County areas and local jurisdictional review of building codes / regulations /architectural designs		High	New	County Building regulations and Code compliance	Department of Emergency Preparedness/County and Public Works Department	Ongoing	Low/no cost mechanism to increase public safety.		Low	County general funds
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2020	Ongoing	The County continues to work with contractors in regards to utilizing construction techniques and materials that may minimize tornado/ high wind damage		High	New and Existing	Office of Emergency Preparedness function within County ordinances and codes	Department of Emergency Preparedness/County	Ongoing	Low/no cost mechanism to increase public safety.		Low	County General Funds
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.													

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Applies to Community Assets (New/Existing)	Existing Local Planning Mechanism through which the action was/will be implemented	Primary Agency Responsible for Implementation / Administration	Date for Completion	Cost / Benefit Review	Target Capacity	Estimated Cost (\$)	Funding Source
requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deleted	The County currently does not have regs requiring compliance										
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deleted	The County does not have tax incentives for residential/construction code requirements										
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2020	Ongoing	The Jackson County Department of Emergency preparedness continues to promote the benefits of safe rooms through citizens training in Severe Weather classes at no cost. Also addressed schools districts in Eastern Jackson County and many corporate facilities		High		Office of Emergency Preparedness function within County ordinances and codes	Department of Emergency Preparedness/County	Ongoing	Low/no cost mechanism to increase public safety.		Low	County General Funds
Increase capabilities to provide mass notifications to the public													
Adding "Outdoor Warning Sirens" to increase warning notification coverage for County lake properties / Jacomo/Blue Springs/Longview and assess and install additional sirens as appropriate to warn the public	2020	ongoing		Structure and Infrastructure Projects	Medium	new	Office of Emergency Preparedness function within approved County ordinances and codes	Department of Emergency Preparedness/County and Public Works Department	Ongoing	Would give residents enhanced warnings and improved response coordination but would have a high implementation and maintenance cost.		Medium	County General Funds
Increase public awareness and understanding the benefits of "safe rooms."													
Develop, distribute informational materials on safe rooms.	2020	Ongoing	Implemented through the Counties preparedness educational and outreach program with emphasis on existing shelter facilities located throughout the county	education and Awareness Programs	High	Existing	Office of Emergency Preparedness function within County ordinances and codes	Department of Emergency Preparedness/County	Ongoing	Low/no cost mechanism to increase public safety.		Low	County General Funds
Flooding													
Discourage new development in floodplains and flood-prone areas and improve safety for the traveling public from flash floods across roadways.													
**Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2020	Ongoing	Flood Plan management continues to enforce and recommend changes to meet FEMA requirements and regulations		High	Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plain Management/Public Works	Ongoing	Low/no cost mechanism to increase public safety.		Low	County General Funds
**As low water crossings are identified and evaluated, seek funding to redesign and construction roadway segments to reduce further risks to travelers.	2020	ongoing						public works					
**Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2020	Ongoing	County's Flood Plan manager continues to enforce and recommend changes to meet FEMA requirements and regulations		High	Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plain Management/Public Works	Ongoing	Low/no cost mechanism to increase public safety.		Low	County General Funds

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**Identify low water crossings along roadways in unincorporated Jackson County	2020	Ongoing	In progress; as identified putting up signage	planning	medium			Flood Plain Management/ Public Works/Emergency Preparedness					
and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Deleted	Not a county function										
Enhance public awareness and education efforts related to flooding.													
Encourage home owners and businesses to purchase flood insurance.	2020	Ongoing	The County Office of Emergency Preparedness has several outreach programs to Encourage home owners and businesses to purchase flood insurance.		High	New and Existing	Flood Plain Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plain Management/Public Works	Ongoing	No/low cost mechanism to encourage flood preparedness.		Low	County's general funds and EMPG program grant monies
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2020	Ongoing	The County's Office of Emergency Preparedness and Public Works Departments have on-going program to educate the public about flooding and its associated hazards. This program includes standardized educational materials coordinated with local and regional partners. This initiative includes brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross, NFIP and other organizations.		High	New and Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plan Management/Public Works	Ongoing	No/low cost mechanism to encourage flood preparedness.		Low	County's general funds and EMPG program grant monies
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2020	Ongoing	The County's Office of Emergency preparedness and Public works Departments have on-going program to educate the public about flooding and its associated hazards. This program includes standardized educational materials coordinated with local and regional partners. County department also participate in local, regional, State and national public educational events such as Safety City and Echo- Fest put on by local jurisdictions throughout the county each year.		High	New and Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plan Management/Public Works	Ongoing	No/low cost mechanism to encourage flood preparedness.		Low	County's general funds and EMPG program grant monies
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.													

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**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2020	Ongoing	Repetitive Loss properties in the unincorporated portions of the County in Flood Plain Hazard areas are reviewed for buyout potential.		High	Existing	Public Works and Emergency Preparedness function within approved County ordinances and codes	Public Works / emergency Preparedness	Ongoing	High Initial cost of purchasing property but also high returns by preventing future flooding of properties that have had history of major flood damages		High	Hazard Mitigation Grants
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2020	Ongoing	The County continually tries to identify potential funding sources to mitigate flood losses to repetitive properties. This sources include private, local, state and federal grants.		High	Existing	Public Works and Emergency Preparedness function within approved County ordinances and codes	Jackson County Public Works	ongoing	Low/no cost mechanism to increase public safety and help prevent the high cost of flood damages		Low	Mitigation grants
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2020	Ongoing	County has identified repetitive loss areas and residences and continues to work with them in ways to prevent or reduce future flood losses		High	Existing	Public Works and Emergency Preparedness function within approved County ordinances and codes	Flood Plain Management/ Public Works/Emergency Preparedness	Ongoing	Preventing future flooding of properties that have had history of flood damage		Low	County General funds and EMPG funding/
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2020	Ongoing	County continues to work with local jurisdictions, Public Works and Parks and Rec to assess needs and mitigation options		Medium	New	Public Works and Emergency Preparedness function within approved County ordinances and codes	Public Works and Emergency Preparedness	Ongoing	Low/no cost mechanism to increase public safety and help prevent the high cost of flood damages		Low	County General Funds along with grant funding such as HMPG, PDM, FMA and RFC
Implement or improve flood warning systems.													
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2020	Deferred	Eastern Jackson County utilizes real time weather and USGS real-time water data for local daily stream flow conditions which are operated in cooperation with the USGS.		High	New and Existing	Office of Emergency Preparedness and Public Works Department functions within City ordinances and codes	Public Works Department and Office of Emergency Preparedness	Ongoing	Stream gauges are relatively cost effective measures to warn of flooding events and implement mitigation measures.		Low	County General Funds and EMPG grants
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2020	Deferred	The County uses Flood warning procedures supported by NOAA to acquire real-time flood inundation prediction capability using stream gauge and forecast information.		High	New and Existing	Office of Emergency Preparedness and Public Works Department functions within City ordinances and codes	Public Works Department and Office of Emergency Preparedness	Flood warning procedures supported by NOAA	Will ensure that citizens are prepared real time for flood events.		Low	County General Funds and EMPG grants

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Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2020	Deferred	Eastern Jackson County has real time weather data stations that track local activity on a regular basis		High	New and Existing	Office of Emergency Preparedness and Public Works Department functions within City ordinances and codes	Public Works Department and Office of Emergency Preparedness	Ongoing	Data sharing is a relatively low cost effective measures to warn of flooding events and implement mitigation measures. Sharing of data will improve county floodplain management.		Low	County General Funds and EMPG grants
Improve emergency response during flooding events.													
Develop rapid response teams	2020	Deferred; depend upon region's technical rescue teams for response	Development of specialized teams to help clean-up flooded homes and businesses to reduce flood damages throughout the County.	Planning	Medium	new	Office of Emergency Preparedness and Public Works Department functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	No/low cost mechanism to reduce flood damages		Low	County General Funds and EMPG grants
Improve flood hazard assessments and flood mapping.													
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Deleted	The County currently uses the HAZUS software at for Level One reviews. It is currently exploring the future integration of GIS data to increase the accuracy of flood inundation prediction capabilities in partnership with numerous County departments		High	New and Existing Areas	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plan Management/Public Works	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	County's General Funds
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Deleted	The County currently uses the HAZUS software at for Level One reviews. It is currently exploring the future integration of GIS data to increase the accuracy of flood inundation prediction capabilities in partnership with numerous County departments		High	New and Existing Areas	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plan Management/Public Works	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	County's General Funds
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2020	Ongoing	Although flood hazard areas of the County have been mapped with current FEMA flood map digital data that is integrated into county geo-data on a regular basis. The County continues to review flood hazard areas and incorporate necessary changes as needed.		High	New and Existing Areas	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plan Management/Public Works	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	County's General Funds

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Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deleted	The County currently uses the HAZUS software at for Level One reviews. It is currently exploring the future integration of GIS data to increase the accuracy of flood inundation prediction capability's in partnership with numerous County departments		High	New and Existing Areas	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plan Management/Public Works	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	County's General Funds
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community based on building codes for various jurisdictions and have addressed regularly.													
a. Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2020	Ongoing	The County continues to reduce flooding hazards in the unincorporated portions of the county through ongoing efforts to channel and catch storm water as funding allows		High	Existing	Public Works and Emergency Preparedness function within approved County ordinances and codes	Parks & Rec/Public works/Corps of Engineers	Ongoing	Will prevent flooding for moderate costs		Medium	Mitigation grant funding
b. In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2020	Ongoing	The County will continue to look for funding opportunities to remove targeted repetitive loss properties for use as open space land.		High	New and Existing	Public Works and Emergency Preparedness function within approved County ordinances and codes	Department of Emergency Preparedness/County and Public Works Department	Open	High Initial cost of purchasing property but also high returns by preventing future flooding of properties that have had history of major flood damages		High	Local Jurisdictional funding sources and government incentives
c. Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2020	Ongoing	The County consistently continue to apply for State and Federal grants to support and enhance flood mitigation and prevention programs. Recently walking and bicycle trails have been developed in flood prone area. The county encourages local jurisdictions within the county to do the same. This includes identifying funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.		High	Existing	Local Public Works and Water Pollution Control districts	Public Works	Ongoing	Medium initial cost to preventing future flooding of properties that have had history of flood damage		Medium	County general funds
d. Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2020	Ongoing	The county continues to work with DNR and Conservation groups to implement "Green Plans" and other alternative uses of flood prone areas.		High	Existing	Public Works, Parks & Rec and Emergency Preparedness Department functions within approved County ordinances and codes	Department of Emergency Preparedness/County and Public Works Department	Ongoing	Medium initial cost to preventing future flooding of properties that have had history of flood damage		Medium	County general funds and grants resources

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Applies to Community Assets (New/Existing)	Existing Local Planning Mechanism through which the action was/will be implemented	Primary Agency Responsible for Implementation / Administration	Date for Completion	Cost / Benefit Review	Target Capacity	Estimated Cost (\$)	Funding Source
e. Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2020	Ongoing	The County's Public Works and Emergency Preparedness Departments works with property owners and other stakeholders to develop and implement flood mitigation strategies which promotes protection of fish and wildlife habitats		High	Existing	Public Works and Emergency Preparedness Department functions within approved County ordinances and codes	Department of Emergency Preparedness/County and Public Works Department	Ongoing	Medium initial cost to preventing future flooding of properties that have had history of flood damage		Medium	County general funds and grant applications
f. Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented jointly.	2020	Ongoing	The County has ongoing programs to educate the public about flooding and its associated hazards. These programs include standardized educational materials coordinated with local and regional partners. County Department also participate in local, regional, State and national public educational events put on by the local jurisdictions throughout the County each year.		High	New & Existing	Numerous County Department functions within approved County ordinances and codes	Department of Emergency Preparedness/County	Ongoing	Low/no cost mechanism to increase public safety.		Low	County general funds
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.													
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing	The County continues to maintain up-to-date flood maps and tracks any LOMR etc.		High	New and Existing	Office of Emergency Preparedness and Public Works Department functions within City ordinances and codes	Public Works Department and Office of Emergency Preparedness	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.		Low	City General Funds
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing	The County has adopted the NFIP regulations and continues to participate in the program completing mandatory maintenance as required by program regulations.		High	New and Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Flood Plan Management/Public Works	Ongoing	Will ensure flood insurance is available for homeowners and businesses to control flooding costs.		Low	City General Funds
Reduce flood losses within the County.													
Facilitate river flood gates for Fire Prairie Creek, Levasy, MO	2015	Deleted	Help facilitate the design and implementation of flood gate to prevent flooding events that occur on a regular basis.	Structure and Infrastructure Projects	Medium	new	Office of Emergency Preparedness and Public Works Department functions and Levasy ordinances and codes	City of Levasy and County Department of Emergency Preparedness	Ongoing	No/low cost mechanism to reduce flood damages		Low	County General Funds and EMPG grants
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.													
**Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2020	Ongoing	The County constantly tries to identify potential funding sources to mitigate flood losses to repetitive properties by encouraging owners and businesses to elevate their structures in flood prone areas		High	Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Department of Emergency Preparedness/County and Public Works Department	Ongoing	Initial high cost but prevents future flooding of properties that have had history of high cost flood damage		High	Mitigation grant funding

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Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2020	Ongoing	The County works with property owners and other stakeholders to develop and implement flood mitigation strategies which promotes protection of these items		High	Existing	Emergency Preparedness, Flood Plan management and Public Works implementing FEMA codes and requirements for flood planes	Department of Emergency Preparedness/County and Public Works Department	Ongoing	Low/no cost mechanism to increase public safety.		Low	County general funds and EMPG
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2020	Ongoing	The County encourages utilities to flood proof infrastructure in unincorporated areas and Local Public Works departments are encouraged to mitigating flood prone streams and corresponding facilities at the local level		High	Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Department of Emergency Preparedness/County and Public Works Department	Open	While initial cost is high, will reduce recovery and replacement costs from flooding events		High	Private funding
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2020	Ongoing	All County departments work to reduce flood damages to infrastructure when designing new projects and mitigate current facilities as funding is available.		High	Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Department of Emergency Preparedness/County and Public Works Department	On going	While may increase building and development costs, will reduce significant flood impacts		Medium	NFIP CRS program and grant funding
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Deleted	The County constantly tries to identify potential funding sources to mitigate flood losses to repetitive properties by encouraging owners and businesses to retrofit their structures to prevent flooding.		High	Existing	Flood Plan Management, Public Works and Emergency Preparedness addressing FEMA NFIP requirements	Department of Emergency Preparedness/County and Public Works Department	Ongoing	Initial high cost but prevents future flooding of properties that have had history of high cost flood damage		High	Private Sector and City general funds and/or grant funding
Severe Winter Weather													
Enhance public awareness of severe winter weather mitigation and preparedness activities.													
Collect and disseminate public education materials that address winter weather safety, preparedness and mitigation activities.	2020	Ongoing	The County's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of severe winter weather.		High	Existing	Emergency Preparedness working with relief agencies and United Way and 211	Emergency Preparedness	Ongoing	No/low cost mechanism to increase public safety.		Low	City general funds
Develop and conduct a public education and awareness campaign on properly winterizing homes.	2020	Ongoing	The County's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of severe winter weather. Also as new homeowners are registered they receive preparedness materials.		High	Existing	Emergency Preparedness working with relief agencies and United Way and 211	Emergency Preparedness	Ongoing	No/low cost mechanism to increase public safety.		Low	County general funds and EMPG

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Partner with emergency services, public health and community groups to conduct special public education events, such as a Severe Winter Weather Awareness Day.	2020	Ongoing	The County's Office of Emergency Preparedness has on-going programs to educate the public about "all Hazards" safety including severe winter weather. These programs include standardized educational materials coordinated with local and regional partners. These partners include County Departments, local faith based organizations and many other public and private groups. The Office of Emergency Preparedness also participates in local and regional public educational events such as the Safety City Preparedness show.		High	Existing	Emergency Preparedness and Public Works planning and in place generators for emergency status	Public Works and Emergency Preparedness	Ongoing	No/low cost mechanism to increase public safety.		Low	County general funds
Provide vulnerable populations with winter weather safety, preparedness and mitigation information.	2020	Ongoing	The County's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of severe winter weather.		High	Existing	Emergency Preparedness working with relief agencies, United Way, 211, MEMC to provide assistance	Emergency Preparedness	Ongoing	No/low cost mechanism to increase public safety.		Low	County general funds and EMPG monies
Ensure local governments and human services agencies are aware of facilities across the Kansas City area with generators or emergency power that can be used as shelters in the event of severe winter weather.													
Retrofit otherwise suitable existing facilities with generators for emergency power.	2020	Ongoing	The County has numerous shelters that have back-up power, but the county continues to work with existing and future shelter locations to find ways to retrofit them with emergency power.		High	Existing	Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Fairly high cost installation price but will ensure continuity of shelter operations.		Medium	Unknown
Consider the adoption of policies requiring generators or other emergency power systems in the construction of new public facilities and critical health care facilities like dialysis centers.	2020	Ongoing	The County currently does not have any existing regulations, but continues to try and implement these policies		High	Existing	Emergency Preparedness and Public Works planning and in place generators for emergency status	Public Works and Emergency Preparedness	Ongoing	Fairly high cost program to implement but would help ensure continuity of government operations.		High	Unknown
Increase planning and severe weather coordination between regional partners													
Increase CORE4 participation and coordination efforts	2020	Ongoing	Increase the County's support and coordination efforts with the CORE4 group regarding coordination of severe winter weather warnings, regional decisions and public safety decisions.	Local Plans and Regulations	Medium	New and Existing	Emergency Preparedness and Public Works planning and in place generators for emergency status	Public Works and Emergency Preparedness	Ongoing	No/low cost mechanism to increase public safety.		Low	County general funds
Since traffic accidents account for 70% of injuries related to ice and snow, develop and implement programs to improve road conditions and protect motorists during severe winter weather.													

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Budget for the stockpiling of sand, salt and other materials necessary to reduce or eliminate ice on roadways and improve road conditions.	2020	Ongoing	This expense is outlined in the Public Works budget on a yearly basis and funding amount is reviewed every year.		Low	New	Public Works function within Code of Ordinance	Public Works	Ongoing	Will ensure continued open roadways.		Medium	General Fund
In an effort to reduce the number of people on the roadways during periods of severe winter weather, develop and implement "snow day" plans and policies for non-essential personnel and encourage private sector and non-profit employers in the community to stay off the roads.	2020	Ongoing	Along with NWS, the largest jurisdictions (CORE4) have developed an arrangement to coordinate announcements of such "snow days" for governmental employees and continues to work on educating non-governmental organizations on the hazards of employees on roadways during severe winter weather.		Low	New	Public works and Law Enforcement function within Code of Ordinance	Public Works	Ongoing	Short-term potential lost productivity will be offset by savings from potential employee injury and also reduce traffic and delays that would otherwise occur.		Low	General Fund
Partner with area local governments to establish a mutual aid system for sand, salt and other materials and their delivery resources (i.e., trucks, crews, etc.).	2020	Ongoing	The County works with MoDOT and other jurisdictions		Medium	New	Public Works function within Code of Ordinance	Public Works	Ongoing	Low cost mechanism to cost share and increase availability of sand stockpiles.		Low	General Fund
Work with area local governments and MARC to develop a regional "pool" of sand, salt and other materials necessary to reduce or eliminate ice on roadways.	2020	Deferred	The County Public works Department works with regional partners regarding salt and sand contracts		Medium	New	Public Works function within Code of Ordinance	Public Works	NA	Low cost mechanism to cost share and increase availability of sand stockpiles.		Low	General Fund
Drought													
Ensure plans and procedures addressing local drought response, drought mitigation and long-term water planning are developed.													
Develop local procedures implementing the provisions of the Missouri Drought Plan.	2020	Ongoing	The County is constantly utilizing local, state and federal programs and guidance regarding long term planning for severe drought.		Medium	New	Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low cost mechanism to support drought response.		Low	County General Funds
Working with MARC, develop drought plans and water conservation programs.	2020	Ongoing	The County is utilizing local programs and guidance and coordinates with MARC regarding water drought and conservation programs in County plans				Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low cost mechanism to support drought response.		Low	City General Funds
Enhance public awareness of drought, drought mitigation, state and local drought response actions and water conservation measures.													
Develop and conduct public education and awareness programs on drought mitigation, drought response and water conservation.	2020	Ongoing	County is working with MDNR and local jurisdictions to conduct local public educational programs. This includes supplying literature and conducting presentations at local schools and civic events throughout the County.		Medium	New	Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low cost mechanism to support drought response.		Low	County General Funds
Heat Waves													
Enhance public awareness of the hazards associated with heat waves, precautionary measures and area heat wave mitigation and preparedness activities.													

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Collect and disseminate public education materials that address heat wave safety, preparedness and mitigation activities.	2020	Ongoing	The County's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards heat waves can cause.		High	Existing	Emergency Preparedness working with local health departments and NOAA	Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County Emergency Preparedness Budget/EMPG
Develop and conduct a public education and awareness campaign on properly weather stripping homes.	2015	Deferred	Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards heat waves can cause. The educational program also includes information about making residents homes more energy efficient.		High	Existing	Emergency Preparedness working with local health departments and NOAA	Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County Emergency Preparedness Budget/EMPG
Provide vulnerable populations with public education materials that address heat wave safety, preparedness and mitigation activities.	2020	Ongoing	The County's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards heat waves can cause.		High	Existing	Emergency Preparedness working with local health departments and NOAA	Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County Emergency Preparedness Budget/EMPG
Work with the media to publish special newspaper sections or conduct periodic broadcasts with emergency information on extreme heat.	2020	Ongoing	The City's Office of Emergency Preparedness also participates with the regional Integrated Warning Team. This group is task to bring all organizations with responsibilities regarding warning the public about severe weather events together to develop more resilient and effective warnings.		High	Existing	Emergency Preparedness working with local health departments and NOAA	Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County Emergency Preparedness Budget/EMPG
Ensure at-risk, low income and elderly residents have adequate air conditioning (or fans) and ventilation in their homes.													
Identify at-risk, low income and elderly residents and develop a database and map (or GIS layers) of their places of residence.	2020	Ongoing	The office of Emergency Preparedness is currently exploring ways to get at-risk populations into a GIS database.		High	Existing	Emergency Preparedness working with local health departments to link with Safe Shelter and cooling centers locations	Emergency Preparedness/local health departments	Ongoing	Medium cost method to identify at-risk populations to prevent injury of death		Medium	Unknown

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Partner with community service organizations and area businesses to provide air conditioners and/or fans to at-risk groups, low income residents and the elderly.	2020	Ongoing	The Counties Office of Emergency Preparedness has numerous government facilities that are air conditioned and available to residents during times of severe heat conditions. The County also coordinates with the United Ways regional 211 information system to help residents identify local "Cooling Centers"		High	Existing	Emergency preparedness working with local relief agencies and business contacts including Untied Way	Emergency Preparedness	Ongoing	Low cost mechanism to support resiliency for vulnerable populations during heat waves.		Low	County General Fund
Ensure local governments and human services agencies are aware of air conditioned facilities across the Kansas City metropolitan area that can be used as shelters in the event of a heat wave.													
Partner with MARC, local public health agencies, emergency management agencies, the American Red Cross, Salvation Army and other stakeholders to inventory public, private and non-profit facilities that are air conditioned and can be used as "heat emergency shelters" in the event of a heat wave.	2020	Ongoing	The County works with several local and regional stakeholders to ensure the County and local jurisdictions within the county have numerous "Cooling Centers" open to the public during times of sever heat waves.		High	Existing	Office of Emergency Preparedness and County Health Department functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low cost mechanism to identify mitigation strategies for populations vulnerable to heat waves.		Low	County General Funds
Retrofit otherwise suitable existing facilities with air conditioning systems and designate them as shelters for use during heat waves.	2020	Ongoing	Currently the county has numerous shelter sites but, efforts to continue increasing shelter facilities Implemented through the Counties educational preparedness programs and Faith Based shelter initiative are ongoing. Many of these sites have air-conditioning but efforts continue to try and retrofit those shelters that are not climate controlled.		High	Existing	Emergency Preparedness utilizes the Safe Shelter Partnership for cooling centers in addition to the Salvation Army and United Way	Office of Emergency Preparedness	Ongoing	Medium cost mechanism to assure populations vulnerable to heat waves are protected.		Medium	Unknown
Ensure programs and procedures to mitigate, prepare for and respond to heat waves are developed and implemented.													
Develop local heat emergency plans or heat wave annexes to local emergency operations plans.	2020	Ongoing	All weather procedures and plans are continually updated and changed as needed.		High	Existing	Emergency Preparedness working with local health departments to link with Safe Shelter and cooling centers locations	Emergency Preparedness/local health departments	Ongoing	Low cost mechanism to increase public safety.		Low	EMPG and County General Fund
Partner with public safety agencies, local public health agencies and community groups to develop a program to regularly check on elderly, low income and at-risk people in the community during heat waves.	2020	Ongoing	The County has a severe heat plan that coordinates with public and private agencies to check on at-risk populations in the unincorporated areas of the county. This is an on-going program continually identifying additional partners such as CERT, VIPS and faith based organizations.		High	Existing	The county links with the severe weather plan that coordinates with the local health departments	Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	EMPG and County General Fund

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Temporarily reduce or eliminate fees for public swimming pools during extended periods of extreme heat and humidity.	2010	Deleted	Not a county function										
Work with community groups to sponsor a program to encourage people to think of those who require special assistance (this effort can be incorporated into Neighborhood Watch, CERT or similar programs).	2020	Ongoing	The County has a severe heat plan that coordinates with public and private agencies to check on at-risk populations in the unincorporated areas of the county. This is an on-going program continually identifying additional partners such as CERT, VIPS and faith based organizations.		High	Existing	Emergency Preparedness working with Safe Shelter Partnerships FBI/O	Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	EMPG and County General Fund
Increase communication and Planning capabilities between Public Safety agencies.													
Develop a communication network between Emergency Management Agencies, Health Departments throughout the County with the Jackson County Medical Examiners Office	2015	Deferred	Establish a dedicated communications and planning group between public safety, health departments and emergency management agencies within the county	Local Plans and Regulations	Medium	New & Existing	Emergency Preparedness working with local health departments, public safety and medical examiner's office	Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County Emergency Preparedness Budget/EMPG
Dam Failures													
Enhance public awareness of the hazards associated with dam failures, as well as mitigation and preparedness activities.													
Collect and disseminate public education materials that address dam safety, preparedness and mitigation activities.	2010	Ongoing	The County's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of dam failures.		High	Existing	Office of Emergency Preparedness, within City ordinances and codes	County's Office of Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County General Funds
Conduct a public education campaign to inform dam owners and citizens living near the inundation pathways of dams about the need to properly maintain and upgrade these structures, particularly those that are more than 50 years old.	2010	Ongoing						emergency preparedness office	Ongoing				
Provide property owners in or near the inundation pathways of dams with information on dam safety, preparedness and mitigation activities.	2010	Ongoing	The County's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of dam failures.		High	Existing	Office of Emergency Preparedness, within City ordinances and codes	County's Office of Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County General Funds

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Work with MDNR and USACE to conduct a public education campaign to inform citizens living near the inundation pathways of dams of the need to be familiar with the emergency action plans for these dams.	2010	Ongoing	The County's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of dam failures.		High	Existing	Office of Emergency Preparedness, within City ordinances and codes	County's Office of Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County General Funds
Improve warning and evacuation systems and procedures in the event of dam failure.													
Adopt policies, codes or ordinances discouraging development in the vicinity of dam inundation zones.	2010	Ongoing	The County continues to work with local jurisdictions to discourage development in the vicinity of dam inundation zones.		Medium	Existing	Parks & Rec/Public Works/Corps of Engineers working with MDNR to maintain safety building codes to dam inundation zones	Parks & Rec/ Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County General Funds
Reduce the potential for dam failures by enhancing inspection efforts.													
Adopt codes or ordinances requiring permits, engineering studies and safety certifications prior to the construction of new dams.	2020	Ongoing						public works	Ongoing				
Adopt local ordinances and/or state laws requiring all dam owners do develop emergency action plans for their dams and provide local public safety agencies with copies of these plans.	2020	Ongoing						public works	Ongoing				
For dams not regulated by the state, encourage dam owners to inspect their dams at least annually and submit the results of these inspections to MDNR.	2020	Ongoing						public works	Ongoing				
c. Encourage the state to provide MDNR's Water Resources Program with funding necessary to regularly inspect all significant and high hazard dams in the state.	2020	Ongoing						county legislature	Ongoing				
Severe Thunderstorms													
Increase severe weather warning capabilities.													
Increase volunteer local weather spotter capability	2015	Ongoing	Development of a countywide home spotter network increasing weather spotters by a minimum of 50 volunteers	Local Plans and Regulations	Medium	new	Office of Emergency Preparedness, within City ordinances and codes	County's Office of Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County General Funds
Increase weather radio distribution	2015	Completed Project	Increase the use of weather radios by general public and businesses throughout the county	Education and Awareness Programs	Medium	existing	Office of Emergency Preparedness, within City ordinances and codes	County's Office of Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Medium	Unknown
Increase weather training effectiveness	2015	Ongoing	Develop advanced spotter training classes increasing the level of training weather spotters receive	Local Plans and Regulations	Medium	existing	Office of Emergency Preparedness, within City ordinances and codes	County's Office of Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	County General Funds
Levee Failures													
Improve levee warning systems.													

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Increase accuracy and timely data release from COE regarding water levels on levees throughout the County	2015	Ongoing	Develop methods to accurately know height and length of time water sits on levees	Structure and Infrastructure Projects	Medium	existing	Office of Emergency Preparedness, within City ordinances and codes	County's Office of Emergency Preparedness	Ongoing	Relatively low cost mechanism to increase public safety warnings regarding levee failures.		Low	County General Funds

Blue Springs 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)													
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Tornadoes													
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.													
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2020	Ongoing	The City currently utilizes the 2012 editions of the International Building Code, future adoption of the 2018 Codes is anticipated in 2020.	planning	Medium			planning, building codes				TBD	General Fund
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Deferred	This option will be reviewed when considering code changes and amendments.										
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Deferred	May be included with the code revision.										
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/commercial structures.	2010	Deferred	The Eastern Jackson County Home Builders Association will be included in overall discussions as the process evolves.										
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.													
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Complete							pre 1990				
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2020	Ongoing			Low	Existing	Due to the prevalence of ice storms in the area KCP&L and its acquired company Aquila, have been working to find areas that are in peril from trees and other natural factors.	Kansas City Power & Light	Ongoing			unknown	Utility
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2020	Ongoing			Low	Existing	On a project by project basis the option is strongly considered to put utility lines underground. Some corridors are too expensive to address without a redevelopment project.	City / Utility/ developer	on going			N/A Occurs with development	N/A
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.													
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing			Medium	New	Plan reviews and code requirements, if adopted.	Community Development staff	October 1, 2014			\$7,500	City's General Fund

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Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing			Medium	New	This component will be addressed with the update of the development code. Further stakeholder input required.	Planning and Codes Departments	Unknown at this time			Unknown at this time	Unknown at this time
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing			Medium	New	The new building designs will include rooms that provide safe refuge from tornados and storms.	Planning and Codes Departments	Ongoing			unknown	project budget
Increase public awareness and understanding the benefits of "safe rooms."													
Develop, distribute informational materials on safe rooms.	2010	Deferred	This component will be considered in conjunction with the update of our development code.										
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred	This component will be addressed with the update of the development code.										
To use the latest guidance issued in upcoming International Building Code IBC versions.													
Update Building regulations as the IBC changes	2020	Ongoing		Local Plans and Regulations	High	Overall	IBC Code adoption	Planning and Development Department	Ongoing	Include in operational costs overall	8000	10000	General Fund - Building Fees
Floods													
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.													
**a. Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2020	Ongoing			Low		The Public Works Department reviews each water call to determine the source of the flow. Mitigation strategies are formulated on a case by case basis.	Blue Springs Public Works	Ongoing			Depends on the situation.	City's General Fund
**b. Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2020	Ongoing			Low	Existing	Public Works grant searches.	Blue Springs Public Works	Ongoing			None at this time.	TBD
c. As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred	Due to the current economy the Capital Improvement Budget is only addressing maintenance needs.									Only one property has been identified in the last 10 years. The property was purchased.	

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**d. With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2020	Ongoing			Medium	Existing	The Department consistently looks for ways to partner with residents and property owners to alleviate overland flooding issues.	Blue Springs Public Works	Ongoing			The City has very few homes that experience overland flow issues. Most are simply yard flooding that does not impact the structure. It is also very short lived. Generally, 15 minutes or less.	City's General fund and CIP Budget
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.													
a. Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2020	Ongoing			High	Existing	Through the plan review process and code requirements detention is required. A comprehensive plan update that was completed in September 2009 heightened awareness of natural detention options and encourages the implementation of such practices.	Public Works and Community Development departments	Ongoing			N/A	Developer / Owners
b. In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Completed							Pre 1990				
c. Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2020	Ongoing			Medium	New	Development in flood zones is prohibited by code. If flood prone areas are incorporated in a large development the area is typically used as green space.	City's Community Development and Public Works departments	Ongoing			N/A	N/A

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d. Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2020	Ongoing			Medium	New	The city has very few flood plain areas within the current boundaries. However, there has been an area identified in the intent to annex area that would be suitable for some of these uses. If the area is annexed these applications will be considered.	Community Development, Public Works, and Parks departments	Ongoing			TBD	TBD
e. Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Deferred	The city is currently working through a multi year plan to assess the watersheds throughout the city and determine the best management practices associated with each situation.										
f. Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented jointly.	2020	Ongoing			Medium	Existing	The City partners with the Jackson County Storm water commission to identify regional initiatives and programs.	Jackson County Storm water Commission	Ongoing			\$7,500 per year	City's general fund
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.													
a. Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing			Medium	Existing	The city works with each property owner on a case by case basis to identify solutions to flooding in buildings.	Public Works	Ongoing			Dependent on the number of significant rain events per year.	General Fund
b. Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Completed							Ongoing				
c. Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Completed							Ongoing				
d. As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred	This initiative has been deferred until funds become available.										
e. Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Deferred	The process of elevating entire structures is complicated and expensive. In most cases there are more attractive and economical options available.										
Discourage new development in floodplains and flood-prone areas.													

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a. Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010		Complete						Pre 2000				
Improve flood hazard assessments and flood mapping.													
**a. Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing			Low	Existing	The data is available through the City's GIS system.	Community Development	Ongoing			TBD	General Fund
b. Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Completed							October 2007				
Enhance public awareness and education efforts related to flooding.													
b. Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Deferred	Standard practice is to direct interested parties to the FEMA website.										
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.													
a. Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Completed							September 1978				
**b. Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing			High	New	Project Plan Review	Public Works Engineering	Ongoing				General Fund
To continue to monitor for possible flooding issues within the city and adapt solutions to correct the issues when they arise.													
Monitor for FEMA Flood Map updates	2020	Ongoing		Local Plans and Regulations	High	Overall	Flood Plain Management	Planning and Development Department	Ongoing	N/A	N/A	N/A	General Fund
Update DAM EAP Annually	2020	Ongoing		Local Plans and Regulations	High	Yes	Local Emergency Operations Planning	Public Works	Annual	N/A	N/A	N/A	General Fund
Severe Winter Weather													
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of severe winter weather.													
a. Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Completed							pre 1990 mid level transmission lines				
b. Offer incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2020	Ongoing					Department discussions with the utility provider.	Kansas City Power & Light	Ongoing			???	Utility
Ensure local governments and human services agencies are aware of facilities across the Kansas City area with generators or emergency power that can be used as shelters in the event of severe winter weather.													
a. Partner with MARC, the American Red Cross, Salvation Army and other stakeholders to inventory public, private and non-profit facilities that have generators or emergency power and can be used as shelters in the event of severe winter weather.	2020	Ongoing			Medium	New	Discussions and project reviews.	Blue Springs and CJCEMA	Ongoing			???	Developer
b. Retrofit otherwise suitable existing facilities with generators for emergency power.	2020	Ongoing			High		MARC emergency management in conjunction with Central Jackson County Emergency Management.	MARC	ongoing			????	MARC Participating agencies
c. Consider the adoption of policies requiring generators or other emergency power systems in the construction of new public facilities.	2020	Ongoing			Medium	New	Strategic planning and plan review.	City/ owner/ developer	ongoing			????	Owner / developer
Since traffic accidents account for 70% of injuries related to ice and snow, develop and implement programs to improve road conditions and protect motorists during severe winter weather													

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a. Budget for the stockpiling of sand, salt and other materials necessary to reduce or eliminate ice on roadways and improve road conditions.	2010	Completed							Pre 1984				
b. Work with area local governments and MARC to develop a regional "pool" of sand, salt and other materials necessary to reduce or eliminate ice on roadways.	2010	Deferred	Considering the viability of the regional stockpiling concept for operations.										
c. Partner with area local governments to establish a mutual aid system for sand, salt and other materials and their delivery resources (i.e., trucks, crews, etc.).	2010	Deferred	Considering the viability of the concept as it relates to the suburban areas.										
d. In an effort to reduce the number of people on the roadways during periods of severe winter weather, develop and implement "snow day" plans and policies for non-essential personnel and encourage private sector and non-profit employers in the community to	2010	Deferred	Due to the economy, this idea has been put on hold until companies are on surer footing. Media coverage of companies that offer this option applies peer pressure to their competition.										
Enhance public awareness of severe winter weather mitigation and preparedness activities.													
a. Develop and conduct a public education and awareness campaign on properly winterizing homes.	2010	Deferred	This option is being considered.										
b. Collect and disseminate public education materials that address winter weather safety, preparedness and mitigation activities.	2010	Deferred	The city is not sure if another outlet is needed. The local media does several features on home winterizing each year.										
c. Provide vulnerable populations with winter weather safety, preparedness and mitigation information.	2010	Deferred	Several departments and sub entities have the ability to disseminate information, but a clear concise message must be formulated.										
Drought													
Assess the vulnerability of water systems.													
a. Conduct an assessment of the vulnerability and water use demand of local water systems by utilizing the procedures in the Missouri Drought Plan.	2010	Deferred	The City's water model will have to be updated using the Missouri Drought Plan parameters. The current plan is designed for the NFP.										
b. Partner with MDNR (Public Drinking Water and Water Resources Programs) and USDA to use USDA's Reservoir Operation Study (RESOP) computer program to determine the performance capacity of local reservoirs.	2010	Deferred	This will also depend on the water model.										
Ensure plans and procedures addressing local drought response, drought mitigation and long-term water planning are developed.													
a. Review the Missouri Drought Plan, as well as local drought plans available from MDNR, and develop a local drought plan.	2010	Deferred	to be performed after the water model is updated.										
b. Develop local procedures implementing the provisions of the Missouri Drought Plan.	2010	Deferred	Again, all predicated on the water model being calibrated to the Missouri Drought Plan criteria.										
c. Working with MARC, develop drought plans and water conservation programs.	2010	Deferred	Development to be done after the water model is updated.										

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Enhance public awareness of drought, drought mitigation, state and local drought response actions and water conservation measures.													
a. Develop and conduct public education and awareness programs on drought mitigation, drought response and water conservation.	2010	Deferred	We need to determine the plan before we can educate the public.										
b. Collect and disseminate public education materials that address water conservation techniques and strategies, particularly those addressing agricultural drought mitigation and management.	2010	Deferred	Same as above										
Encourage water conservation efforts by commercial, industrial and private water users.													
a. Develop and implement a program to encourage voluntary water conservation.	2010	Deferred	After the plan is developed.										
b. Offer economic incentives to encourage water conservation, e.g., through modification of water rate structures.	2020	Ongoing			Medium	Existing	The water rates are set in a tiered structure with prices increasing as certain levels are reached.	Blue Springs Water Department	On going	Reduction in water usage overall.		0\$	N/A
c. Develop and implement water conservation ordinances.	2020	Ongoing			Medium	Existing	Code of Ordinances - Water Rates	Blue Springs Water Department	On going			\$0	N/A
Encourage improvements to water system infrastructures to reduce vulnerability to drought and meet water use demands.													
a. Budget for infrastructure improvements to municipal water systems.	2020	Ongoing			Medium	Existing	System improvements are continuously included in the Capital Improvement Program.	Blue Spring Public Works Department	On Going			\$200,000 per year	Water fees
b. Develop and approve bond measures to fund improvements to municipal and/or water district water treatment plants, transmission systems, water mains and related infrastructure.	2020	Ongoing			High	Existing	Capital Improvement Program	Blue Springs Public Works	On Going			\$21,000,000	Water Fees and SRF bonds
c. Identify and apply for state and federal grants to improve water treatment plants, transmission systems, water mains and related infrastructure.	2010	Complete							January 2015 through Tri County Water Authority				
To ensure an adequate water supply by maintaining contracts for water purchase from three separate entities.													
Monitor water use during times of drought and use voluntary restrictions if warranted	2020			Local Plans and Regulations	High	Yes	Water Modeling	Public Works	Annual	N/A	N/A	N/A	N/A
Heat Waves													
Ensure local governments and human services agencies are aware of air conditioned facilities across the Kansas City metropolitan area that can be used as shelters in the event of a heat wave.													
a. Partner with MARC, local public health agencies, emergency management agencies, the American Red Cross, Salvation Army and other stakeholders to inventory public, private and non-profit facilities that are air conditioned and can be used as "heat emergency shelters" in the event of a heat wave.	2010	Completed							June 2014				
b. Retrofit otherwise suitable existing facilities with air conditioning systems and designate them as shelters for use during heat waves.	2010	Completed							June 2014				
Ensure at-risk, low income and elderly residents have adequate air conditioning (or fans) and ventilation in their homes.													
a. Identify at-risk, low income and elderly residents and develop a database and map (or GIS layers) of their places of residence.	2010	Deferred	Proposed for a future budget year when interns are available.										
b. Partner with community service organizations and area businesses to provide air conditioners and/or fans to at-risk groups, low income residents and the elderly.	2010	Completed							June 2014				

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c. Work with utility providers to develop and implement programs to reduce, eliminate or defer air conditioning costs for elderly, low income and at-risk people in the community.	2010	Deferred	Future project with KCP&L.										
Ensure programs and procedures to mitigate, prepare for and respond to heat waves are developed and implemented.													
a. Develop local heat emergency plans or heat wave annexes to local emergency operations plans.	2010	Completed							June 2014				
b. Consider developing a regional heat emergency plan for the greater Kansas City metropolitan area.	2010	Deferred	Will work wit MARC when the plan is being assembled. Blue Springs has not historically had issues with wide spread heat wave problems.										
d. Work with community groups to sponsor a program to encourage people to think of those who require special assistance (this effort can be incorporated into Neighborhood Watch, CERT or similar programs).	2010	Deferred	May be included in CERT Team duties in the future.										
e. Temporarily reduce or eliminate fees for public swimming pools during extended periods of extreme heat and humidity.	2010	Deferred	The issue has not been identified as a need.										
Enhance public awareness of the hazards associated with heat waves, precautionary measures and area heat wave mitigation and preparedness activities.													
a. Collect and disseminate public education materials that address heat wave safety, preparedness and mitigation activities.	2010	Completed							May 2013				
b. Provide vulnerable populations with public education materials that address heat wave safety, preparedness and mitigation activities.	2010	Deferred	The media in Kansas City and MARC do a good job of informing the public.										
c. Work with the media to publish special newspaper sections or conduct periodic broadcasts with emergency information on extreme heat.	2010	Deferred	Will be placed in the City's magazine for the summer.										
d. Develop and conduct a public education and awareness campaign on properly weather stripping homes.	2010	Deferred	KCP&L and MGE already send out fliers in the fall concerning weather stripping.										
To continue to offer air conditioned shelters during heat waves.													
Offer air conditioned facilities to the public during heat waves	2020	Ongoing	Vesper Hall is available during business hours		M		CJCEMA	Blue Springs	N/A0	N/A	As identified, 5 people in one season have used the facility while their A/C was being repaired.	N/A	General Fund
Dam Failures													
Improve hazard assessment information for dams across the Kansas City metropolitan area.													
a. Work with MDNR's Water Resources Program and USACE to determine which dams in Cass, Clay, Jackson, Platte and Ray counties have had inundation studies, inundation pathway maps and emergency action plans developed.	2010	Completed							2007				
b. Using the latest information from the NID, MDNR's inventory of dams and other sources, develop GIS layers and maps indicating the locations, inundation pathways and hazard potential of known dams within the Kansas City metropolitan area.	2010	Completed							2010				

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c. Obtain assessed valuation data and population figures for areas in the vicinity of dam inundation pathways so that enhanced vulnerability assessments may be conducted describing the number of lives and amount of property at risk from dam failure.	2010	Completed							2010				
d. Include maps and information from inundation studies and dam emergency action plans in local emergency operations and land use plans.	2010	Completed							2010				
Enhance public awareness of the hazards associated with dam failures, as well as mitigation and preparedness activities.													
a. Work with MDNR and USACE to conduct a public education campaign to inform citizens living near the inundation pathways of dams of the need to be familiar with the emergency action plans for these dams.	2010	Deferred	Will develop a brochure for those in the path in the future. The dam in our area is backed up by the base of I-70, which makes a full breach nearly impossible.										
c. Provide property owners in or near the inundation pathways of dams with information on dam safety, preparedness and mitigation activities.	2010	Deferred	See question 6.										
d. Conduct a public education campaign to inform dam owners and citizens living near the inundation pathways of dams about the need to properly maintain and upgrade these structures, particularly those that are more than 50 years old.	2010	Deferred	See question 6.										
Reduce the potential for dam failures by enhancing inspection efforts.													
a. For dams not regulated by the state, encourage dam owners to inspect their dams at least annually and submit the results of these inspections to MDNR.	2010	Deferred	Looking at similar policies.										
b. Adopt codes or ordinances requiring permits, engineering studies and safety certifications prior to the construction of new dams.	2010	Completed							2007				
c. Encourage the state to provide MDNR's Water Resources Program with funding necessary to regularly inspect all significant and high hazard dams in the state.	2010	Completed							2010				
d. Adopt local ordinances and/or state laws requiring all dam owners do develop emergency action plans for their dams and provide local public safety agencies with copies of these plans.	2010	Completed							2010				
Improve the structural integrity of dams to reduce the threat of dam failures.													
a. Identify and pursue grants and/or low interest loans to repair or improve dams.	2010	Deferred	No dams currently fit this description. If it becomes an issue grants will be pursued.										
c. Budget for regular repairs and improvements to dams, particularly those that are publicly owned.	2020	Ongoing			Low	Existing	City's budget	Blue Springs Public Works	On going maintenance is budgeted for within the Public Works budget.	Dam erosion.		\$5,000 per year.	General revenue
d. Develop and implement codes and ordinances requiring minimum site and construction standards for dams.	2010	Completed							2010				
Improve warning and evacuation systems and procedures in the event of dam failure.													

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b. Work with dam owners, particularly USACE, emergency management and other public safety agencies to develop and conduct emergency response exercises.	2010	Deferred	Exercising more critical hazards at this time. It will be considered for a future training exercise.										
c. Adopt policies, codes or ordinances discouraging development in the vicinity of dam inundation zones.	2010	Completed							2012				
To update the Dam Emergency Action Plan annually.													
Update inundation maps in the Dam EAP as provided in the USACE	2020	Ongoing		Local Plans and Regulations	High	Yes	Dam Emergency Action Plan	Public Works	Ongoing	Included in general operational costs	N/A	N/A	N/A
Severe Thunderstorms													
To maintain the level of awareness and public education concerning severe thunderstorms as guided by the NWS.													
To maintain the level of awareness and public education concerning severe thunderstorms as guided by the NWS.	2020	Ongoing						CJCFPD					

Grandview 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Assist housing and business recovery										
Educate and awareness	2015	Ongoing	We view this as part of a response plan versus mitigation.	Education and Awareness Programs	High	As needed	None done to date	emergency management	No cost estimates done to date.	City Funds, Federal and State Aid
Collect and dispose of debris										
Contract debris disposal	2015	Ongoing	We view this as part of a response plan versus mitigation.	Local Plans and Regulations	High	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Educate and awareness	2015	Ongoing	We view this as part of a response plan versus mitigation.	Education and Awareness Programs	High	As needed	None done to date	emergency management	No cost estimates done to date.	City Funds, Federal and State Aid
Place directional signage	2015	Ongoing	We view this as part of a response plan versus mitigation.	Education and Awareness Programs	High	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing	Currently only required where change of impact. Review current process/code for update possibility. Community Development, Building	Local Plans and Regulations	Medium	Unknown		building services	Unknown	Unknown
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing	Adopt 2018 Building Code. Community Development, Building Services.	Education and Awareness Programs	Medium	Unknown		building services	Unknown	Unknown
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing	Review options with adoption of 2018 Building Code and Zoning Updates.	Unspecified	Medium	Unknown		planning & zoning	Unknwon	Unknown
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing	Start conversation on requiring in commercial developments.Community Development.	Unspecified	Unspecified			planning & zoning		
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing	Community Development, Building Services.	Unspecified	Unspecified			emergency management		
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										

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Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Ongoing	Future code changes will change from recommendation to requirement. Community Development.	Unspecified	Medium	Unknown		planning & zoning	Unknown	Unknown
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing	Report any identified concerns to KCP&L.	Unspecified	Medium	Unknown		local utilities	Unknown	Unknown
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Ongoing	Seek possible incentives that are available to complete this. Administration.	Unspecified	Unspecified			city administration		
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	Share assessment report completed by Fire Department with Hazard Mitigation Committee.	Unspecified	Medium	Unknown		fire department	Unknown	General fund - plan review fees
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing	Update with new building code and zoning updates in 2020. Community Development, Building Services.	Unspecified	Medium	Unknown		planning & zoning	Unknown	Unknown
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing	Hazard mitigation committee review assessment report and determine action needed based on review.	Unspecified	Unspecified			public works		
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing	Previously deferred, need to create materials for distribution. Community Development, Building Services.	Unspecified	Unspecified			emergency management		
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing	Previously deferred, need to reach out to trade organization to develop workshop. Community Development, Building Services.	Unspecified	Unspecified			emergency management		
Restore transportation network										

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Clean Streets	2015	Ongoing	We view this as part of a response plan versus mitigation.	Natural Systems Protection	High	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Dispose of debris	2015	Ongoing	We view this as part of a response plan versus mitigation.	Natural Systems Protection	High	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Secure property										
Establish Boundaries	2015	Ongoing	We do not currently have a comprehensive plan addressing this. Addressed as needed. Create policy to ensure needs are met and process is identified. Fire Department.	Local Plans and Regulations	High	As needed	None done to date	first responders	No cost estimates done to date.	City Funds, Federal and State Aid
Provide Fencing	2015	Ongoing	We do not currently have a comprehensive plan addressing this. Addressed as needed. Create policy to ensure needs are met and process is identified.	Structure and Infrastructure Projects	High	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Provide shelter and water	2015	Ongoing	We do not currently have a comprehensive plan addressing this. Addressed as needed. Create policy to ensure needs are met and process is identified. Administration, Outside resources.	Local Plans and Regulations	Medium	As needed	None done to date	city administration	No cost estimates done to date.	City Funds, Federal and State Aid
Floods										
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing	We have an ordinance that prohibits building in the floodplain. Share information with any homes previously built in floodplain. Community Development.	Unspecified	Low	Ongoing		community development	Unknown	Unknown

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Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing	Obtain and share via social media and material at apartment complexes. Community Development, Communications Manager.	Unspecified	Low	Ongoing		community development	Unknown	Unknown
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing	Community Development.	Unspecified	Low	Ongoing		community development	Unknown	Unknown
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing	Dangerous Building program along with seeking funding options. Community Development, Public Works.	Unspecified	Medium	Ongoing		community development	\$1,000 per year	General Fund
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing	Community Development, Public Works.	Unspecified	Medium	Ongoing		public works	\$1,000 per year	General Fund
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing	Back-flow prevention options. Public Works.	Unspecified	Low	Ongoing		public works	\$500 per year	General Fund
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing	Complete inventory of structures impacted in the past. Community Development, Public Works.	Unspecified	Medium	Ongoing		public works	\$5,000 per year	General Fund
Implement or improve flood warning systems.										
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing	Review current methods to disseminate information. Seek funding for weather radio program. Emergency Management, Communications Manager.	Unspecified	High	Ongoing		emergency management	Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing	Develop list of partners and plan to accomplish. Public Works.	Unspecified	Low	Ongoing		public works	Not known	Not known
Improve flood hazard assessments and flood mapping.										
**Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Ongoing	Public Works	Unspecified	Low	2018		public works	10000	Grants, General Fund
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Ongoing	Complete and share with Hazard Mitigation Team. Community Development, Public Works.	Unspecified	Low	Ongoing		public works, community development	\$5,000 per year	General Fund
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing	Data available. Create GIS mapping and share with Hazard Mitigation team. Community Development.	Unspecified	Medium	Ongoing		community development	Unknown	Unknown
Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Completed	Flood map has been updated. Continue monitoring of current boundaries to ensure accuracy. Public Works.	Unspecified	Medium	Ongoing			\$2,500 per year	General Fund
**Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Ongoing	Public Works	Unspecified	Low	Ongoing		public works	\$500 per year	General Fund
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing	Include in Comprehensive Plan Update. Identify locations and develop ideas. Develop policy. Community Development, Parks, Public Works.	Unspecified	Medium	Ongoing		community development, parks, public works	Unknown	Unknown
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing	Update zoning and subdivision regulations to ensure adequate requirements. Individual plan review. Public Works, Community Development.	Unspecified	Medium	Ongoing		community development, parks, public works	Unknown	Developer costs

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing	Seek funding sources. Community Development, Parks, Public Works.	Unspecified	Medium	Ongoing		community development, parks, public works	Unknown	Unknown
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing	Develop policy. Community Development, Parks, Public Works.	Unspecified	Medium	Ongoing		community development, parks, public works	Unknown	Unkown
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Ongoing	Create list of partners and meet to discuss options available. Approach home owners identified at risk. Develop policy. Community Development, Parks, Public Works.	Unspecified	Medium	Ongoing		community development, parks, public works	\$1,000 per year	General Fund
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing	Dangerous Building program along with seeking funding options. Community Development, Public Works.	Unspecified	Low	Ongoing		community development, public works	\$500 per year	General Fund
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing	Add requirement to new zoning in areas that do not restrict building. Develop list of properties at risk and approach owners. Seek funding to assist with cost. Community Development, Business Services.	Unspecified	Low	Ongoing		business services	\$2,500 per year	Permit fees
Severe Thunderstorms										
Restore Street System										
Clean debris	2015	Ongoing	We view this as part of a response plan versus mitigation.	Natural Systems Protection	High	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Dispose of debris	2015	Ongoing	We view this as part of a response plan versus mitigation.	Structure and Infrastructure Projects	High	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Restore utilities										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Clear transportation networks	2015	Ongoing	We view this as part of a response plan versus mitigation.	Local Plans and Regulations	High	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Educate and awareness	2015	Ongoing	Social media and newsletters are used to help educate when disasters occur. Communication Manager, Public Works.	Education and Awareness Programs	High	As needed	None done to date	public works, communications	No cost estimates done to date.	City Funds, Federal and State Aid
Plan infrastructure/Grid protection	2015	Ongoing	Coordinate with KCP&L as needed.	Structure and Infrastructure Projects	Medium	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid
Provide temporary shelter and water	2015	Ongoing	Share shelter plan with Hazard Mitigation team. Public Works.	Local Plans and Regulations	Medium	As needed	None done to date	public works	No cost estimates done to date.	City Funds, Federal and State Aid

Greenwood 2020 Mitigation Strategy (New Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Community education for all types of disasters including tonadoes, winter weather, heat and severe storms among other types of emergencies and disasters.										
Prepare and disseminate information to residents and those working in the city through employers on emergency preparedness tips.	2020	New	will begin work in 2020	Education and Awareness Programs	Medium	2025		emergency management	low cost	city resources
To increase access to safe rooms or shelters for our residents.										
Identify buildings in the city that could be used as storm shelters and determine if additional shelter space is required.	2020	New	will begin work in 2020	planning	Medium	2022		emergency management	low cost	city resources
Seek funding to build storm shelters as part of new public buildings or to retrofit existing buildings to increase storm shelter space in the city	2020	New	will seek funds once planning work is completed	Structure and Infrastructure Projects	Medium	2025		emergency management	unknown	grant funds
Floods										
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing	Current NFIP Participant	Unspecified	Low	Ongoing	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	floodplain manager	low cost	city resources
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing		Unspecified	Low	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	low cost	city resources
Heat										
Implementing education as well as working on ways to help with the vulnerable populations to provide options for cooling in the summer months.										
Identify vulnerable populations in the city and determine how to assist them during severe heat	2020	New	will begin work in 2021	planning	Medium	2022		emergency management	low cost	
Severe Winter Weather										
To help support vulnerable persons in our community during severe winter weather if power is affected.										
Identify vulnerable populations in the city and determine how to assist them during severe winter weather	2020	New	will begin work in 2021	planning	Medium	2022		emergency management	low cost	

Independence 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)													
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Applies to Community Assets (New/Existing)	Existing Local Planning Mechanism through which the action was/will be implemented	Primary Agency Responsible for Implementation / Administration	Date for Completion	Cost / Benefit Review	Target Capacity	Estimated Cost (\$)	Funding Source
Tornadoes													
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.													
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing	The Community Development Department adheres to the standards in the 2012 International Building Code.					community development dept					City's General Fund, Grants, or other future sources
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing	The Community Development Department adheres to the standards outlined in the 2012 International Building Code.					community development dept					City's General Fund, Grants, or other future sources
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing	The Community Development Department adheres to the standards outlined in the 2012 International Building Code.					community development dept					City's General Fund, Grants, or other future sources
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.													
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing	The City of Independence has an ordinance in place requiring all pre-manufactured home parks to include a community shelter for their residents if they expand or build a new facility. Other ordinances for apartment complexes and other large venue complexes are being considered.		High	New	Office of Emergency Preparedness functions within City ordinances and codes	Community Development	On-going	High cost to design and build shelter facilities but can prevent large number of injuries and fatalities. Some cost could be subsidized by tax incentives and grants		High	Private Sector Funding
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing	The City does not have any tax incentives for residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities due to economic conditions and City finances.					community development dept					City's General Fund, Grants, or other future sources
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing	The City of Independence continues to work with all schools and non-governmental entities to promote the benefits of Safe Rooms in all public educational outreach materials.		High	New	Office of Emergency Preparedness functions within City ordinances and codes	Emergency Preparedness Office	On-Going	Low/no cost mechanism to increase public safety.	Low	.Low	General Funds and EMPG grants
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.													
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing	There is currently no funding available to encourage this mitigation action. Independence Power and Light (IPL) does offer residents a discounted price for burying electrical lines. This discount is offered because of bulk pricing agreements negotiated between IPL and the associated contractors.					Independence P&L					City's General Fund, Grants, or other future sources

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Applies to Community Assets (New/Existing)	Existing Local Planning Mechanism through which the action was/will be implemented	Primary Agency Responsible for Implementation / Administration	Date for Completion	Cost / Benefit Review	Target Capacity	Estimated Cost (\$)	Funding Source
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Ongoing	Independence Power and Light is a city owned utility. There is currently no mitigation money being used to bury power lines. Residents can get a discount for burying their lines due to a bulk pricing agreement with contractors.					Independence P&L					City's General Fund, Grants, or other future sources
Encourage Water Utility to install generators for emergency power should power lines go down.													
Install natural gas fired generator and all necessary appurtenances to allow water plant to operate at the minimum day usages should electric power be disrupted.	2020	Ongoing	The Water Plant currently has power supplies from two lines served by KCPL. If KCPL was unable to supply the electricity, the water plant would not be able to provide water which is an essential service to the community.		High	New		Water Dept					City's General Fund, Grants, or other future sources
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.													
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing	The City does not have any tax incentives for residential/commercial builders/developers to construct safe rooms/community shelters in new public facilities due to economic conditions and City finances.					community development dept					City's General Fund, Grants, or other future sources
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing	The city continues to try and develop storm shelters in existing public facilities as funding and opportunities become available.		High	Existing	Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	High cost to retrofit existing buildings but can also prevent large number of injuries and fatalities. Some cost could be subsidized by tax incentives and grants		High	City's General Fund, Grants, or other future sources
Review existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	The City of Independence has designated safety locations in all City facilities for staff and visitors to shelter in during severe weather events. As a "Storm Ready" Community each facility has an "All-Hazard" weather radio and a method of being contacted by the EOC		High	Existing	Office of Emergency Preparedness function within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low/no cost mechanism to increase public safety.		Low	City's general fund
Increase capabilities to provide mass notifications to the public and increase coordination among city departments during times of severe weather.													
Expand, maintain, upgrade, and modernize city wide Tornado Siren network.	2015	Ongoing	The City of Independence is a continually growing city, and as the city grows it can outgrow the footprint of our established tornado siren capabilities. Additionally, technological failures or changes can require siren infrastructure to be upgraded, changed, or added to in order to maintain capabilities and viability. This can include access, operating systems, and cybersecurity.	Education and Awareness Programs	High	Existing	Office of Emergency Preparedness will have the lead planning duty, but will coordinate with the city Emergency Communication Center as the 24-hour backup location for siren control.	Emergency Preparedness	Ongoing	Maintenance and required upgrades have a moderate ongoing yearly cost, while expansion costs can be high. As the most visible and commonly used method of warning, ensuring there is no lapse of coverage or use is vital to ensuring life safety to anyone outside during severe weather		Medium - High	City's General Fund, Grants, or other future sources

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Purchase Mass Notification System to better inform residents and city employees during severe weather.	2015	Ongoing	Implement a citywide notification system that can warn residents of severe weather events and other natural and manmade hazards. The system can also help facilitate effective response with city employees, volunteers, faith based partners etc.	Education and Awareness Programs	High	Existing	Work with other City departments through local ordinances to fund, implement, manage and maintain.	Emergency Preparedness	Unknown	Would give residents enhanced warnings and improved response coordination but would have a high implementation and maintenance cost.		Medium	City's General Fund, Grants, or other future sources
Increase public awareness and understanding the benefits of "safe rooms."													
Develop, distribute informational materials on safe rooms.	2010	Ongoing	Implemented through the City's preparedness educational and outreach program with emphasis on existing shelter facilities located throughout the City		High	Existing	Office of Emergency Preparedness function within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low/no cost mechanism to increase public safety.		Low	City's General Fund
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing	Work with private facilities, City and County volunteer groups, neighborhood groups, the City PIO and the Independence School District to put on workshops and classes to increase "Safe Room" awareness and utilization during severe weather events.		High	Existing	Office of Emergency Preparedness function within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low/no cost mechanism to increase public safety.		Low	City's General Fund
Floods													
Enhance public awareness and education efforts related to flooding.													
Encourage home owners and businesses to purchase flood insurance.	2020	Ongoing	The City of Independence is a CRS community with a rating of 9 which allows for a 5% discount on the flood insurance premium. Public Works sends letters annually to property owners in the special flood hazard areas informing about topics such as flood insurance and mitigation activities. The Office of Emergency Preparedness has several outreach programs to encourage home owners and businesses to purchase flood insurance.	Public Education	Medium	New and Existing	Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	On-going	No/low cost mechanism to encourage flood preparedness.		Low	City general funds and EMPG program grant monies

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Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2020	Ongoing	The City's Office of Emergency Preparedness, Water Pollution Control and Public Works Departments have on-going program to educate the public about flooding and its associated hazards. This program includes standardized educational materials coordinated with local and regional partners. This initiative includes brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross, NFIP and other organizations.	Public Education	Medium	New and Existing	Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	On-going	No/low cost mechanism to encourage flood preparedness.		Low	City general funds and EMPG program grant funding
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2020	Ongoing	The City's Office of Emergency preparedness, Water Pollution Control and Public works Departments have on-going program to educate the public about flooding and its associated hazards. This program includes standardized educational materials coordinated with local and regional partners. City department also participate in local, regional, State and national public educational events such as Safety City and Echo- Fest put on by the City each year.		Medium	New and Existing	Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	On-going	No/low cost mechanism to encourage flood preparedness.		Low	City general funds and EMPG program grant monies
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.													
**As funding allows, target repetitive flood loss properties and structures for buyout.	2020	Ongoing	The City of Independence, since 1982, has worked with property owners, using city, State and Federal funding, to buyout over 58 properties that were considered repetitive loss or severe repetitive loss properties. The City continues to apply for funding opportunities to remove targeted repetitive loss properties.	HMGP - Flood Property Buyouts	High	Existing	City Codes and Community Development and Storm water plans	Public Works/Water Pollution Control	Ongoing	Preventing future flooding of properties that have had history of flood damage		High	Unknown
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2020	Ongoing	The City of Independence constantly tries to identify potential funding sources to mitigate flood losses to repetitive loss properties. This sources include private, local, state and federal grants.	HMGP - Flood Property Buyouts	Medium	Existing	City Codes and Community Development Plans	Public Works/Water Pollution Control	Ongoing	Preventing future flooding of properties that have had history of flood damage		High	City General Funds and Stormwater Sales Tax

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**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing	The City of Independence continually works with property owners to mitigate future flood losses. While economic incentives are not always implemented many educational programs such as building water gardens, backflow valves and landscaping are done.		High	New & Existing	Emergency Preparedness, Public works and Water Pollution Control function within Code of Ordinances	Emergency preparedness	Ongoing	Low cost mechanism to identify r ways to prevent damages to residential properties		Low	City's general fund
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2020	Ongoing	The City of Independence tracks all repetitive loss properties and works with the owners to mitigate potential flood losses through potential development and storm drainage enhancements.	Structural and Non -structural flood mitigation.	High	Existing	City Codes and Community Development Plans	Public Works/Water Pollution Control	Ongoing	Preventing future flooding of properties that have had history of flood damage		Low	City General Funds and Stormwater Sales Tax
Implement or improve flood warning systems.													
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2020	Ongoing	The City has installed real time weather stations and utilizes USGS real-time water data for local daily stream flow conditions which are operated in cooperation with the USGS.	Emergency Response	Medium	New and Existing	Office of Emergency Preparedness, Water Pollution Control and Public Works Department functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Stream gauges are relatively cost effective measures to warn of flooding events and implement mitigation measures.		Medium	General Funds and EMPG grants
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2020	Ongoing	Currently the City working with the Army Corps of Engineers, the National Weather Service and the Public Works and Water Pollution Control Departments to acquire real-time flood inundation prediction capability using stream gauge and forecast information.	Emergency Response	Medium	New and Existing	Office of Emergency Preparedness, Water Pollution Control and Public Works Department functions within City ordinances and codes	Water Pollution Control and Office of Emergency Preparedness	Unknown	Will ensure that citizens are prepared real time for flood events.		Low	General Funds and EMPG grants
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2020	Ongoing	The City has real-time weather data stations that track local rainfall amounts that are fully accessible to regional, State and Federal stakeholders. This system has been in place since 2007.	Emergency Response	Medium	New and Existing	Office of Emergency Preparedness, Water Pollution Control and Public Works Department functions within City ordinances and codes	Water Pollution Control and Office of Emergency Preparedness	Ongoing	Data Sharing is a relatively low cost effective measures to warn of flooding events and implement mitigation measures. Sharing of data will improve county floodplain management.		Low	General Funds and EMPG grants
Improve flood hazard assessments and flood mapping.													
**Comprehensive Watershed Analysis and Flooplain Evaluation of the Little Blue River. Perform detail hydrologic and hydraulic modeling to accurately reflect flood zones/risks in this rapidly developing multi-jurisdictional corridor.	2020	Will start in 2021	City is working with the USACE to scope and prepare for this comprehensive study of the Little Blue River corridor from Lee's Summit to the Missouri River	FMA/PDM - Planning, modeling, and mapping	High	New and Existing Areas	Working with City's Departments, US Army Corp of Engineers, SEMA, and adjacent communities	Water Pollution Control, Public Works	2025	Provide reliable mapping and flood risk analysis. Other aspects of this study may include water quality assessments and improvements and especially those associated with riparian corridor preservation.		Medium	City's General Funds/USACE/ other federal funds

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**Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2020	To start in 2022	The City currently uses the HAZUS software at for Level One reviews. It is currently exploring the future integration of GIS data to increase the accuracy of flood inundation prediction capabilities in partnership , the Water Pollution Control and Public Works Departments.	Planning strategy to keep new developments or redevelopment out of floodplains	Medium	New and Existing Areas	City departmental functions within City ordinances and codes and Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2018 codes (January 2019)	Water Pollution Control, Public Works	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	City's General Funds
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2020	To start in 2021	The City currently uses the HAZUS software at for Level One reviews. It is currently exploring the future integration of GIS data to increase the accuracy of flood inundation prediction capabilities in partnership , the Water Pollution Control and Public Works Departments.	Planning strategy to keep new developments or redevelopment out of floodplains	Medium	New and Existing Areas	City departmental functions within City ordinances and codes and Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2006 codes (January 2009)	Water Pollution Control, Public Works	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	City's General Funds
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2020	Ongoing	Although flood hazard areas of the City have been mapped since 2004 with current FEMA flood map and the digital data integrated into city geo-data on a regular basis. The City continues to review flood hazard areas and incorporate necessary changes as needed.	Planning strategy to keep new developments or redevelopment out of floodplains	Medium	New and Existing Areas	City departmental functions within City ordinances and codes and Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2018 codes (January 2019)	Water Pollution Control, Public Works	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	City's General Funds
**Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2020	Ongoing	The City currently uses the HAZUS software at for Level One reviews. It is currently exploring the future integration of GIS data to increase the accuracy of flood inundation prediction capabilities in partnership, the Water Pollution Control and Public Works Departments.	Planning strategy to keep new developments or redevelopment out of floodplains	Medium	New and Existing Areas	City departmental functions within City ordinances and codes and Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2018 codes (January 2019)	Water Pollution Control, Public Works	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	City's General Funds
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.													
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2020	Ongoing	Where applicable, flood buyout properties will be evaluated for future usage, including sports fields, parks, wildlife habitats, etc. In most cases, the areas will qualify as riparian corridor and be allowed to be naturally restored.	HMGP - Flood Buyouts	Medium	Existing	City Codes and Regulations and NFIP CRS programs	Water Pollution Control and Public Works Department	Ongoing	Preventing future flooding of properties that have had history of flood damage		High	City general funds and/or grant funding

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Consider the construction of detention basins, small lakes and greenways or conserving riparian corridors in areas of new development to channel and capture storm water, thereby reducing the likelihood of flooding.	2020	Ongoing	The City continues to maintain and expand a network of regional detention basins to help reduce flooding potential and impacts throughout the city. Native plantings are used within the network of detention basins, incorporating water quality improvement potential. In the current 5-year plan, planning and design work for the Bundschu detention basin, along Bundschu Road, will occur. The City has already implemented a riparian corridor preservation program and will continue to implement this conservation program for all new developments.	FMA/PDM	High	New	Storm water and Community Development Plans	Water Pollution Control	Ongoing	Will prevent flooding for moderate costs		Medium	Unknown
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented jointly.	2020	Ongoing	The City has on-going programs to educate the public about flooding and its associated hazards. This program includes standardized educational materials coordinated with local and regional partners. City departments also participate in local, regional, State and national public educational events such as Safety City and Eco-Fest, hosted by the City each year. The City's stormwater sales tax, approved by vote and established in 2000, secures funds for stormwater mitigation activities. Oversight of the sales tax usage is comprised of the Stormwater Oversight Committee (SWOC), consisting of Independence citizens. The Committee meets quarterly and includes presentations to Council to help educate about the program's achievements.	Planning Strategies	High	Existing	City departmental functions within City ordinances and codes	Water Pollution Control and Public Works Department and Office of Emergency Preparedness	On-going	Low/no cost mechanism to increase public safety.		Low	Stormwater Sales Tax funds & Regional Detention funds

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Engage both public and private stakeholders in flood control projects to encourage mutually beneficial activities to promote flood control with other stakeholder goals.	2020	Ongoing	The City has on-going programs to educate the public about flooding and its associated hazards. When Water Pollution Control determines the need for a regional detention basin within an area, public meetings are held with property owners to discuss the flood control needs of the project. Public comments help steer design considerations to address the flood control efforts as well as mutually beneficial activities. For instance, in the 39th Street and Phelps detention basin, trails were incorporated to help promote public engagement with the native plants and ecosystem.	Public Education	Medium	New and Existing		Water Pollution Control	Ongoing	Low		Low	Stormwater Sales Tax funds & Regional Detention funds
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2020	Ongoing	The City continues to apply for State and Federal grants to support and enhance flood mitigation and prevention programs. This includes identifying funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	Flood Water Reduction/Storm water Conveyance Improvements	High	Existing	City Codes and Regulations	Water Pollution Control and Public Works Department	On-going	Preventing future flooding of properties that have had history of flood damage		Low	City general funds and/or grant funding
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2020	Ongoing	The City of Independence, since 1982, has worked with property owners, using city, State and Federal funding, to buyout over 58 properties that were considered either repetitive loss or severe repetitive loss properties. The City continues to apply for funding opportunities to remove targeted repetitive loss properties. As part of these buyouts, each property is deed restricted, requiring the land to be used for open space.	HMGP - Flood Property Buyouts	High	Existing	City Codes and Regulations	Public Works	Ongoing	Preventing future flooding of properties that have had history of flood damage		High	Unknown

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Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2020	Ongoing	The City works with property owners and other stakeholders to develop and implement flood mitigation strategies which promotes protection of fish and wildlife habits. Water Pollution Control works with volunteer groups. For instance, the Boy Scouts installed butterfly moats within the Elm Street detention basin. This volunteer effort helped establish and improve ecosystem infrastructure to encourage butterfly inhabitation. The City continues to find opportunities with volunteer organizations to promote wildlife habitats.	Planning Strategies	Medium	Existing	Office of Emergency Preparedness function within City ordinances and codes	Water Pollution Control and Public Works Departments	Ongoing	Natural riparian corridors restored and preserved result in improved water quality.		Low	Stormwater Sales Tax funds & Regional Detention funds
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.													
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing	The city continues to maintain up-to-date flood maps and tracks any LOMR etc. Current flood maps are dated May 2013	Floodplain Management	High	New and Existing	Office of Emergency Preparedness and Public Works Department functions within City ordinances and codes	Public Works Department and Office of Emergency Preparedness	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.		Low	City General Funds
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2020	Ongoing	The City adopted NFIP in October 1991 and has been a CRS programs participant since 10/1991. The City continues to participate in the program completing mandatory maintenance as required by program regulations.	Floodplain Management	High	New and Existing	Office of Emergency Preparedness and Public Works Department functions within City ordinances and codes	Public Works Department and Office of Emergency Preparedness	Ongoing	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.		Low	City General Funds
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.													
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2020	Ongoing	The City of Independence, since 1982, has worked with property owners, using city, State and Federal funding, to buyout over 58 properties that were considered repetitive loss or severe repetitive loss properties. The City continues to apply for funding opportunities to remove targeted repetitive loss properties.	HMGP - Flood Buyouts	High	Existing	Emergency Preparedness, Public works and Water Pollution Control function within Code of Ordinances	Public Works	Ongoing	Initial high cost but prevents future flooding of properties that have had history of high cost flood damage		High	City general funds and/or grant funding
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2020	Ongoing	The City of Independence constantly tries to identify potential funding sources to mitigate flood losses to repetitive properties by encouraging owners and businesses to elevate their structures in flood prone areas	Structural and Non-Structural Flood Mitigation	Med	Existing	Emergency Preparedness, Public works and Water Pollution Control function within Code of Ordinances and as Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2018 codes (January 2019)	Public Works	Ongoing	Initial high cost but prevents future flooding of properties that have had history of high cost flood damage		High	Private Sector and City general funds and/or grant funding

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Elevate public facilities, commercial businesses, and residential structures to reduce flood risk.	2020	Ongoing	The City is a participating community in the National Flood Insurance Program (NFIP). New development requires elevation of structures above the base flood elevation (BFE) determined for the 1% storm with 1 foot of freeboard. Information is based on the 2017 flood insurance rate maps (FIRM) adopted January 2017. Building above the 1% BFE helps reduce flooding potential.	Flood Risk Mitigation	High	New		Public Works	Ongoing	Raising the structure's base floor elevation versus the base flood elevation reduces risk of flooding for larger storm events (i.e. the 1% or 100-year frequency storm).		Low	Pubic/private partnering
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2020	Ongoing	The City's Water Pollution Control Department and Office of Emergency Preparedness works with property owners and other stakeholders to develop and implement flood mitigation strategies which promotes protection of these items	Elevation of Mechanical Systems/Risk Mitigation	High	Existing	City departmental functions within City ordinances and codes	Water Pollution Control and Office of Emergency Preparedness	Ongoing	Low/no cost mechanism to increase public safety and reduce high cost flood damages		Low	City general funds and/or grant funding
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2020	Ongoing	The City owns the water, electrical and sewer utilities and assess their facilities, distribution systems, etc. for vulnerability to flooding. Each vulnerability is evaluated and where applicable, the Utility tries to retrofit or modify the facility to reduce flood risk.	Risk Reduction by Mitigation	Medium	New & Existing	City departmental functions within City ordinances and codes and Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2018 codes (January 2019)	City Utility Departments	Ongoing	While initial cost is high, will reduce recovery and replacement costs from flooding events		High	City general funds and/or grant funding
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2020	Ongoing	All City departments work to reduce flood damages to infrastructure when designing new projects and mitigate current facilities as funding is available.	Elevation of Mechanical Systems/Risk Mitigation	High	New & Existing	City departmental functions within City ordinances and codes and Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2018 codes (January 2019)	All City Departments	Ongoing	While this may increase building and development costs, will reduce significant flood impacts		Medium	City general funds and/or grant funding
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2020	Ongoing	The City of Independence constantly tries to identify potential funding sources to mitigate flood losses to repetitive properties by encouraging owners and businesses to retrofit their structures to prevent flooding. The City will be to partner with the US Army Corp of Engineers through their Silver Jackets program, to help provide flood mitigation strategies for vulnerable structures.	Structural and Non-Structural Flood Mitigation	High	Existing	Emergency Preparedness, Public works and Water Pollution Control function within Code of Ordinances and as Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2018 codes (January 2019)	Public works and Office of Emergency preparedness	Ongoing	Initial high cost but prevents future flooding of properties that have had history of high cost flood damage		High	Private Sector and City general funds and/or grant funding

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Identify storm sewer and waste water systems to identify and upgrade areas where infrastructure needs repair, replacement, or upgrade	2020	Ongoing	The City of Independence is constantly growing, changing, expanding. Existing stormwater systems might not be adequate to properly contain, control, or convey stormwater flow, which increases the potential for flooding of structures and properties. The Stormwater Sales Tax and Program provides a system of project evaluation and rating to prioritize stormwater improvement projects throughout the city. Since its inception in 2000, the program has completed over 100 projects, helping to reduce flood occurrences.	System Upgrades and Rehabilitation	High	Existing	Emergency Preparedness, Public Works and Water Pollution Control function within Code of Ordinances and as Regulated through the adoption of NFIP CRS programs (October 1991) and IBC 2018 codes (January 2019)	Public Works, Water Pollution Control, Office of Emergency Preparedness	Ongoing	High cost of repair, but can result in extremely high flood losses if there is a system failure or overload		High	Stormwater Sales Tax and sanitary sewer fee/rates
Work with partner agencies to implement flood inundation prediction capability.													
**Implement flood prediction software programs in coordination with existing systems already utilized by surrounding jurisdictions	2025	Ongoing	Develop software and hardware systems in the Emergency Operations Center to help predict flooding throughout the city	Emergency Response	Medium	New	Office of Emergency Preparedness function within City ordinances and codes	Water Pollution Control and Office of Emergency Preparedness	Unknown	Will ensure that citizens are prepared real time for flood events.		Medium	Unknown
Severe Winter Weather													
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of severe winter weather.													
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Ongoing	The City of Independence Power and Light Department does not have any ordinances requiring underground placement of electrical infrastructure but has extensive mitigation programs customers can choose to participate in that place electric lines underground. Customers can pay for a portion of the cost over a period of time through their electric bill.		High	Existing	Power & Light function within City ordinances and codes	City's Power and Light Department	On-going	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.		High	City's General Funds and HMGP monies
Budget for the incremental replacement of existing above-ground utility lines with underground utility lines.	2010	Ongoing	The City has extensive mitigation programs customers can choose to participate in that place electric lines underground. Customers can pay for a portion of the cost over a period of time through their electric bill.		High	Existing	Power & Light function within City ordinances and codes	City's Power and Light Department	On-going	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.		Medium	City's General Funds and HMGP monies
Offer incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Ongoing	The City has extensive mitigation programs customers can choose to participate in that place electric lines underground. Customers can pay for a portion of the cost over a period of time through their electric bill.		High	Existing	Power & Light function within City ordinances and codes	City's Power and Light Department	On-going	Would reduce recovery costs, but would have high initial implementation.		High	City's General Funds and HMGP monies
Enhance public awareness of severe winter weather mitigation and preparedness activities.													

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Collect and disseminate public education materials that address winter weather safety, preparedness and mitigation activities.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of severe winter weather.		High	Existing	Office of Emergency Preparedness function within City ordinances and codes	Office of Emergency Preparedness	On-going	No/low cost mechanism to increase public safety.		Low	City's General Funds
Develop and conduct a public education and awareness campaign on properly winterizing homes.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of severe winter weather.		High	Existing	Office of Emergency Preparedness function within City ordinances and codes	Office of Emergency Preparedness	On-going	No/low cost mechanism to increase public safety.		Low	City's General Funds and EMPG monies
Partner with emergency services, public health and community groups to conduct special public education events, such as a Severe Winter Weather Awareness Day.	2010	Ongoing	The City's Office of Emergency Preparedness has on-going programs to educate the public about "all Hazards" safety including severe winter weather. These programs include standardized educational materials coordinated with local and regional partners. These partners include City Departments, local faith based organizations and many other public and private groups. The Office of Emergency Preparedness also participates in local and regional public educational events such as the Safety City Preparedness show.		High	Existing	Office of Emergency Preparedness function within City ordinances and codes	Office of Emergency Preparedness	On-going	No/low cost mechanism to increase public safety.		Low	City's General Funds
Provide vulnerable populations with winter weather safety, preparedness and mitigation information.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of severe winter weather.		High	Existing	Office of Emergency Preparedness function within City ordinances and codes	Office of Emergency Preparedness	On-going	No/low cost mechanism to increase public safety.		Low	City's General Funds and EMPG monies
Ensure at-risk, low income and elderly residents have adequate heat in their homes.													
Partner with community service organizations to provide materials and volunteer labor to assist at-risk groups, low income residents and the elderly with winterizing their homes.	2010	Ongoing	Although the City does not have a program in place to assist at-risk groups to winterize their homes. The city does promote its Citizen Corps volunteers to work with other private organizations involved in these type programs.		Med	Existing	Office of Emergency Preparedness within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low cost mechanism to support vulnerable populations access to heating to prevent death/injury from exposure to winter storms.		Low	General Funds and EMPG grants

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Work with utility providers to develop and implement programs to reduce, eliminate or defer home heating costs for elderly, low income and at-risk people in the community.	2010	Ongoing	The City of Independence has several programs to reduce or eliminate home heating cost. The Independence Rate Assistance Program (IRAP) works with qualified low income families, elderly and special needs individuals to cut their energy bills in half. The I-SHARE program is where the City budgets money each year to match a dollar for dollar contributions donated by community partners to pay utility assistance for qualified low income households. The City's Power and Light Department also has an Average Share program where utility customers can average their electric bills over a year's period of time. The City has also started a program to pay utility customers \$20.00 for every energy assistance application to apply for the Federal energy assistance program.		High	Existing	Power & Light function within City ordinances and codes	City's Power and Light Department	On-going	High Cost mechanism to support vulnerable populations access to heating but can prevent high numbers of death/injury from exposure to winter storms.		High	City's General Funds and grants
Ensure local governments and human services agencies are aware of facilities across the Kansas City area with generators or emergency power that can be used as shelters in the event of severe winter weather.													
Consider the adoption of policy A77:P77s requiring generators or other emergency power systems in the construction of new public facilities.	2010	Ongoing	The City has policies in place for generators required in "Safe Room" applications. The City is also working with MARC to obtain funding to pre-wire Red Cross identified shelters for generators through UASI Mass Care initiatives. The City's Office of Emergency Preparedness has an on-going program to develop relationships with potential shelters located throughout the City to pre-wire or purchase generators for their facilities		High		Office of Emergency Preparedness, Water Pollution Control and Public Works Department functions within City ordinances and codes	Public Works, Office of Emergency preparedness	Ongoing	Fairly high cost program to implement, but would help ensure continuity of government operations.		Medium	City's General Fund, Grants, or other future sources
Retrofit otherwise suitable existing facilities with generators for emergency power.	2010	Ongoing	The City has numerous shelters that have back-up power, but the county continues to work with existing and future shelter locations to find ways to retrofit them with emergency power.		High	Existing	Office of Emergency Preparedness functions within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Fairly high cost installation price but will ensure continuity of shelter operations.		Medium	City's General Fund, Grants, or other future sources
Since traffic accidents account for 70% of injuries related to ice and snow, develop and implement programs to improve road conditions and protect motorists during severe winter weather													
Budget for the stockpiling of sand, salt and other materials necessary to reduce or eliminate ice on roadways and improve road conditions.	2010	Ongoing	This expense is outlined in the Public Works budget on a yearly basis and funding amount is reviewed every year.		Low	New	Public Works function within Code of Ordinance	Public Works	Ongoing	Will ensure continued open roadways.		Medium	General Fund

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In an effort to reduce the number of people on the roadways during periods of severe winter weather, develop and implement "snow day" plans and policies for non-essential personnel and encourage private sector and non-profit employers in the community to	2010	Ongoing	The City does have procedures in-place regarding "snow days" for public employees and continues to work on educating non-governmental organizations on the hazards of employees on roadways during severe winter weather.		Low	New	Public works and Law Enforcement function within Code of Ordinance	Public Works	Ongoing	Short-term potential lost productivity will be offset by savings from potential employee injury and also reduce traffic and delays that would otherwise occur.		Low	General Fund
Partner with area local governments to establish a mutual aid system for sand, salt and other materials and their delivery resources (i.e., trucks, crews, etc.).	2010	Ongoing	The City's Public Works Department is part of a regional Public Works Mutual Aid Agreement through the MARC organization		Medium	New	Public Works function within Code of Ordinance	Public Works	Ongoing	Low cost mechanism to cost share and increase availability of sand stockpiles.		Low	General Fund
Work with area local governments and MARC to develop a regional "pool" of sand, salt and other materials necessary to reduce or eliminate ice on roadways.	2010	Ongoing	The City's Public Works Department works with regional partners regarding salt and sand contracts		Medium	New	Public Works function within Code of Ordinance	Public Works	Ongoing	Low cost mechanism to cost share and increase availability of sand stockpiles.		Low	General Fund
Drought													
Assess the vulnerability of water systems.													
Conduct an assessment of the vulnerability and water use demand of local water systems by utilizing the procedures in the Missouri Drought Plan.	2010	Ongoing	The City of Independence Water Department continually assess the demands on the water system and has plans in place for drought emergencies		High	Existing	Water Department function within City ordinances and codes along with procedures in Missouri Drought Plan	Independence Water Department	Ongoing	Relatively low cost mechanism to inform mitigation strategies		Low	City's General Funds
Encourage improvements to water system infrastructures to reduce vulnerability to drought and meet water use demands.													
Budget for infrastructure improvements to municipal water systems.	2010	Ongoing	The City has implemented a Leak detection system to determine if underground water pipe infrastructures are leaking water.		High	Existing	Water Department and Water Pollution Control Department function within City ordinances and codes	City's Water Department	On-going	Targeted and phased improvements will improve efficiency and reduce future recovery and replacement costs.		High	City's General Funds
Identify and apply for state and federal grants to improve water treatment plants, transmission systems, water mains and related infrastructure.	2010	Ongoing	The City consistently continues to apply for State and Federal grants for water system infrastructure improvements		High	New	Water Department and Water Pollution Control Department function within City ordinances and codes	City's Water Department	On-going	High cost mechanism to implement but greatly increases water conservation measures.		High	City's General Fund, Grants, or other future sources
Encourage water conservation efforts by commercial, industrial and private water users.													
Develop and implement a program to encourage voluntary water conservation.	2010	Ongoing	City works partners the Water Pollution Control Division to conduct local public educational programs. This includes supplying literature and conducting presentations at local schools and civic events.		Medium	Existing	Water Department and Water Pollution Control Department function within City ordinances and codes	City's Water Department	On-going	Low cost mechanism to increase support water conservation measures.		Low	City's General Funds
Enhance public awareness of drought, drought mitigation, state and local drought response actions and water conservation measures.													

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Develop and conduct public education and awareness programs on drought mitigation, drought response and water conservation.	2010	Ongoing	City Water Department partners with the Water Pollution Control Division to conduct local public educational programs. This includes supplying literature and conducting presentations at local schools and civic events.		Medium	New	Water Department function within City ordinances and codes	City's Water Department	On-going	Low cost mechanism to support drought response.		Low	City's General Funds
Ensure plans and procedures addressing local drought response, drought mitigation and long-term water planning are developed.													
Develop local procedures implementing the provisions of the Missouri Drought Plan.	2010	Ongoing	City is constantly utilizing local, state and federal programs and guidance regarding long term planning				Water Department function within City ordinances and codes along with procedures in Missouri Drought Plan	Independence Water Department	Ongoing	Low cost mechanism to support drought response.		Low	City's General Funds
Review the Missouri Drought Plan, as well as local drought plans available from MDNR, and develop a local drought plan.	2010	Ongoing	City is constantly utilizing local, state and federal programs and guidance regarding long term planning		High		Water Department function within City ordinances and codes along with procedures in Missouri Drought Plan	Independence Water Department	Ongoing	Low cost mechanism to support drought response.		Low	City's General Funds
Working with MARC, develop drought plans and water conservation programs.	2010	Ongoing	City is utilizing local programs and guidance and coordinates with MARC regarding water drought and conservation programs in local plans				Water Department function within City ordinances and codes along with procedures in Missouri Drought Plan	Independence Water Department	Ongoing	Low cost mechanism to support drought response.		Low	City's General Funds
Heat Waves													
Enhance public awareness of the hazards associated with heat waves, precautionary measures and area heat wave mitigation and preparedness activities.													
Collect and disseminate public education materials that address heat wave safety, preparedness and mitigation activities.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards heat waves can cause. This year the City also adopted and implemented the regional "Heat Health Warning System" which will bring advanced notification and education to citizens regarding the forecasting of high heat conditions.		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds

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Develop and conduct a public education and awareness campaign on properly weather stripping homes.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards heat waves can cause. The educational program also includes information about making residents homes more energy efficient. The City's power and Light Department also has an educational program to help residents improve their homes energy efficiency and will go to residents homes to survey the structure.		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Preparedness and Power and Light Department	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds
Provide vulnerable populations with public education materials that address heat wave safety, preparedness and mitigation activities.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards heat waves can cause. This year the City also adopted and implemented the regional 'Heat Health Warning System' which will bring advanced notification and education to citizens regarding the forecasting of high heat conditions.		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds
Work with the media to publish special newspaper sections or conduct periodic broadcasts with emergency information on extreme heat.	2010	Ongoing	This year the City also adopted and implemented the regional 'Heat Health Warning System' which will bring advanced notification and education to citizens regarding the forecasting of high heat conditions. This program is designed to communicate standardized warning guidelines and conditions to the public through partnering organizations such as the NWS and local new media outlets. The City's Office of Emergency Preparedness also participates with the regional Integrated Warning Team. This group is task to bring all organizations with responsibilities regarding warning the public about severe weather events together to develop more resilient and effective warnings.		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Management	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds
Ensure at-risk, low income and elderly residents have adequate air conditioning (or fans) and ventilation in their homes.													

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Identify at-risk, low income and elderly residents and develop a database and map (or GIS layers) of their places of residence.	2010	Ongoing	The office of Emergency Preparedness is currently exploring ways to get at-risk populations into a GIS database. One option is to use a Mass Notification service such as Everbridge or Regroup.		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Preparedness	On-going	Medium cost method to identify at-risk populations to prevent injury of death		Medium	City's General Fund, Grants, or other future sources
Partner with community service organizations and area businesses to provide air conditioners and/or fans to at-risk groups, low income residents and the elderly.	2010	Ongoing	The City's Office of Emergency Preparedness has numerous City facilities that are air conditioned and available to residents during times of severe heat conditions. The City also coordinates with the United Ways regional 211 information system to help residents identify local "Cooling Centers"		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to support resiliency for vulnerable populations during heat waves.		Low	City's General Fund
Ensure local governments and human services agencies are aware of air conditioned facilities across the Kansas City metropolitan area that can be used as shelters in the event of a heat wave.													
Partner with MARC, local public health agencies, emergency management agencies, the American Red Cross, Salvation Army and other stakeholders to inventory public, private and non-profit facilities that are air conditioned and can be used as "heat emergency shelters" in the event of a heat wave.	2010	Ongoing	The City of Independence works with several local and regional stakeholders to ensure the City has numerous "Cooling Centers" open to the public during times of sever heat waves.		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to identify mitigation strategies for populations vulnerable to heat waves.		Low	City's General Fund
Retrofit otherwise suitable existing facilities with air conditioning systems and designate them as shelters for use during heat waves.	2010	Ongoing	Currently the City has numerous shelter sites, but efforts to continue increasing shelter facilities through the City's educational preparedness programs and Faith Based Initiative are ongoing. Many of these sites have air-conditioning but efforts continue to try and retrofit those shelters that are not climate controlled.		High	Existing	Emergency Preparedness utilizes the Safe Shelter Partnership for cooling centers in addition to the Salvation Army and United Way	Office of Emergency Preparedness	Ongoing	Medium cost mechanism to assure populations vulnerable to heat waves are protected.		Medium	City's General Fund, Grants, or other future sources
Ensure programs and procedures to mitigate, prepare for and respond to heat waves are developed and implemented.													
Develop local heat emergency plans or heat wave annexes to local emergency operations plans.	2010	Ongoing	All weather emergency procedures and plans are continually being updated.		High	Existing	Office of Emergency Preparedness function within City ordinances and codes	Office of Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	EMPG and City's General Fund
Partner with public safety agencies, local public health agencies and community groups to develop a program to regularly check on elderly, low income and at-risk people in the community during heat waves.	2010	Ongoing	The City has a severe heat plan that coordinates with public and private agencies to check on at-risk populations in the City. This is an on-going program continually identifying additional partners such as CERT, VIPS and faith based organizations.		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Applies to Community Assets (New/Existing)	Existing Local Planning Mechanism through which the action was/will be implemented	Primary Agency Responsible for Implementation / Administration	Date for Completion	Cost / Benefit Review	Target Capacity	Estimated Cost (\$)	Funding Source
Work with community groups to sponsor a program to encourage people to think of those who require special assistance (this effort can be incorporated into Neighborhood Watch, CERT or similar programs).	2010	Ongoing	The City has a severe heat plan that coordinates with public and private agencies to check on at-risk populations in the City. This is an on-going program continually identifying additional partners such as CERT, VIPS and faith based organizations.		High	Existing	Office of Emergency Preparedness, City Health Department function within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds
Dam Failures													
Enhance public awareness of the hazards associated with dam failures, as well as mitigation and preparedness activities.													
Collect and disseminate public education materials that address dam safety, preparedness and mitigation activities.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of dam failures.		High	Existing	Office of Emergency Preparedness, within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds
Provide property owners in or near the inundation pathways of dams with information on dam safety, preparedness and mitigation activities.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of dam failures. The City has two potential large dams that would affect our population should it fail.		High	Existing	Office of Emergency Preparedness, within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds
Work with MDNR and USACE to conduct a public education campaign to inform citizens living near the inundation pathways of dams of the need to be familiar with the emergency action plans for these dams.	2010	Ongoing	The City's Office of Emergency Preparedness has an on-going program to educate the public about "All hazards" preparedness and safety. This program includes standardized educational materials that address the hazards of dam failures.		High	Existing	Office of Emergency Preparedness, within City ordinances and codes	Office of Emergency Preparedness	On-going	Low cost mechanism to increase public safety.		Low	City's General Funds
Levee Failures													
Improve response planning for Levee Failure													
Work with the water department to ensure the levees surrounding the water plant are adequate and properly maintained.	2015	Ongoing		Local Plans and Regulations	High	New & Existing	EOP	Office of Emergency Preparedness	Ongoing	Low cost mechanism to increase public safety.		Low	City's General Funds

Lee's Summit 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of approved materials that reduce the damaging effects of tornadoes and high wind events.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2020	Ongoing	2018 International codes were adopted in 2019.	Unspecified	Unspecified	Every three years	A guide for the safe construction of the built environment.	development dept	2500	General Fund
Consider adopting ordinances or regulations requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2015	Ongoing		Local Plans and Regulations	Low	TBD	Provide emergency shelter for the occupants of structures without basements.	development dept	Varies	Private/Grants for Public Projects
Provide education/updates to designers, builders, residents on changes to newly adopted codes related to minimizing storm damage	2015	Ongoing		Education and Awareness Programs	High	Ongoing		development dept	TBD	TBD
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2015	Ongoing		Structure and Infrastructure Projects	Low	TBD	Provide emergency shelter for the occupants of structures without basements.	public works	TBD	General Fund/Public Grants
Encourage the construction of safe rooms and tornado shelters in public and private buildings.										
Work with chambers of commerce, school districts, corporations, homeowners, developers etc. to promote benefits of safe rooms and community shelters.	2015	Ongoing		Education and Awareness Programs	High	Ongoing	TBD	emergency management	Unknown	Private/Grants for Public Projects
Evaluate warning systems in the City.										
Utilize ongoing communication studies and surveys to determine how residents receive severe weather warnings. Determine what is the most effective method(s) for the cost.	2020	Ongoing	Continued monitoring and evaluation of notification and warning systems available in our community to include Nixle, social media, NOAA weather radios, and outdoor warning systems.	Unspecified	Unspecified	Ongoing	Find cost effective warning systems to enhance mass notification.	emergency management	TBD	General Fund/Public Grants
Increase public awareness of severe weather notification systems available within the City.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Increase public awareness of severe weather notification systems available within the City through social media, school Safety Education Program, civic presentations, and printed and electronic publications.	2020	Ongoing	Public education and community outreach occurs using variety of mechanisms such as the public education programs delivered in the schools, social medial using systems like hootsuite, and in formal presentations. Electronic and printed materials are available in website and in city facilities.	Unspecified	Unspecified	Ongoing		emergency management	TBD	General Fund
Update the Local Emergency Operating Plan										
Update Local Emergency Operation Plan to currently accepted framework.	2020	Ongoing	EOP is currently under revision transitioning framework from functional annexes to Emergency Support Functions	Unspecified	Unspecified	18 months, process began in 2019	TBD	emergency management	TBD	General Fund
Floods										
Continue to integrate flood mitigation strategies with projects and activities designed to protect , restore or enhance ecosystems and the environment and create recreational opportunities for the community.										
In concert with existing comprehensive and land use plans, acquire flood-prone property for use as open space or park land.	2015	Ongoing		Natural Systems Protection	Medium	Ongoing		development dept	TBD	TBD
Require storm water studies to determine the need for detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	Minimizes the impact of flooding downstream from new development	development dept	TBD	Private
**Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Ongoing		Unspecified	Unspecified	Ongoing		development dept		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Ongoing		Unspecified	Unspecified	Ongoing		development dept		
**Enforce ordinances and comprehensive development plans that prohibit residential and commercial development in flood plains or flood-prone areas. Maintain updated FEMA Flood Plain maps.	2015	Ongoing		Local Plans and Regulations	High	Ongoing	unknown	development dept		Private
**Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Ongoing		Unspecified	Unspecified	Ongoing		development dept		
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing		Unspecified	Unspecified			emergency management		
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing		Unspecified	Unspecified			emergency management		
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing		Unspecified	Unspecified			emergency management		
Examine feasibility of permanent flood barricades for roadways that experience recurring flooding.										
Determine the roadways that are prone to flooding and examine the cost to benefit ratio for installing permanent flood barricades. Consider applying for FEMA's Pre-Disaster Mitigation Grant to aid in costs.	2020	Ongoing		Unspecified	Unspecified	TBD	General Fund	public works		
Examine repetitive flood loss properties and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2015	Ongoing		Structure and Infrastructure Projects	Low	Ongoing		floodplain manager	TBD	General Fund/Bonds/Grants

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2015	Ongoing		Unspecified	Unspecified			floodplain manager		
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2015	Ongoing		Unspecified	Unspecified			floodplain manager		
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2015	Ongoing		Structure and Infrastructure Projects	Medium	Ongoing	Determine when it is in the best interest of the City and property owner to remove structures or provide features to protect the property from flooding.	floodplain manager	TBD	General Fund/Public Grants/Bonds/Capital Improvement Projects
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Ongoing		Unspecified	Unspecified			public works		
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing		Unspecified	Unspecified			emergency management		
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing		Unspecified	Unspecified			emergency management		
Improve flood hazard assessments and flood mapping.										
**Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Ongoing		Unspecified	Unspecified			development dept		
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Ongoing		Unspecified	Unspecified			development dept		
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Unspecified	Unspecified			development dept		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Ongoing		Unspecified	Unspecified			development dept		
**Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Ongoing		Unspecified	Unspecified			development dept		
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing		Unspecified	Unspecified			development dept parks & recreation		
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing		Unspecified	Unspecified			development dept parks & recreation		
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented jointly.	2010	Ongoing		Unspecified	Unspecified			development dept parks & recreation		
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing		Unspecified	Unspecified			development dept parks & recreation		
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing		Unspecified	Unspecified			development dept parks & recreation		
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats.	2010	Ongoing		Unspecified	Unspecified			development dept parks & recreation		
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2015	Ongoing		Unspecified	Unspecified			floodplain manager		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2015	Ongoing		Unspecified	Unspecified			floodplain manager		
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	Unspecified			floodplain manager		
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing		Unspecified	Unspecified			floodplain manager		
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems(i.e., furnaces, hot water heaters, electrical panels, etc.).	2015	Ongoing		Education and Awareness Programs	Low	Ongoing	Minimize the cost of flooding by removing equipment that may be damaged.	floodplain manager	TBD	Private
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Ongoing		Unspecified	Unspecified			floodplain manager		
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Ongoing		Unspecified	Unspecified			floodplain manager		
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing		Unspecified	Unspecified			development dept		
Water Utilities is assessing their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	unknown	water utilities	TBD	Enterprise Fund/Bonds/Capital Improvement Projects
Severe Winter Weather										
Continue to review, revise, and enhance snow and debris removal plan each year.										
Evaluation of Automated Bridge De-icing systems.	2020	Ongoing	Consider options to mitigate risk on elevated roadways.	Structure and Infrastructure Projects	Medium	TBD		public works	TBD	
Examine possibility of limits on street parking during snow removal operations.	2020	Ongoing	Consideration of strategies to be considered during review process.	Local Plans and Regulations	Medium	Annually		public works	TBD	
Heat										
Ensure Water storage capacity can meet service demands during times of excessive water usage, during drought and high temperature periods.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Maintain agreements with near by water districts that we interconnect with, allowing opportunities to gain access to additional drinking water supplies.	2020	Ongoing		Local Plans and Regulations	Medium	annual agreement review		water utilities	TBD	

Oak Grove 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes and Severe Thunderstorms										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		building code official	Undetermined	General Revenue, EMPG
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		building code official	Undetermined	General Revenue, EMPG
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		building code official	Undetermined	General Revenue, EMPG
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2020	Ongoing	Continuous Project	Local Plans and Regulations	Medium	Continuous Project		emergency management	Undetermined	General Revenue, EMPG
Encourage construction of community tornado shelters in office complexes, factories, apartment complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regulations requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2020	Ongoing	Continuous Project	Local Plans and Regulations	Medium	Continuous Project		planning	Undetermined	General Revenue, EMPG
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2020	Ongoing	Continuous Project	Education and Awareness Programs	Medium	Continuous Project		emergency management	Undetermined	General Revenue, FEMA Shelter Grant, EMPG
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Require that utility lines in new construction be underground.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		planning	Undetermined	General Revenue, EMPG
Urge electric utilities to anchor or strengthen above-ground transmission lines, poles and similar structures.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		planning	Undetermined	General Revenue, EMPG
Urge utility providers to replace existing above-ground utility lines with underground utility lines.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		planning	Undetermined	General Revenue, EMPG
Ensure public facilities have shelters and emergency plans to accommodate staff and visitors during tornadoes/natural hazards.										
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2020	Ongoing	Continuous Project	Local Plans and Regulations	Medium	Continuous Project		public works	Undetermined	General Revenue, EMPG
In facilities with no designated shelters, assist the facility to identify best possible shelter spaces and make plans for severe weather emergencies.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2020	Ongoing	Continuous Project	Education and Awareness Programs	Medium	Continuous Project		public works	Undetermined	General Revenue, FEMA Shelter Grant, HMGP
Increase local ability to provide warning and information about severe weather through NOAA All Hazards Radio, Outdoor Warning Systems, Indoor Communications, Social Media, IPAWS and other, as yet undetermined technologies.										
Conduct public information campaigns for NOAA All-Hazards Radio, IPAWS, Indoor Pager Systems, Social Media, Mobile Phone apps, text-email alerting, reverse 911 and other emergency information technologies.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials and perform various educational activities on the benefits of safe rooms.	2020	Ongoing	Continuous project	Education and Awareness Programs	High	Continuous project	Unknown, since there have been no tornadoes affecting Oak Grove	emergency management	Unknown	General Revenue, EMPG
Increase public awareness of family and individual preparedness actions they can take to prepare for tornadoes and severe storms through public education activities.										
Use social media, press releases, poster presentations, websites, speaking opportunities, and other means as available to educate the public about individual, family, organization, and community preparedness relating to tornadoes and severe storms.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		emergency management	Unknown	General Revenue and EMPG
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.										
Research information sources for severe weather information, including information from radar, satellite, spotters, observation stations, forecasts, and other jurisdictions and seek ways to evaluate such information in a timely manner.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG
Increase the capability for local government facilities to provide emergency electric power in case of long-term, weather related power failure.										
Install and maintain whole building backup electric power capability for local government infrastructure.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		public works	Undetermined	General Revenue, Water Enterprise Fund, Sewer Enterprise Fund, HMGP
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous project,		planning	Undetermined	General Revenue, EMPG, HMGP
Enhance public awareness and education efforts related to flooding.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Encourage home owners and businesses to purchase flood insurance.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		floodplain manager	Undetermined	General Revenue, EMPG
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		floodplain manager	Undetermined	General Revenue, EMPG
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		floodplain manager	Undetermined	General Revenue, EMPG
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		floodplain manager	Undetermined	General Revenue, EMPG
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		public works	Undetermined	General Revenue, EMPG, HM, NWS, USACE
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		public works	Undetermined	General Revenue, EMPG, HM, NWS, USACE

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG, HM, NWS, USACE
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2020	Deferred	HAZUS requires latest version of ArcGIS Software at \$1500 per copy and investment of significant skilled staff time.	Local Plans and Regulations	High	Continuous Project			Undetermined	General Revenue, EMPG
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2020	Deferred	HAZUS requires latest version of ArcGIS Software at \$1500 per copy and investment of significant skilled staff time.	Local Plans and Regulations	High	Continuous Project			Undetermined	General Revenue, EMPG
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		planning	Undetermined	General Revenue, EMPG
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		planning	Undetermined	General Revenue, EMPG
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2020	Deferred	HAZUS requires latest version of ArcGIS Software at \$1500 per copy and investment of significant skilled staff time.	Local Plans and Regulations	High	Continuous Project			Undetermined	General Revenue, EMPG
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		planning	Undetermined	General Revenue, EMPG, HMPG
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		planning	Undetermined	General Revenue, EMPG, HMPG

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG, HMPG
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		public works	Undetermined	General Revenue, EMPG, HMPG
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as green space or park land.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		planning	Undetermined	General Revenue, EMPG, HMPG
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		planning	Undetermined	General Revenue, EMPG, HMPG
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		public works	Undetermined	General Revenue, EMPG
Plan for flash flooding from upstream dam failure.										
Conduct dam failure inundation studies using Dam Emergency Plans available from Missouri Department of Natural Resources	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		public work	Undetermined	General Revenue, EMPG
Provide reduced flash flooding due to stormwater runoff.										
Conduct a program of inspections for infiltration and inflow of surface water and other stormwater into the sanitary sewer system and consult corrective actions.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		public works	Undetermined	Sewer System Enterprise Fund
Conduct a public education program to educate the public to not discharge water from downspouts and sump pumps into the sanitary sewer system .	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		public works	Unknown	General Revenue and EMPG
Provide greater oversight of new development and construction through development regulations.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		planning	Undetermined	General Revenue, EMPG, HM, NWS, USACE
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		public works	Undetermined	General Revenue, EMPG, HMPG

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG, HMPG
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG, HMPG
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG, HMPG
Severe Thunderstorms										
Increase public awareness of family and individual preparedness actions they can take to prepare for tornadoes and severe storms through public education activities.										
Use social media, press releases, poster presentations, websites, speaking opportunities, and other means as available to educate the public about individual, family, organization, and community preparedness relating to tornadoes and severe storms.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		emergency management	Unknown	General Revenue and EMPG
Increase local ability to provide warning and information about severe weather through NOAA All Hazards Radio, Outdoor Warning Systems, Indoor Communications, Social Media, IPAWS and other, as yet undetermined technologies.										
Increase local ability to provide warning and information about severe weather through NOAA All Hazards Radio, Outdoor Warning Systems, Indoor Communications, Social Media, IPAWS and other, as yet undetermined technologies.	2020	Ongoing	Continuous project	Structure and Infrastructure Projects	Unspecified	Continuous project		emergency management	Unknown	General revenue, EMPG, HMGP
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.										
Obtain enhanced weather information systems and incorporate them into operational plans	2020	Ongoing	Continuous project.	Structure and Infrastructure Projects	High	Continuous project		emergency management	Unknown	General revenue, EMPG, HMGP
Research information sources for severe weather information, including information from radar, satellite, spotters, observation stations, forecasts, and other jurisdictions and seek ways to evaluate such information in a timely manner.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		emergency management	Undetermined	General Revenue, EMPG
Heat										
Incorporate Wet Bulb Global Temperature Heat Index into plans for excessive heat events.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Incorporate Wet Bulb Global Temperature Heat Index into plans for excessive heat events to provide a more scientific measurement of heat stress on persons outdoors.	2020	Ongoing	Continuous project.	Local Plans and Regulations	High	Continuous project.		public works	Unknown	General Revenue and EMPG
Increase local ability to provide warning and information about heat emergencies through NOAA All Hazards Radio, Outdoor Warning Systems, Indoor Communications, Social Media, IPAWS and other, as yet undetermined technologies.										
Conduct public information campaigns for NOAA All-Hazards Radio, IPAWS, Indoor Pager Systems, Social Media, Mobile Phone apps, text-email alerting, reverse 911 and other emergency information technologies.	2020	Ongoing	Continuous project.	Structure and Infrastructure Projects	High	Continuous project.		emergency management	Unknown	General Revenue and EMPG
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.										
Conduct public information campaigns for NOAA All-Hazards Radio, IPAWS, Indoor Pager Systems, Social Media, Mobile Phone apps, text-email alerting, reverse 911 and other emergency information technologies.	2020	Ongoing	Continuous project.	Education and Awareness Programs	High	Continuous project.		emergency management	Unknown	General Revenue and EMPG
Work with venues in the City of Oak Grove and Sni Valley Fire Protection District to plan for cooling centers to be available during times of excessive heat.										
Work with venues in the City of Oak Grove and Sni Valley Fire Protection District to plan for cooling centers to be available during times of excessive heat.	2020	Ongoing	Continuous project.	Local Plans and Regulations	High	Continuous project.		emergency management	Unknown	General Revenue and EMPG
Severe Winter Weather										
Increase local ability to provide warning and information about winter weather emergencies through NOAA All Hazards Radio, Outdoor Warning Systems, Indoor Communications, Social Media, IPAWS and other, as yet undetermined technologies.										
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations including pavement temperature readings.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		emergency management	Unknown	General Revenue and EMPG
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.										
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations including pavement temperature readings.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		emergency management	Unknown	General Revenue and EMPG
Increase public awareness of the hazards and safety actions for severe winter weather through public education.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Use social media, press releases, poster presentations, websites, speaking opportunities, and other means as available to educate the public about individual, family, organization, and community preparedness relating to tornadoes and severe storms.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		emergency management	Unknown	General Revenue and EMPG
Increase the capability to remove snow and ice from streets and highways and otherwise respond to severe winter weather.										
Through building development regulations, plan for areas that snow can be pushed to without blocking mailboxes, fire hydrants, and driveways.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		public works	Unknown	General Revenue and EMPG
Increase the capability to for local government facilities to provide emergency electric power in case of long-term, weather related power failure.										
Install and maintain whole building backup electric power capability for local government infrastructure.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		public works	Undetermined	General Revenue, Water Enterprise Fund, Sewer Enterprise Fund, HMGP
Increase the capability to shelter persons stranded by closing of Interstate Highways due the severe winter weather.										
Install and maintain whole building backup electric power capability for local government government buildings, suitable as shelters	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		public works	Undetermined	General Revenue, HMGP

Raytown 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps for 2020 Plan	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
b. Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Deferred	No initiatives at this time							
c. Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Deferred	No initiatives at this time							
d. Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Deferred	No initiatives at this time							
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
a. Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Deferred	No initiatives at this time							
b. Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Deferred	The City's Office of Emergency Management has an ongoing program to educate the public about "All hazards" preparedness and safety through MARC regional initiatives. This program includes standardized educational materials that address the hazards of tornadoes and safe rooms.		Medium	Ongoing	No/low cost mechanism to increase public safety.		Low	Unknown

c. Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deferred	No initiatives at this time							
Enhance public awareness of tornado mitigation and preparedness activities.										
Increase public awareness of actions that residents can take to prepare for tornadoes. Use social media to educate residents about tornado preparedness.	2020	Ongoing	Continuous Project	Education and Awareness Program	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Increase public awareness of imminent threat of tornado. Add Nixle as a means to broadcast tornado watches and warnings.	2020	Ongoing	Continuous Project	Notifications	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Deferred	The City continues to review these shelters on a regular basis assuring their operational readiness		Medium	Ongoing	No/low cost mechanism to increase public safety.		Low	Unknown
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred	City continues to retrofit shelters as funding opportunities and facilities become available		Medium	Ongoing	High cost to retrofit existing buildings but can also prevent large number of injuries and fatalities. Some cost could be subsidized by tax incentives and grants		High	Unknown
Examine alternative methods of notification / awareness for citizens e.g. reverse 911, social media										
Examine alt methods of public warning systems for all hazards	2015	Deferred	Review implementation of alternate warning systems including reverse 911 and social media	Education and Awareness Programs	Medium	ongoing	Medium cost to implement technology but can have large public safety benefits		Medium	Unknown
Increase public awareness and understanding the benefits of "safe rooms."										

Develop, distribute informational materials on safe rooms.	2010	Deferred	Emergency Management has an ongoing program to educate the public about "All hazards" preparedness and safety through MARC regional initiatives. This program includes standardized educational materials that address the hazards of tornados and safe rooms.		Low	Ongoing	No/low cost mechanism to increase public safety.		Low	City general funds and EMPG monies
Severe Thunderstorms										
Discourage new development in floodplains and flood-prone areas.										
Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Deferred			Low	Ongoing	Will reduce vulnerabilities to flood.		Low	Unknown
Enhance public awareness of severe thunderstorm mitigation and preparedness activities.										
Increase public awareness of actions that residents can take to prepare for severe thunderstorms. Use social media to educate residents about severe thunderstorm preparedness.	2020	Ongoing	Continuous Project	Education and Awareness Program	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Increase public awareness of imminent threat of severe thunderstorms. Add Nixle as a means to broadcast severe thunderstorm watches and warnings.	2020	Ongoing	Continuous Project	Notifications	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Floods										
Enhance public awareness and education efforts related to flooding.										
Increase public awareness of the danger of flash floods. Use social media to educate residents about the danger of flash floods.	2020	Ongoing	Continuous Project	Education and Awareness Program	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Increase public awareness of imminent threat of flash floods. Add Nixle as a means to broadcast flash flood watches and warnings.	2020	Ongoing	Continuous Project	Notifications	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue

Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Deferred	The City's Office of Emergency Management has ongoing programs to educate the public and businesses about "All hazards" preparedness and safety through MARC regional initiatives. This program includes standardized educational materials that address the hazards of flooding.		Medium	ongoing	No/low cost mechanism to increase public safety.		Low	Unknown
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Deferred	City continues to review construction of storm water protection systems on a regular basis		Low	ongoing	Will prevent flooding for moderate costs		Medium	Unknown
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain map	2010	Ongoing	Continuous Project	Unspecified	Unspecified	Ongoing	Low cost mechanism to inform flood risk.	floodplain manager	Low	Operating Budget
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing	Continuous Project	Unspecified	Unspecified	Ongoing	Low cost mechanism to inform flood risk.	floodplain manager	Low	Operating Budget
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Deferred	City continues to review vulnerabilities to these type of systems		Low	Ongoing	While may increase building, maintenance and development costs, will reduce significant flood impacts		High	Unknown
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Deferred	City continues to review vulnerabilities to these type of systems and look for opportunities to retrofit		Low	Ongoing	While initial cost is high, will reduce recovery and replacement costs from flooding events		High	Unknown
Severe Winter Weather										
Enhance public awareness of severe winter weather mitigation and preparedness activities.										

b. Collect and disseminate public education materials that address winter weather safety, preparedness and mitigation activities.	2010	Deferred	The City's Office of Emergency Management has ongoing programs to educate the public and businesses about "All hazards" preparedness and safety through MARC regional initiatives. This program includes		Low	ongoing	No/low cost mechanism to increase public safety.		Low	Unknown
Increase public awareness of the danger of severe winter weather. Use social media to educate residents about the danger of severe winter weather	2020	Ongoing	Continuous Project	Education and Awareness Program	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Increase public awareness of imminent threat of severe winter weather. Add Nixle as a means to broadcast severe winter weather-related watches and warnings.	2020	Ongoing	Continuous Project	Notifications	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Ensure local governments and human services agencies are aware of facilities across the Kansas City area with generators or emergency power that can be used as shelters in the event of severe winter weather.										
a. Partner with MARC, the American Red Cross, Salvation Army and other stakeholders to inventory public, private and non-profit facilities that have generators or emergency power and can be used as shelters in the event of severe winter weather.	2010	Deferred	City works with regional partners regarding shelter operations and associated resources		Medium	ongoing	No/low cost mechanism to increase public safety.		Low	Unknown
Heat										
Enhance public awareness of excessive heat conditions mitigation and preparedness activities.										
Increase public awareness of the danger of excessive heat conditions. Use social media to educate residents about the danger of excessive heat conditions.	2020	Ongoing	Continuous Project	Education and Awareness Program	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Increase public awareness of imminent threat of excessive heat conditions. Add Nixle as a means to broadcast excessive heat-related watches and warnings.	2020	Ongoing	Continuous Project	Notifications	High	Continuous Project	low cost mechanism to increase public safety	emergency management	Unknown	General Revenue
Ensure local governments and human services agencies are aware of air conditioned facilities across the Kansas City metropolitan area that can be used as shelters in the event of a heat wave.										

Partner with MARC, local public health agencies, emergency management agencies, the American Red Cross, Salvation Army and other stakeholders to inventory public, private and non-profit facilities that are air conditioned and can be used as "heat emergency shelters" in the event of a heat wave.	2010	Deferred	The City works with several local and regional stakeholders to ensure the City residents have access to "Cooling Centers" available to the public during times of severe heat waves.		Low	ongoing	Low cost mechanism to reduce injuries and death from heat related hazards		Low	Unknown
3. Ensure programs and procedures to mitigate, prepare for and respond to heat waves are developed and implemented.										
Consider developing a regional heat emergency plan for the greater Kansas City metropolitan area.	2010	Deferred	City works with regional partners regarding the regional heat emergency plan		Medium	12-31-10	Low cost mechanism to reduce injuries and death from heat related hazards		Low	Unknown
Develop local heat emergency plans or heat wave annexes to local emergency operations plans.	2010	Deferred	City in the process of informational review for development of this annex to the EOP							
Partner with public safety agencies, local public health agencies and community groups to develop a program to regularly check on elderly, low income and at-risk people in the community during heat waves.	2010	Deferred	The City coordinates with regional public and private agencies to check on at-risk populations. This is an on-going program continually identifying additional partners such as CERT, VIPS and faith based organizations.		Medium	12-31-10	Low cost mechanism to reduce injuries and death from heat related hazards		Low	Unknown

Central Jackson County Fire Protection District 2020 Mitigation Strategy (New Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2020	Ongoing		Structure and Infrastructure Projects	medium	ongoing		fire district		
Construct safe rooms or shelters in public facilities	2020	Ongoing		Structure and Infrastructure Projects	medium	ongoing		city and fire district		FEMA grant and EM budget
Ensure Alert, Warning and Mass Notification systems are in place and operational.										
Evaluate the need for new storm sirens or to upgrade technology to ensure that all parts of the fire district's service area, including Blue Springs and Grain Valley, may be warned during severe weather.	2020	Ongoing		Structure and Infrastructure Projects	High	ongoing		fire district		FEMA grant and EM budget

Sni Valley Fire Protection District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes & Severe Thunderstorms										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project	Undetermined	city	General Revenue, EMPG	General Revenue, EMPG
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		city	Undetermined	General Revenue, EMPG
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		city	Undetermined	General Revenue, EMPG
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2020	Ongoing	Continuous Project	Local Plans and Regulations	Medium	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Encourage construction of community tornado shelters in office complexes, factories, apartment complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regulations requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2020	Ongoing	Continuous Project	Local Plans and Regulations	Medium	Continuous Project		city	Undetermined	General Revenue, EMPG
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2020	Ongoing	Continuous Project	Education and Awareness Programs	Medium	Continuous Project		fire district	Undetermined	General Revenue, FEMA Shelter Grant, EMPG
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Require that utility lines in new construction be underground.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		city	Undetermined	General Revenue, EMPG
Urge electric utilities to anchor or strengthen above-ground transmission lines, poles and similar structures.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Urge utility providers to replace existing above-ground utility lines with underground utility lines.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Ensure public facilities have shelters and emergency plans to accommodate staff and visitors during tornadoes/natural hazards.										
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2020	Ongoing	Continuous Project	Local Plans and Regulations	Medium	Continuous Project		city	Undetermined	General Revenue, EMPG

In facilities with no designated shelters, assist the facility to identify best possible shelter spaces and make plans for severe weather emergencies.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2020	Ongoing	Continuous Project	Education and Awareness Programs	Medium	Continuous Project		city	Undetermined	General Revenue, FEMA Shelter Grant, HMGP
Increase local ability to provide warning and information about severe weather through NOAA All Hazards Radio, Outdoor Warning Systems, Indoor Communications, Social Media, IPAWS and other, as yet undetermined technologies.										
Conduct public information campaigns for NOAA All-Hazards Radio, IPAWS, Indoor Pager Systems, Social Media, Mobile Phone apps, text-email alerting, reverse 911 and other emergency information technologies.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials and perform various educational activities on the benefits of safe rooms.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		fire district	Unknown	General Revenue and EMPG
Increase public awareness of family and individual preparedness actions they can take to prepare for tornadoes and severe storms through public education activities.										
Use social media, press releases, poster presentations, websites, speaking opportunities, and other means as available to educate the public about individual, family, organization, and community preparedness relating to tornadoes and severe storms.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		fire district	Unknown	General Revenue and EMPG
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.										
Research information sources for severe weather information, including information from radar, satellite, spotters, observation stations, forecasts, and other jurisdictions and seek ways to evaluate such information in a timely manner.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Increase the capability to for local government facilities to provide emergency electric power in case of long-term, weather related power failure.										
Install and maintain whole building backup electric power capability for local government infrastructure.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		city	Undetermined	General Revenue, Water Enterprise Fund, Sewer Enterprise Fund, HMGP
Floods										
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		city	Undetermined	General Revenue, EMPG

Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2020	Deferred	HAZUS requires latest version of ArcGIS Software at \$1500 per copy and investment of significant skilled staff time.	Local Plans and Regulations	High	Continuous Project			Undetermined	General Revenue, EMPG
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2020	Deferred	HAZUS requires latest version of ArcGIS Software at \$1500 per copy and investment of significant skilled staff time.	Local Plans and Regulations	High	Continuous Project			Undetermined	General Revenue, EMPG
Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project	Undetermined	city	General Revenue, EMPG	General Revenue, EMPG
Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project	Undetermined	city	General Revenue, EMPG	General Revenue, EMPG
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2020	Deferred	HAZUS requires latest version of ArcGIS Software at \$1500 per copy and investment of significant skilled staff time.	Local Plans and Regulations	High	Continuous Project	Undetermined		General Revenue, EMPG	General Revenue, EMPG, HMPG
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		city	Undetermined	General Revenue, EMPG

Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG, HM, NWS, USACE
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG, HM, NWS, USACE
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG, HM, NWS, USACE
Plan for flash flooding from upstream dam failure.										
Conduct dam failure inundation studies using Dam Emergency Plans available from Missouri Department of Natural Resources	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		fire district	Undetermined	General Revenue, EMPG
Severe Winter Weather										
Increase local ability to provide warning and information about winter weather emergencies through NOAA All Hazards Radio, Outdoor Warning Systems, Indoor Communications, Social Media, IPAWS and other, as										
Conduct public information campaigns for NOAA All-Hazards Radio, IPAWS, Indoor Pager Systems, Social Media, Mobile Phone apps, text-email alerting, reverse 911 and other emergency information technologies.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		fire district	Unknown	General Revenue and EMPG
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.										
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations including pavement temperature readings.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		fire district	Unknown	General Revenue and EMPG
Increase public awareness of the hazards and safety actions for severe winter weather through public education.										
Use social media, press releases, poster presentations, websites, speaking opportunities, and other means as available to educate the public about individual, family, organization, and community preparedness relating to tornadoes and severe storms.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		fire district	Unknown	General Revenue and EMPG
Increase the capability to for local government facilities to provide emergency electric power in case of long-term, weather related power failure										

Install and maintain whole building backup electric power capability for local government infrastructure.	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		city	Undetermined	General Revenue, Water Enterprise Fund, Sewer Enterprise Fund, HMGP
Increase the capability to shelter persons stranded by closing of Interstate Highways due the severe winter weather										
Install and maintain whole building backup electric power capability for local government buildings, suitable as shelters	2020	Ongoing	Continuous Project	Structure and Infrastructure Projects	High	Continuous Project		city	Undetermined	General Revenue, HMGP
Heat										
Incorporate Wet Bulb Global Temperature Heat Index into plans for excessive heat events.										
Incorporate Wet Bulb Global Temperature Heat Index into plans for excessive heat events to provide a more scientific measurement of heat stress on persons outdoors.	2020	Ongoing	Continuous Project	Local Plans and Regulations	High	Continuous Project		city	Unknown	General Revenue and EMPG
Increase the ability to gather information on severe weather emergencies through technologies such as NWS Chat, NWS EDD, radar data, and other online data sources and local weather observations.										
Conduct public information campaigns for NOAA All-Hazards Radio, IPAWS, Indoor Pager Systems, Social Media, Mobile Phone apps, text-email alerting, reverse 911 and other emergency information technologies.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		fire district	Unknown	General Revenue and EMPG
Work with venues in the City of Oak Grove and Sni Valley Fire Protection District to plan for cooling centers to be available during times of excessive heat.										
Work with venues in the City of Oak Grove and Sni Valley Fire Protection District to plan for cooling centers to be available during times of excessive heat.	2020	Ongoing	Continuous Project	Education and Awareness Programs	High	Continuous Project		fire district	Unknown	General Revenue and EMPG

Platte County 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing	Currently the county is considering the adoption of safe rooms to the Planning and Zoning ordinance. The county intends on adopting the 2018 version of the International Codes by the end of 2019	Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.		0	NA
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Deferred	Currently the county is considering the adoption of safe rooms to the Planning and Zoning ordinance	Unspecified	Unspecified					
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing	Currently the county is considering the adoption of safe rooms to the Planning and Zoning ordinance The county intends on adopting the 2018 version of the International Codes by the end of 2019	Unspecified	Medium	Ongoing	While may increase building costs, will lead to greater occupant safety		0	NA
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing	Currently the county is considering the adoption of safe rooms to the Planning and Zoning ordinance. The county is currently in the process of adopting the 2018 International Codes which deals with new wind bracing and tie downs.	Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.		0	NA
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing	Currently the county is considering the adoption of safe rooms to the Planning and Zoning ordinance	Unspecified	Unspecified					
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing	Currently the county is considering the adoption of safe rooms as part of the 2018 International code adoption.	Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing	Working with all but still a hard issue to sell especially to Schools.	Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.		Unknown	FEMA Grants
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Ongoing	Working with new construction and ongoing construction to make this happen. This option is available to home owners at their cost and hookup.	Unspecified	Unspecified					
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing	Currently being done by all.	Unspecified	Unspecified					
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred	Not at this time.	Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	County buildings have signage for tornado drills at this time.	Unspecified	Unspecified					
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Deferred	Not a High priority at this time.	Unspecified	Unspecified					
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing	Most county buildings are evaluated and suggestion made for staff and elected officials.	Unspecified	Unspecified					
Evaluate the county to continue to add more warning sirens in locations of the greatest need										
Add additional outdoor warning sirens.	2015	Ongoing	Working with developments to update and add. Developing an ordinance requiring new home development to install an outdoor siren.	Structure and Infrastructure Projects	Medium	Ongoing	Will improve alert/warnings coverage.		21000	budget
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing	Materials are made available for the public and contractors to gather information.	Unspecified	High	Open	Low/no cost mechanism to increase public safety.		NA	NA
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred	Currently nothing in place.	Unspecified	Unspecified					
Increase public safety alert and warning.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Continue public education on the all hazard weather radio.ontinued public education on the all hazard weather radio.	2015	Ongoing	We currently text, email, and page alerts on the following programs; Textcaster, Facebook, twitter, and Nextdoor.	Education and Awareness Programs	Medium	Ongoing	Low/no cost mechanism to increase public safety.		30	PCA
Floods										
Discourage new development in floodplains and flood-prone areas.										
Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Ongoing	Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance	Unspecified	High	Unknown	Will provide legal mechanism to enforce floodplain management.		Low	Unknown at this time
Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Ongoing	Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Unknown	Will reduce future vulnerability to flood.		Low	Unknown at this time
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Deferred	Nothing in place at this time.	Unspecified	High	Unknown	Will provide legal mechanism to enforce floodplain management.		Unknown	Unknown at this time
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing	Insurance companies are aware of the current flood plans and working with their insured. Through the CRS program, the county encourages the purchase of flood insurance.	Unspecified	Medium	Ongoing	Will reduce recovery costs and ensure compliance with NFIP.		0	0
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing	Those in the current area that are new are being updated and requested to have flood insurance in place. Through the CRS program, the county does an outreach each year.	Unspecified	Medium	Ongoing	No/low cost mechanism to encourage flood preparedness.		0	Unknown at this time

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing	We are in the planning stage for this effort.	Unspecified	Medium	Ongoing	No/low cost mechanism to encourage flood preparedness.		0	Unknown at this time
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing	CRS review on going. Flood plain manager is keeping this data updated and will follow up on our flood plain plan.	Unspecified	High	Unknown	The county in 2011 found that they did not want to enter in a buyout for those in Bean Lake as this was done once in 1993 flood.		High	CDBG grants
Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing	CRS review on going. Flood plain manager is keeping this data updated and will follow up on our flood plain plan.	Unspecified	High	Unknown	Preventing future flooding of properties that have had history of flood damage		Low	CDBG or another grant that might be available
With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing	CRS review on going. Flood plain manager is keeping this data updated and will follow up on our flood plain plan.	Unspecified	High	Unknown	Prevent future flooding of properties that have experienced past damage from floods		Low	Unknown at this time
Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing	CRS review on going. Flood plain manager is keeping this data updated and will follow up on our flood plain plan.	Unspecified	High	Ongoing	Low cost mechanism to identify r ways to prevent damages to residential properties		Low	CDBG or some other grant that might be available

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Ongoing	With the addition of the river gauge for Parkville added to the Missouri River now gives Parkville and Riverside a better gauge on the current water level is for their jurisdiction.	Unspecified	Medium	Ongoing	Stream gauges are relatively cost effective measures to warn of flooding events and implement mitigation measures.		50000	Parks and Recreation
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing	We have developed a "Flood Group" email for those entities along the Missouri river to keep them updated on current situations that are important to the levee group and home owners and farmers in this area as well and local jurisdictions.	Unspecified	Medium	Ongoing	Will ensure that citizens are prepared real time for flood events.		50000	Department of Public Works
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing	We have developed a "Flood Group" email for those entities along the Missouri river to keep them updated on current situations that are important to the levee group and home owners and farmers in this area as well and local jurisdictions.	Unspecified	Medium	Ongoing	Sharing of data will improve county floodplain management.		50000	Department of Public Works
Improve flood hazard assessments and flood mapping.										
Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing	We have a SDE program that has this capability already and is updated by the Assessor office.	Unspecified	High	Unknown	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.		Low	Unknown at this time

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Ongoing	We work with all jurisdiction located in the flood plain to accomplish this effort.	Unspecified	High	Ongoing	Free program that can increase floodplain management.		Low	Unknown at this time
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deferred	We are currently using the FEMA Substantial Improvement/Substantial Damage Estimator (SDE) program.	Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing	Platte County Zoning Order 405.180 Storm Drainage Systems and facilities and 405.225 Stream Preservation and Buffer Zone Requirements Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010 405.230 Park and recreational area requirements as well as 405.240 Linear Parks and Trail Dedication	Unspecified	High	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.		Medium	Parks Task
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing	Platte County Zoning Order 405.180 Storm Drainage Systems and facilities and 405.225 Stream Preservation and Buffer Zone Requirements Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Unknown	Will prevent flooding for moderate costs		High	Unknown at this time
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2010	Ongoing	Platte County Zoning Order 405.180 Storm Drainage Systems and facilities and 405.225 Stream Preservation and Buffer Zone Requirements Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Unknown	Low cost mechanism to improve floodplain management on local and regional levels.		Low	Unknown at this time

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing	Platte County Zoning Order 405.180 Storm Drainage Systems and facilities and 405.225 Stream Preservation and Buffer Zone Requirements Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Unknown	No/ or low cost to implement and require little staff support.		Low	Unknown at this time
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing	Platte County Zoning Order 405.180 Storm Drainage Systems and facilities and 405.225 Stream Preservation and Buffer Zone Requirements Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Unknown	Will reduce floodplain vulnerability and increase city greenspace.		Low	Unknown at this time
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Ongoing	Platte County Zoning Order 405.180 Storm Drainage Systems and facilities and 405.225 Stream Preservation and Buffer Zone Requirements Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.		Low	Unknown at this time
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Ongoing	Platte County Flood Plain manager and EM have the latest maps to work from and we are updating our information for 2019. The latest maps were adopted 04/2015 and are available in the Planning and Zoning Office.	Unspecified	Unspecified	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.			Unknown at this time
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing	Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010. Buyout are subject to approval by the county commission	Unspecified	High	Ongoing	While initial cost is high, will reduce recovery and replacement costs.		Unknown	Unknown at this time
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing	Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Unknown	While initial cost is high, will reduce recovery and replacement costs.		High	Unknown at this time
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing	Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Ongoing	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.		Medium	Unknown at this time
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Deferred	This will be based on utilities plans.	Unspecified	Unspecified					
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Ongoing	Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010. Storm water plan	Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing	Chapter 410 - Zoning Overlay District Flood Plain Management Ordinance Current Land Use Plan has not been updated since 2010	Unspecified	High	Unknown	Will greatly reduce and offset construction costs and limit recovery costs.		Medium	Unknown at this time

Dearborn 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)													
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Applies to Community Assets (New/Existing)	Existing Local Planning Mechanism through which the action was/will be implemented	Primary Agency Responsible for Implementation / Administration	Date for Completion	Cost / Benefit Review	Target Capacity	Estimated Cost (\$)	Funding Source
Tornadoes													
Improve and maintain warning system.													
Add additional siren to the south side of town	2020	Ongoing		Structure and Infrastructure Projects	High	New	city council	city		lives saved		Medium	Unknown
Establish designated command and meeting locations (city hall or community Center)	2020	Ongoing		Structure and Infrastructure Projects	High	Existing	city council	city	2020	lives saved		Low	
Maintain existing siren near high school	2020	Ongoing		Structure and Infrastructure Projects	High	Existing	city council	city	2020	lives saved		Low	Unknown
Upgrade assets to support use as temporary housing (community center and four schools).													
Evaluate facilities and supplies to determine improvements and stockpile of supplies	2020	Ongoing		Structure and Infrastructure Projects	High	New	city council and school district	city	2021	lives saved	500	Low	City
Floods													
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.													
**d. With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2020	Ongoing		Education and Awareness	Medium	Existing			Ongoing	reduced losses			City's General fund and CIP Budget
Severe Storms (Winter, Heat, Thunderstorms)													
Protect vulnerable populations during severe storm events, particularly those impacting the availability of electric power.													
Assign neighbors to check on identified residents	2020	Ongoing		Education and Awareness	High	New	city council	city	2020			Low	
Conduct survey to identify residents that require electricity and maintain list	2020	Ongoing		Education and Awareness	High	New	city council	city	2020			Low	

Farley 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Increase tornado preparedness.										
Install tornado warning sirens.	2015	Deferred	Lack of resources	Structure and Infrastructure Projects	High	TBD as funding allows	Will provide storm alerting		Medium	Unknown
To work with Platte County as much as possible as we have no paid employees only volunteers										
Working with Platte County.	2020	Ongoing		Education and Awareness Programs	High	Whenever needed	No money available	Platte Co EM	No money available	No money available
Floods										
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Ongoing	Lack of resources		Low	Ongoing	Stream gauges are relatively cost effective measures to warn of flooding events and implement mitigation measures.	city	TBD as available.	No money available
Improve flood hazard assessments and flood mapping.										
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing	Lack of resources		Low	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	city	TBD as available.	No money available
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing	Lack of resources		Low	Ongoing	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	city	TBD as available.	No money available

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Ongoing	Lack of resources		Low	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	city	TBD as available.	No money available
To work with Platte County and the Corps of Engineers as much as possible as we have no paid employees only volunteers										
Working with Platte County.	2020	Ongoing	Lack of resources	Education and Awareness Programs	High	Whenever needed	No money available	Platte Co EM	No money available	No money available
Severe Thunderstorms										
To work with Platte County as much as possible as we have no paid employees only volunteers										
Working with Platte County.	2020	Ongoing		Education and Awareness Programs	Low	Whenever needed	No money available	Platte Co EM	No money available	No money available

Ferrelview 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards										
Retrofit or add shelters to existing public/critical facilities with inadequate protection from tornadoes and high wind, including installation of backup power.	2010	Ongoing		Unspecified	Medium	TBD as funds are available	Will better ensure safety of residents	city	High	TBD
Improve tornado warning capabilities.										
Install outdoor warning sirens	2015	Ongoing		Unspecified	Medium	TBD as funds are available	Will better ensure safety of residents	city	Medium	TBD
Floods										
Improve drainage for areas prone to standing water										
Re-grade ditch lines along Heady Road.	2015	Ongoing		Unspecified	High	Ongoing, as funding available	Would reduce standing water and reduce mosquito breeding areas.	city	Medium	TBD
Improve flood hazard assessments and flood mapping.										
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas	2010	Ongoing		Unspecified	High	ongoing	Low cost mechanism to inform flood risk.	city	Low	Operating Budget
Participate in, and ensure compliance with, flood mitigation and floodplain management programs										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain map	2010	Ongoing		Unspecified	High	ongoing	Low cost mechanism to inform flood risk.	city	Low	Operating Budget
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Unspecified	High	ongoing	Low cost mechanism to inform flood risk.	city	Low	Operating Budget

Houston Lake 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing		Unspecified	Medium	Ongoing	Initial high costs offset by potential savings in recovery costs.	local utilities	None required	None required
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	High	Ongoing	Low/no cost mechanism to increase public safety.	city	0	None required
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing		Unspecified	High		Low/no cost mechanism to increase public safety.	city	None required	None required
Increase public safety alert and warning.										
Develop stronger local community tornado warning systems	2015	Ongoing		Education and Awareness Programs	High	2017	Low/no cost mechanism to increase public safety.	city	Low, None required	budget, None required
Increase communication with NWS for timely reporting	2015	Ongoing		Local Plans and Regulations	High	2015	Low/no cost mechanism to increase public safety.	city	None required	None required
Increase community education of weather conditions favorable for developing tornadoes.	2015	Ongoing		Education and Awareness Programs	Medium	2016	Low/no cost mechanism to increase public safety.	city	None required	FEMA
Floods										
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing		Unspecified	Low	Ongoing	Low cost mechanism to identify r ways to prevent damages to residential properties	city	Not known	Not known
Implement or improve flood warning systems.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing		Unspecified	Medium	Ongoing	Will ensure that citizens are prepared real time for flood events.	city	None required	None required
Develop stronger local community flood warning systems	2015	Ongoing		Education and Awareness Programs	Medium	2016	Low/no cost mechanism to increase public safety.	city	Minimal	city
Increase communication with NWS for timely reporting	2015	Ongoing		Local Plans and Regulations	High	2015	Low/no cost mechanism to increase public safety.	city	None required	None required
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the										
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2010	Ongoing		Unspecified	Medium	Ongoing	Low cost mechanism to improve floodplain management on local and regional levels.	city	None required	None required
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Ongoing		Unspecified	Medium	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.	city	None required	None required
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Ongoing		Unspecified	High	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	city	None required	None required
Severe Thunderstorms										
Develop stronger local community severe thunderstorm warning system										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Community awareness	2015	Ongoing		Education and Awareness Programs	Medium	2016	No/low cost mechanism to increase public safety.	city	Minimal	City
Increase communication with NWS for timely reporting										
Increased communication	2015	Ongoing		Local Plans and Regulations	High	2015	No/low cost mechanism to increase public safety.	city	None required	None required
Increase community after storm damage reporting to EMD										
Community awareness	2015	Ongoing		Education and Awareness Programs	High	2015	No/low cost mechanism to increase public safety.	city	Minimal	city

Lake Waukomis 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Severe Thunderstorms										
To obtain back up power for community facilities including City Hall and sewer system.										
Obtain Generator for Community Center	2015	Ongoing	funding not secured	Structure and Infrastructure Projects	Medium	by 2025	Will better ensure continuity of government operations.	city	100,000	Grants
Obtain back up power for sewer system pur	2020	Ongoing	funding not secured	Structure and Infrastructure Projects	Medium	by 2025	Will better ensure continuity of government operations.	city	100,000	Grants
Floods										
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain map	2010	Ongoing		Unspecified	Unspecified	Ongoing	Low cost mechanism to inform flood risk.	city	Low	Operating Budget
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Unspecified	Unspecified	Ongoing	Low cost mechanism to inform flood risk.	city	Low	Operating Budget

Northmoor 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	1000	None
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing		Unspecified	Medium	Ongoing	While may increase building costs, will lead to greater occupant safety	city	1000	None
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing		Unspecified	Medium	Ongoing	While may increase building costs, will lead to greater occupant safety	city	1000	None
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	1000	None
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	1000	None
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing		Unspecified	Medium	Ongoing	Tax incentives could defray otherwise high costs for developing safe rooms and will likely lead to greater acceptance.	city	1000	None
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	1000	None
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Ongoing		Unspecified	Medium	Ongoing	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	city	1000	None
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing		Unspecified	Medium	Ongoing	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	local utilities	1000	None
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Ongoing		Unspecified	Medium	Ongoing	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	city	1000	None
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing		Unspecified	Medium	ongoing	Low/no cost mechanism to increase public safety.	city	1000	None
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred		Unspecified	Unspecified					
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	1000	None
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	1000	None
Floods										
Discourage new development in floodplains and flood-prone areas.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Ongoing		Unspecified	Low	Ongoing	Will provide legal mechanism to enforce floodplain management.	city	1000	None
**Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Ongoing		Unspecified	Low	Ongoing	Will reduce future vulnerability to flood.	city	1000	None
**Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Ongoing		Unspecified	Low	Ongoing	Will provide legal mechanism to enforce floodplain management.	city	1000	None
Enhance public awareness and education efforts related to flooding.										
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing		Unspecified	Low	Ongoing	No/low cost mechanism to encourage flood preparedness.	city	1000	None
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	Low	Ongoing	Preventing future flooding of properties that have had history of flood damage	city	1000	None
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing		Unspecified	Medium	Ongoing	Preventing future flooding of properties that have had history of flood damage	city	1000	None
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing		Unspecified	Low	Ongoing	Preventing future flooding of properties that have had history of flood damage	city	1000	None

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing		Unspecified	Medium	Ongoing	Low cost mechanism to identify r ways to prevent damages to residential properties	city	1000	None
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Ongoing		Unspecified	Low	Ongoing	Stream gauges are relatively cost effective measures to warn of flooding events and implement mitigation measures.	city	1000	None
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing		Unspecified	Low	Ongoing	Will ensure that citizens are prepared real time for flood events.	city	1000	None
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing		Unspecified	Low	Ongoing	Sharing of data will improve county floodplain management.	city	1000	None
Improve flood hazard assessments and flood mapping.										
**Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Ongoing		Unspecified	Low	Ongoing	Will allow for better assumptions to support mitigation activities.	city	1000	None
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Ongoing		Unspecified	Low	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	city	1000	None

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Unspecified	Low	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	city	1000	None
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Ongoing		Unspecified	Low	Ongoing	Free program that can increase floodplain management.	city	1000	None
**Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Ongoing		Unspecified	Low	Ongoing	Free program that can increase floodplain management.	city	1000	None
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing		Unspecified	Low	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.	city	1000	None
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing		Unspecified	Low	Ongoing	Will prevent flooding for moderate costs	city	1000	None
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and implemented jointly.	2010	Ongoing		Unspecified	Low	Ongoing	Low cost mechanism to improve floodplain management on local and regional levels.	city	1000	None
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing		Unspecified	Low	Ongoing	No/ or low cost to implement and require little staff support.	city	1000	None

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing		Unspecified	Low	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.	city	1000	None
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Ongoing		Unspecified	Low	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.	city	1000	None
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Unspecified	Low	Ongoing	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	city	1000	None
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	Low	Ongoing	While initial cost is high, will reduce recovery and replacement costs.	city	1000	None
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing		Unspecified	Low	Ongoing	While initial cost is high, will reduce recovery and replacement costs.	city	1000	None
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing		Unspecified	Low	Ongoing	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	city	1000	None
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Ongoing		Unspecified	Low	Ongoing	While initial cost may be high, will reduce recovery and replacement costs.	city	1000	None

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Ongoing		Unspecified	Low	Ongoing	While initial cost is high, will reduce recovery and replacement costs.	city	0	None
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing		Unspecified	Low	Ongoing	Will greatly reduce and offset construction costs and limit recovery costs.	city	1000	None

Parkville 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing		Unspecified	Medium	Adopt 2009 code in 2011		building code official	NA	NA
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Deferred		Unspecified	Unspecified					
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Deferred		Unspecified	Unspecified					
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing		Unspecified	Medium	2010		planning & zoning	NA	NA
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Deferred		Unspecified	Unspecified					
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Deferred		Unspecified	Unspecified					
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred		Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Deferred		Unspecified	Unspecified					
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred		Unspecified	Unspecified					
Improve existing and future storm sirens										
Purchase new/update existing storm sirens.	2015	Ongoing		Structure and Infrastructure Projects	Low	Unknown	Continued functionality of outdoor warning systems.	emergency management	Medium	Unknown
Increase citizen disaster preparedness.										
Provide public education materials.	2015	Ongoing		Education and Awareness Programs	High	2015	Citizens better prepared for disasters.	emergency management	Low	Unknown
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	High	Ongoing	Public awareness, through drills and events.	emergency management		
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred		Unspecified	Unspecified					
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Ongoing		Unspecified	High	Ongoing		planning & zoning	NA	Unknown
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Deferred		Unspecified	Unspecified					
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing		Unspecified	Medium	Ongoing	Will reduce recovery costs and ensure compliance with NFIP.	emergency management	Low	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing		Unspecified	Unspecified			emergency management		
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing		Unspecified	Unspecified			emergency management		
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	High	As grants become available	Preventing future flooding of properties that have had history of flood damage	floodplain manager	High	Unknown
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing		Unspecified	High	As grants are available	Preventing future flooding of properties that have had history of flood damage	floodplain manager	Low	Unknown
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing		Unspecified	High	Ongoing	Preventing future flooding of properties that have had history of flood damage	floodplain manager	Low	Unknown
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing		Unspecified	High	Ongoing	Low cost mechanism to identify r ways to prevent damages to residential properties	floodplain manager	Low	Unknown
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing		Unspecified	High	Ongoing	Will ensure that citizens are prepared real time for flood events.	public works	Low	Unknown
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing		Unspecified	High	Ongoing	Sharing of data will improve county floodplain management.	emergency management	Low	Unknown
Improve flood awareness education and preparedness training										
Distribute and promote flood preparedness information.	2015	Ongoing		Education and Awareness Programs	High	2015	Low cost mechanism to increase flood safety.	emergency management	Low	Unknown
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Deferred		Unspecified	Unspecified					
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Deferred		Unspecified	Unspecified					
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Unspecified	Unspecified			planning & zoning		
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Ongoing		Unspecified	High	Ongoing	Free program that can increase floodplain management.	planning & zoning	Low	Unknown
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deferred		Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing		Unspecified	High	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.	planning & zoning	Medium	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing		Unspecified	High	Ongoing	Will prevent flooding for moderate costs	planning & zoning	Medium	Unknown
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2010	Ongoing		Unspecified	High	Ongoing	Low cost mechanism to improve floodplain management on local and regional levels.	planning & zoning	Low	Unknown
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing		Unspecified	High	as available	No/ or low cost to implement and require little staff support.	planning & zoning	Low	Unknown
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing		Unspecified	High	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.	planning & zoning	Low	Unknown
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Ongoing		Unspecified	High	Ongoing	Will reduce floodplain vulnerability and increase city greenspace.		Low	Unknown
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
**Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing		Unspecified	Unspecified			public works		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing		Unspecified	High	Ongoing	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	emergency management	Low	Unknown
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Ongoing		Unspecified	Medium	Ongoing	While initial cost may be high, will reduce recovery and replacement costs.	emergency management	Low	Unknown
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Ongoing		Unspecified	High	Ongoing	While initial cost is high, will reduce recovery and replacement costs.	emergency management	Medium	Unknown
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					
Severe Thunderstorms										
Increase citizen severe thunderstorm preparedness.										
Provide public education materials.	2015	Ongoing		Education and Awareness Programs	High	2015	Citizens better prepared for disasters.	emergency management	Low	Unknown
Increase mass notification alert and warning capabilities.										
Utilize Textcaster system for City	2015	Ongoing		Local Plans and Regulations	High	2015	Low cost mechanisms to increase public alert and warning.	emergency management	donated	donated

Platte City 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	building code official	Low	General Fund
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing	NULL	Unspecified	Low	NA	While may increase building costs, will lead to greater occupant safety	building code official	Low	General Fund
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing	NULL	Unspecified	Low	NA	While may increase building costs, will lead to greater occupant safety	building code official	Low	General Fund
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	emergency management	Low	General Fund
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	planning & zoning	Low	General Fund
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing	NULL	Unspecified	Low	NA	Tax incentives could defray otherwise high costs for developing safe rooms and will likely lead to greater acceptance.	city admin	Medium	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	emergency management	Low	General Fund
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Ongoing	NULL	Unspecified	Low	NA	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	planning & zoning	Low	General Fund
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing	NULL	Unspecified	Low	NA	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	local utilities	High	General Fund
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Ongoing	NULL	Unspecified	Low	NA	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	city admin	Medium	General Fund
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	emergency management	Low	General Fund
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	planning & zoning	Low	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	public works	Medium	General Fund
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	emergency management	Low	City general funds
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing	NULL	Unspecified	Low	NA	Low/no cost mechanism to increase public safety.	emergency management	Low	General Fund
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Ongoing	NULL	Unspecified	Low	NA	Will provide legal mechanism to enforce floodplain management.	planning & zoning	Low	General Fund
**Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Ongoing	NULL	Unspecified	Low	NA	Will reduce future vulnerability to flood.	planning & zoning	Low	General Fund
**Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Ongoing	NULL	Unspecified	Low	NA	Will provide legal mechanism to enforce floodplain management.	city admin	Medium	General Fund
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing	NULL	Unspecified	Low	NA	Will reduce recovery costs and ensure compliance with NFIP.	floodplain manager	Low	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing	NULL	Unspecified	Low	NA	No/low cost mechanism to encourage flood preparedness.	emergency management	Low	General Fund
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing	NULL	Unspecified	Low	NA	No/low cost mechanism to encourage flood preparedness.	emergency management	Low	General Fund
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing	NULL	Unspecified	Low	NA	Preventing future flooding of properties that have had history of flood damage	floodplain manager	High	General Fund
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing	NULL	Unspecified	Medium	NA	Preventing future flooding of properties that have had history of flood damage	floodplain manager	Low	General Fund
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing	NULL	Unspecified	Low	NA	Preventing future flooding of properties that have had history of flood damage	floodplain manager	Low	General Fund
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing	NULL	Unspecified	Low	NA	Low cost mechanism to identify ways to prevent damages to residential properties	floodplain manager	Low	General Fund
Implement or improve flood warning systems.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Ongoing	NULL	Unspecified	Low	NA	Stream gauges are relatively cost effective measures to warn of flooding events and implement mitigation measures.	public works	Medium	General Fund
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing	NULL	Unspecified	Low	NA	Will ensure that citizens are prepared real time for flood events.	public works	Low	General Funds
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing	NULL	Unspecified	Low	NA	Sharing of data will improve county floodplain management.	emergency management	Low	General Fund
Improve flood hazard assessments and flood mapping.										
**Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Ongoing	NULL	Unspecified	Low	NA	Will allow for better assumptions to support mitigation activities.	planning & zoning	Low	General Fund
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Ongoing	NULL	Unspecified	Low	NA	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	planning & zoning	Low	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing	NULL	Unspecified	Low	NA	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	public works	Low	General Fund
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Ongoing	NULL	Unspecified	Low	NA	Free program that can increase floodplain management.	public works	Low	General Funds
**Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Ongoing	NULL	Unspecified	Low	NA	Free program that can increase floodplain management.	public works	Low	General Fund
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing	NULL	Unspecified	Low	NA	Will reduce floodplain vulnerability and increase city greenspace.	planning & zoning	Medium	General Fund
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing	NULL	Unspecified	Low	NA	Will prevent flooding for moderate costs	planning & zoning	Medium	General Fund
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2010	Ongoing	NULL	Unspecified	Medium	NA	Low cost mechanism to improve floodplain management on local and regional levels.	planning & zoning	Low	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing	NULL	Unspecified	Low	NA	No/ or low cost to implement and require little staff support.	planning & zoning	Low	General Fund
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing	NULL	Unspecified	Low	NA	Will reduce floodplain vulnerability and increase city greenspace.	planning & zoning	Low	General Fund
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Ongoing	NULL	Unspecified	Low	NA	Will reduce floodplain vulnerability and increase city greenspace.	planning & zoning	Low	General Fund
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Ongoing	NULL	Unspecified	Low	NA	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	Low	General Fund
Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing	NULL	Unspecified	Low	NA	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	floodplain manager	Low	General Fund
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing	NULL	Unspecified	Low	NA	While initial cost is high, will reduce recovery and replacement costs.	floodplain manager	High	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing	NULL	Unspecified	Low	NA	While initial cost is high, will reduce recovery and replacement costs.	floodplain manager	Medium	General Fund
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing	NULL	Unspecified	Low	NA	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	floodplain manager	Low	General Fund
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Ongoing	NULL	Unspecified	Low	NA	While initial cost may be high, will reduce recovery and replacement costs.	floodplain manager	Low	General Fund
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Ongoing	NULL	Unspecified	Low	NA	While initial cost is high, will reduce recovery and replacement costs.	floodplain manager	Medium	General Fund
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing	NULL	Unspecified	Low	NA	Will greatly reduce and offset construction costs and limit recovery costs.	city admin	Low	General Fund
Severe Thunderstorms										
Increase citizen preparedness for severe thunderstorms.										
Provide education and awareness	2015	Ongoing		Education and Awareness Programs	Low	Ongoing	Low cost mechanism to increase public safety.	emergency management	Low	City budget

Platte Woods 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city		Local
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city		Local
Work w/ trade orgs to inform builders/developers of construction techniques and materials that may minimize tornado/high wind damage to residential/commercial structures.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Offer residential/commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city		
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing		Unspecified	Unspecified	Ongoing		local utilities	Low	Local

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city		
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/ nat. hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city		Local
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Install generator at city hall and other critical facilities.										
Mutual Aid Agreements	2015	Ongoing		Unspecified	Unspecified	Ongoing		city	Low	Local
Floods										
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain map	2010	Ongoing		Unspecified	Unspecified	Ongoing	Low cost mechanism to inform flood risk.	floodplain manager	Low	Operating Budget
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Unspecified	Unspecified	Ongoing	Low cost mechanism to inform flood risk.	floodplain manager	Low	Operating Budget

Riverside 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing		Unspecified	High	Ongoing	Low/no cost mechanism to increase public safety.	building code official	Unknown	Unknown
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Deferred		Unspecified	Unspecified					
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing		Unspecified	High	Ongoing	While may increase building costs, will lead to greater occupant safety	building code official	Unknown	Unknown
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	None	None
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deferred		Unspecified	Unspecified					
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing		Unspecified	Medium	Ongoing	Tax incentives could defray otherwise high costs for developing safe rooms and will likely lead to greater acceptance.	city admin	None	None
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	None	None
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Deferred		Unspecified	Unspecified					
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Deferred		Unspecified	Unspecified					
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred		Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	None	None
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city admin	None	None
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	public works	None	None
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	Minimal	public relations budget
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	None	None
Floods										
Discourage new development in floodplains and flood-prone areas.										
Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Deferred		Unspecified	Unspecified					
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Deferred		Unspecified	Unspecified					
Enhance public awareness and education efforts related to flooding.										
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing		Unspecified	Medium	Ongoing	No/low cost mechanism to encourage flood preparedness.	emergency management	Unknown	Unknown
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing		Unspecified	Medium	Ongoing	No/low cost mechanism to encourage flood preparedness.	emergency management	Unknown	Unknown
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Deferred		Unspecified	Unspecified					
With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Deferred		Unspecified	Unspecified					
Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Improve citizen preparedness.										
Continue public education programs	2015	Undetermined		Education and Awareness Programs	High	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	Low	budget
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Deferred		Unspecified	Unspecified					
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Deferred		Unspecified	Unspecified					
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Unspecified	High	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	planning & public works	Unknown	Unknown
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Ongoing		Unspecified	High	Ongoing	Free program that can increase floodplain management.	planning & public works	Unknown	Unknown
Improve outdoor warning capability										
Add additional outdoor siren as city develops.	2015	Undetermined		Structure and Infrastructure Projects	Low	2017-2020	Will ensure continued ability to alert citizens.	emergency management	Medium	budget
Improve public alert and warning systems.										
Continue to develop mass notification systems to the community-Upgrade capabilities	2015	Undetermined		Structure and Infrastructure Projects	Medium	2017-2020	Low/no cost mechanism to increase public safety.	emergency management	Low	budget
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Deferred		Unspecified	Unspecified					

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing		Unspecified	Medium	Ongoing	Will prevent flooding for moderate costs	public works	Medium	Unknown
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2010	Deferred		Unspecified	Unspecified					
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Deferred		Unspecified	Unspecified					
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Deferred		Unspecified	Unspecified					
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	Unspecified			floodplain manager		
Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Deferred		Unspecified	Unspecified					
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing		Unspecified	High	Ongoing	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	floodplain manager	Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Deferred		Unspecified	Unspecified					
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Deferred		Unspecified	Unspecified					
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					

Tracy 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Improve tornado preparedness										
Construct tornado shelter	2015	Ongoing	NULL	Unspecified	High	TBD as funding allows	Will provide safe refuge for residents.	city	High	TBD as grants available
Install torando outdoor warning siren.	2015	Ongoing	NULL	Unspecified	High	TBD as funding allows	Will provide warning capability to residents	city	Med	TBD as grants available
Organize a plan with our community to set up triage in the event of a tornado disaster	2015	Ongoing	NULL	Unspecified	High	TBD as funding allows	Will ensure faster response and treatment for casualties.	city	Low	TBD as grants available
Floods										
Improve flooding preparedness										
Create a plan for funding a levee along Platte River in Tracy	2015	Ongoing	NULL	Unspecified	High	TBD as funding allows	Low cost mechanism to fund projects.	city	Low	TBD as grants available
Design and install a functional levee system	2015	Ongoing	NULL	Unspecified	High	TBD as funding allows	High cost will offset recovery and cleanup costs from flooding.	city	High	TBD as grants available
Design and install improvements to city storm sewers.	2015	Ongoing	NULL	Unspecified	High	TBD as funding allows	High cost will offset recovery and cleanup costs from flooding.	city	High	TBD as grants available
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain map	2010	Ongoing		Unspecified	Unspecified	Ongoing	Low cost mechanism to inform flood risk.	floodplain manager	Low	Operating Budget
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Unspecified	Unspecified	Ongoing	Low cost mechanism to inform flood risk.	floodplain manager	Low	Operating Budget

Weatherby Lake 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Deferred		Unspecified	Unspecified					
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing		Unspecified	Medium	Ongoing	While may increase building costs, will lead to greater occupant safety	city	Medium	Unknown
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing		Unspecified	Low	Ongoing	Low/no cost mechanism to increase public safety.	city	Low	Unknown
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	Unknown	Unknown
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Deferred		Unspecified	Unspecified					
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing		Unspecified	Low	Ongoing	Low/no cost mechanism to increase public safety.	city	Low	Unknown
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Ongoing		Unspecified	Medium	Ongoing	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	city	Low	Unknown

Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing		Unspecified	Medium	Ongoing	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	local utility	High	Unknown
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred		Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing		Unspecified	High	Ongoing	Low/no cost mechanism to increase public safety.	city	Low	Unknown
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing		Unspecified	High	Ongoing	Low/no cost mechanism to increase public safety.	city	Low	Unknown
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	Unknown	Unknown
Partner w/ trade orgs. to conduct safe room workshops.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	city	Unknown	Unknown
Floods										
Discourage new development in floodplains and flood-prone areas.										
Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Ongoing		Unspecified	Low	Ongoing	Will provide legal mechanism to enforce floodplain management.	city	Unknown	Unknown
Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Ongoing		Unspecified	Low	Ongoing	Will reduce future vulnerability to flood.	city	Unknown	Unknown
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Deferred		Unspecified	Unspecified					
Enhance public awareness and education efforts related to flooding.										

Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing		Unspecified	Low	Ongoing	Will reduce recovery costs and ensure compliance with NFIP.	city	Unknown	Unknown
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Deferred		Unspecified	Unspecified					
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Deferred		Unspecified	Unspecified					
With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Deferred		Unspecified	Unspecified					
Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Deferred		Unspecified	Unspecified					
Implement or improve flood warning systems.										
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Deferred		Unspecified	Unspecified					
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing		Unspecified	Medium	Ongoing	Will ensure that citizens are prepared real time for flood events.	city	Unknown	Unknown

Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing		Unspecified	Medium	Ongoing	Sharing of data will improve county floodplain management.	city	Unknown	Unknown
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Deferred		Unspecified	Unspecified					
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Deferred		Unspecified	Unspecified					
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Unspecified	Low	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	city	Unknown	Unknown
Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Deferred		Unspecified	Unspecified					
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deferred		Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing		Unspecified	Medium	Ongoing	Will prevent flooding for moderate costs	city	Medium	Unknown
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2010	Ongoing		Unspecified	Medium	Ongoing	Low cost mechanism to improve floodplain management on local and regional levels.	city	Low	Unknown

In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Deferred		Unspecified	Unspecified					
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Deferred		Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Ongoing		Unspecified	Medium	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	city	Low	Unknown
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing	Not a current participant in eh NFIP; in progress	Unspecified	Medium	Ongoing	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	city	Low	Unknown
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Deferred		Unspecified	Unspecified					
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Deferred		Unspecified	Unspecified					
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing		Unspecified	Low	Ongoing	Will greatly reduce and offset construction costs and limit recovery costs.	city	Medium	Unknown
Severe Thunderstorms										
Increase resilience of government buildings to power outages.										

Obtain a generator for the city hall, maintenance barn and the community center for power failures in the future	2015	Ongoing		Structure and Infrastructure Projects	Medium	2017	Ensure continuity of government operations.	city	100000	Grants
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Weston 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing		Unspecified	High	3/1/2015	Low/no cost mechanism to increase public safety.	planning & zoning	Low	Unknown
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate. Retrofit existing facilities.	2010	Ongoing		Unspecified	High	TBD	While may increase building costs, will lead to greater occupant safety	planning & zoning	Low	Unknown
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Ongoing		Unspecified	High	TBD	While may increase building costs, will lead to greater occupant safety	planning & zoning	Medium	Unknown
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing		Unspecified	High	Ongoing	Low/no cost mechanism to increase public safety.	planning & zoning	250	General Fund
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing		Unspecified	High	Ongoing	Low/no cost mechanism to increase public safety.	planning & zoning	Low	Unknown
Offer residential/ commercial builders/developers tax incentives to construct safe rooms/community shelters in new public facilities.	2010	Ongoing		Unspecified	Medium	12/1/2015	Tax incentives could defray otherwise high costs for developing safe rooms and will likely lead to greater acceptance.	planning & zoning	500	General Fund
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing		Unspecified	High	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	Low	Unknown
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Anchor or strengthen above-ground transmission lines, poles and similar structures.	2010	Ongoing		Unspecified	High	TBD	Would reduce recovery costs and better limit damage/interruption to electrical and communications services.	local utility	High	utility companies
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Deferred		Unspecified	Unspecified					
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	0	City budget
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Deferred		Unspecified	Unspecified					
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Deferred		Unspecified	Unspecified					
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	Medium	42095	Low/no cost mechanism to increase public safety.	emergency management	250	General Fund
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred		Unspecified	Unspecified					
Update emergency sirens within five years.										
Look for grants to purchase updated sirens	2015	Ongoing		Local Plans and Regulations	High	Spring 2017	Would ensure primary outdoor alerting system is functional.	emergency management	Medium	Unknown
Floods										
Discourage new development in floodplains and flood-prone areas.										
**Adopt ordinances prohibiting residential and commercial development in flood plains or flood-prone areas.	2010	Ongoing		Unspecified	High	Ongoing	Will provide legal mechanism to enforce floodplain management.	planning & zoning	Low	City of Weston
**Develop or amend comprehensive and/or land use plans to specifically address development in flood-prone areas and recommend strategies for decreasing the jurisdiction's vulnerability to flooding.	2010	Ongoing		Unspecified	High	Ongoing	Will reduce future vulnerability to flood.	planning & zoning	Low	City of Weston

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Levy fees on new residential, commercial and infrastructure development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2010	Deferred		Unspecified	Unspecified					
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing		Unspecified	High	Ongoing	Will reduce recovery costs and ensure compliance with NFIP.	floodplain manager	Low	City of Weston
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, the American Red Cross and other organizations and provide them to home owners and businesses in flood-prone areas.	2010	Ongoing		Unspecified	High	Ongoing	No/low cost mechanism to encourage flood preparedness.	emergency management	Low	City of Weston
Partner with emergency services, public health, human services organizations, appropriate state and federal agencies and the business community to conduct special public education events, such as a Flood Mitigation and Preparedness Workshop.	2010	Ongoing		Unspecified	High	Ongoing	No/low cost mechanism to encourage flood preparedness.	emergency management	Low	City of Weston
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing		Unspecified	Medium	Ongoing	Preventing future flooding of properties that have had history of flood damage	planning & zoning	Low	City of Weston
With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2010	Ongoing		Unspecified	High	Ongoing	Preventing future flooding of properties that have had history of flood damage	planning & zoning	Low	City of Weston
Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing		Unspecified	Unspecified	Ongoing	Low cost mechanism to identify r ways to prevent damages to residential properties	floodplain manager	Low	City of Weston
Implement or improve flood warning systems.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Deferred		Unspecified	Unspecified					
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public.	2010	Ongoing		Unspecified	High	Ongoing	Will ensure that citizens are prepared real time for flood events.	public works	Low	City of Weston
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions.	2010	Ongoing		Unspecified	Medium	Ongoing	Sharing of data will improve county floodplain management.	emergency management	500	General Fund
Improve flood hazard assessments and flood mapping.										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Deferred		Unspecified	Unspecified					
Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Deferred		Unspecified	Unspecified					
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing		Unspecified	High	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	public works	Low	City of Weston
**Partner with FEMA in the Cooperating Technical Partners (CTP) Program to increase local involvement in, and ownership of, the flood mapping process.	2010	Ongoing		Unspecified	High	Ongoing	Free program that can increase floodplain management.	public works	Low	City of Weston
Purchase HAZUS-Flood software from FEMA, possibly in conjunction with other local or regional stakeholders.	2010	Deferred		Unspecified	Unspecified					
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing		Unspecified	Medium	12/1/2015	Will reduce floodplain vulnerability and increase city greenspace.	planning & zoning	500	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Consider the construction of detention basins, small lakes and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding.	2010	Ongoing		Unspecified	High	Ongoing	Will prevent flooding for moderate costs	planning & zoning	Medium	City of Weston and contractors
Develop partnerships between regional emergency management, floodplain management and environmental groups to educate one another and the public of the benefits of collaboration and identify specific programs and activities that can be developed and i	2010	Ongoing		Unspecified	High	Ongoing	Low cost mechanism to improve floodplain management on local and regional levels.	planning & zoning	Low	City of Weston
Identify funding sources for the acquisition of flood-prone land for environmental, recreational and flood mitigation uses.	2010	Ongoing		Unspecified	Medium	12/1/2015	No/ or low cost to implement and require little staff support.	planning & zoning	500	General Fund
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood-prone property for use as open space or park land.	2010	Ongoing		Unspecified	Medium	12/1/2015	Will reduce floodplain vulnerability and increase city greenspace.	planning & zoning	500	General Fund
Work with area environmental groups, property owners and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2010	Deferred		Unspecified	Unspecified					
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Ongoing		Unspecified	High	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	Low	City of Weston
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing		Unspecified	High	Ongoing	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	floodplain manager	Low	City of Weston
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Deferred		Unspecified	Unspecified					
**Elevate public facilities in flood-prone areas. Encourage home owners and businesses to elevate their structures.	2010	Ongoing		Unspecified	High	Ongoing	While initial cost is high, will reduce recovery and replacement costs.	public works	Medium	City of Weston
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2010	Ongoing		Unspecified	High	Ongoing	Requires cooperation of landowners to implement, but ultimately beneficial as will greatly reduce recovery costs and insurance rates.	emergency management	Low	City of Weston
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2010	Ongoing		Unspecified	High	Ongoing	While initial cost may be high, will reduce recovery and replacement costs.	emergency management	Low	City of Weston
Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2010	Ongoing		Unspecified	High	Ongoing	While initial cost is high, will reduce recovery and replacement costs.	emergency management	Medium	City of Weston
Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Deferred		Unspecified	Unspecified					

Northland Regional Ambulance District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Increase the number of tornadoe shelters within our jurisdiction.										
Add number of shelters in area	2015	Ongoing		Structure and Infrastructure Projects	Medium	>2 year	Shelters would help decrease loss of life during event, and reduce exposure and medical need after event	work with co emergency management	Low	Unknown
Floods										
Improve several county roads where high water is present when the Platte River floods.										
Improve county roads, bridges, levees as needed to reduce impact of flooding	2015	Ongoing		Structure and Infrastructure Projects	Medium	3 year	Improvements to infrastructure of roads could reduce impact of flooding in area to help improve response times to emergencies and access to several areas in district	work with co public works	High	Unknown
Severe Thunderstorms										
Improve our current alerting system to notify patrons of incoming severe weather.										
Improve education on how to respond to severe weather.	2015	Ongoing		Education and Awareness Programs	Low	>1 year	Improving education of individuals in community could assist in loss of life, property. As well as use for mitigation of post-severe weather	EMS district, co emergency management	Low	Unknown

West Platte Fire Protection District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Increase tornado preparedness.										
Provide education and awareness materials.	2015	Ongoing		Education and Awareness Programs	High	2025	Low cost mechanism to increase public safety.	fire district	1000	budget
Severe Thunderstorms										
Increase severe thunderstorm preparedness.										
Provide education and awareness materials.	2015	Ongoing		Education and Awareness Programs	High	2025	Low cost mechanism to increase public safety.	fire district	1000	budget

Ray County 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Ongoing		Unspecified	Low	Ongoing	Low/no cost mechanism to increase public safety.	county commission	Unknown	County Revenue
Work w/ trade orgs to inform builders/ developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/ commercial structures.	2010	Ongoing		Unspecified	Medium	Ongoing	Buildings build to code.	emergency management	Unknown	County Revenue
Encourage community partners to update/maintain policies regarding outdoor activities.										
Encourage schools and sports leagues to review their policies regarding outdoor activities when hazardous conditions are present.	2015	Ongoing		Local Plans and Regulations	High	Ongoing	low cost way of addressing the safety of those people that are engaged in outdoor activities	emergency management	Low	Not applicable
Encourage construction of community tornado shelters in office complexes, factories, apt complexes, schools mobile home parks, stadiums, and other large population congregation centers.										
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing		Unspecified	Medium	Ongoing	Businesses will develop safe rooms.	emergency management	Unknown	County Revenue
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	Unknown	County Revenue
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing		Unspecified	Medium	Ongoing	Public building occupants protected from tornadoes/high winds.	co commission	TBD by project	County Revenue
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2010	Ongoing		Unspecified	Medium	Ongoing	Low/no cost mechanism to increase public safety.	emergency management	Unknown	County Revenue
Partner w/ trade orgs. to conduct safe room workshops.	2010	Deferred		Unspecified	Unspecified					
Increase the public's awareness and understanding of weather conditions that can produce tornadoes and steps that can be taken to keep safe during a tornado.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Explore options for the distribution of weather radios.	2015	Ongoing		Education and Awareness Programs	High	Ongoing	Low/no cost way to communicate information about hazardous conditions to residents so that they can take action to protect themselves.	emergency management	Low	Unknown
Floods										
Enhance public awareness and education efforts related to flooding.										
Encourage home owners and businesses to purchase flood insurance.	2010	Ongoing		Unspecified	High	Ongoing	Homeowners are projected against potential losses.	emergency management	0	N/A
Examine repetitive flood loss properties in each county and determine feasible and practical mitigation options.										
**As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2010	Ongoing		Unspecified	High	Ongoing	Repetitive loss properties eliminated and payouts minimized.	floodplain manager	0	0
**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties.	2010	Ongoing		Unspecified	High	Ongoing	Repetitive loss properties are able to be mitigated with minimal financial impact to landowner.	floodplain manager	Defined by project	As available
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options.	2010	Ongoing		Unspecified	High	ongoing	Bridge project reduced cost of damage to properties.	floodplain manager	Project dependent	As available
Explore ways of maximizing the effectiveness of levee districts to monitor and maintain the levees.										
Educate residents living in floodplain areas near levees on the importance of forming a viable levee district and the importance of maintenance fees.	2015	Ongoing		Education and Awareness Programs	High	Ongoing	Low cost mechanism to increase public safety.	floodplain manager	Low	Unknown
Work to strengthen and broaden existing levee districts to ensure that they have tools available to maintain the levees.	2015	Ongoing		Local Plans and Regulations	High	Ongoing	Low cost mechanism to increase public safety.	floodplain manager	Low	Unknown
Implement or improve flood warning systems.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Determine the need for stream gauges in waterways without flood warning systems or additional stream gauges in waterways with flood warning systems already in-place.	2010	Ongoing		Unspecified	High	On going	Flood warning allows for mitigation measures to be implemented as available.	floodplain manager	0	0
Improve flood hazard assessments and flood mapping.										
Provide the public with information about keeping safe during a thunderstorm and ways to protect property from damage during severe thunderstorms.	2010	Ongoing	Provide pamphlets for high winds. FEMA P-320	Unspecified	High	Ongoing	Low cost way of increasing safety for public and protecting property from hazards associated with Severe Thunderstorms	emergency management	Unknown	Unknown

Richmond 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Educate and raise awareness about the variety of roles and responsibilities needed before and after a tornado.										
Provide opportunities like workshops and exercises to inform city staff and volunteers about the different roles and responsibilities needed after a tornado.	2015	Ongoing		Unspecified	Low	Ongoing	Low/no cost mechanism to increase public safety.		Low	Richmond City Budget
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2010	Completed	Adopted 2015 IBC in November, 2018.	Unspecified	Unspecified	2018				
Inform builders/developers of construction techniques and materials that may minimize tornado/ high wind damage to residential/commercial structures.	2010	Ongoing		Unspecified	Unspecified	Ongoing		planning		
Require the use of tempered or shatter-resistant glass in the windows of new public/private facilities where large numbers of people may congregate.	2010	Ongoing		Unspecified	Unspecified	Ongoing		building codes		
Review and enhance (if necessary) regulations related to design and installation of architectural features on buildings to minimize the creation of windborne debris.	2010	Completed	Adopted 2015 IBC in November 2018.	Unspecified	Unspecified	Ongoing				
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Consider adopting ordinances or regs requiring the construction of tornado shelters in new buildings where people live, work or congregate.	2010	Ongoing		Unspecified	Unspecified	Ongoing	Low/no cost mechanism to increase public safety.	building codes		
Encourage residential/ commercial builders/developers to construct safe rooms/community shelters in new public facilities.	2010	Ongoing		Unspecified	Unspecified	Ongoing		planning		
Work with chambers of commerce, school districts, corporations, etc. to promote benefits of safe rooms.	2010	Ongoing		Unspecified	Unspecified	Ongoing		emergency management		
Encourage electric and telecommunications utilities to protect their existing infrastructure from the effects of tornadoes and high winds.										
Adopt ordinances or regulations requiring the underground placement of new electric and telecommunications transmission lines.	2010	Ongoing	Ordinance requires underground electric for new development.	Unspecified	Unspecified	Ongoing		planning		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Increase the public's awareness and understanding of weather conditions that can produce tornadoes and steps that can be taken to keep safe during a tornado.	2010	Ongoing		Unspecified	Unspecified	Ongoing		emergency management		
Offer financial or other incentives to utility providers to replace existing above-ground utility lines with underground utility lines.	2010	Ongoing		Unspecified	Unspecified	Ongoing		city		
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Assess existing facilities for shelter suitability. Mark clearly and inform visitors/employees of locations.	2010	Ongoing	New businesses are encouraged to develop emergency tornado plan for safe room locations and post in visible location for visitors and employees.	Unspecified	Unspecified	Ongoing		public works		
Consider adopting policies requiring incorporation of safe rooms/shelters in new public facility construction.	2010	Ongoing		Unspecified	Unspecified	Ongoing		planning		
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2010	Ongoing	Fire Department is researching funding and grant opportunities for public tornado shelters.	Unspecified	Unspecified			public works		Unidentified
Update plans to ensure that current resources and information is included for quick and effective response to a tornado.										
Update the Local Emergency Operations Plan to include current shelter and city staff contact information .	2015	Ongoing	Update in progress.	Unspecified	Unspecified	Ongoing	Being able to access resources (shelters, staff, etc) in a timely manner may help prevent further injury from a tornado and possibly save lives.	emergency management	Low	Richmond City Budget
Floods										
Improve flood hazard assessments and flood mapping.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding.	2010	Ongoing			Low	Ongoing	Will allow for better assumptions to support mitigation activities.	planning	Low	Richmond City Budget
**Coordinate the collection of demographic, economic, watershed, land use and other data required by the HAZUS-Flood software program and/or GIS systems.	2010	Ongoing			Low	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	planning	Low	Richmond City Budget
**Obtain parcel data (assessed valuation and other information) for flood boundary areas and enhance vulnerability assessments for these areas.	2010	Ongoing			Low	Ongoing	Most data readily available and can be easily imported to identify potential areas for increased mitigation efforts.	public works	Low	Richmond City Budget
Integrate flood mitigation strategies with projects and activities designed to (1) protect, restore or enhance ecosystems and the environment and/or (2) create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood-prone areas, such as sports fields, parks, wildlife habitats, etc.	2010	Ongoing			Low	Ongoing	Will prevent flooding for moderate costs	planning	Medium	Richmond City Budget
Participate in, and ensure compliance with, flood mitigation and floodplain management programs.										
**Obtain the latest copies of flood insurance rate maps (FIRMs), floodplain maps and similar documents.	2010	Ongoing			Low	Ongoing	Having and maintaining most current FIRM map editions will allow for most accurate review of floodplain management.	floodplain manager	Low	Richmond City Budget

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
**Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).	2010	Ongoing			Low	Ongoing	Will ensure reduced insurance rates for homeowners and businesses while controlling recovery costs.	floodplain manager	Low	Richmond City Budget
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing			Low	Ongoing	Will greatly reduce and offset construction costs and limit recovery costs.	floodplain manager	Medium	Richmond City Budget
Severe Thunderstorms										
Increase public awareness and understanding about the hazards associated with thunderstorms such as lightning and high winds.										
Provide the public with information about keeping safe during a thunderstorm and ways to protect property from damage during severe thunderstorms.	2015	Ongoing	Provide pamphlets for high winds. FEMA P-320	Unspecified	Unspecified	Ongoing	Low cost way of increasing safety for public and protecting property from hazards associated with Severe Thunderstorms	emergency management	Low	Richmond City Budget

Kansas City 2020 Mitigation Strategy (Continuing Plan Participant, NFIP Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Encourage building practices and the use of materials that reduce the damaging effects of tornadoes.										
Adopt current edition of a model building code to address structural and architectural issues related to tornadoes and high wind events.	2015	Ongoing	Current building codes address this issue. However, KCMO will adapt as new codes are adopted.	Local Plans and Regulations	Medium	Ongoing		Building Code Dept	Unknown	Unknown
Enhance Aviation Department's capability to protect from and respond to damage resulting from tornadic activity										
Ensure personnel and tenants are adequately informed regarding potential weather conditions	2015	Ongoing	A notification system is in place. However, the system will be improved with new technology and best practices.	Education and Awareness Programs	High	Ongoing	unknown	Aviation	Unknown	Unknown
Expand the high wind refuge areas to accommodate all staff, tenants, and visitors to the airports as funding or need allows.	2020	New	This action is based upon available funding and will be completed as able.	Structure and Infrastructure Projects	Medium	Undetermined		Aviation	Unknown	Unknown
Implement improved weather monitoring systems in accordance with enhanced technology.	2020	New	This action is based upon available funding and technological advancements. This action will be completed as able.	Structure and Infrastructure Projects	Medium	Undetermined		Aviation	Unknown	Unknown
Maintain and enhance (as needed or available) internal notification systems to warn of impending tornadic activity and related hazards.	2020	New	This action is based upon available funding and technological advancements. This action will be completed as able.	Structure and Infrastructure Projects	Medium	Undetermined		Aviation	Unknown	Unknown
Research and implement improvements to the Aviation Department's capabilities to respond to damage caused by tornados through improved equipment and procedures	2015	Ongoing	The airports will continue to enhance and improve its capabilities as technology and resources allow.	Education and Awareness Programs	High	Ongoing	unknown	Aviation	Unknown	Unknown
Enhance personnel awareness to the personal dangers inherent with tornados and mitigate any damage from the related hazards										
Conduct training and provide information for personnel regarding the inherent dangers of and maintaining safety during a tornado	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	High	Ongoing	unknown	Emergency Management	Unknown	Unknown
Identify funding sources for training and information for personnel regarding the inherent dangers of and maintaining safety during a tornado	2015	Ongoing	Funding sources have not been identified, but we will continue to research/discover funding sources.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	Unknown
Ensure public facilities have shelters to accommodate staff and visitors during tornadoes/natural hazards.										
Retrofit or add shelters to existing public facilities with inadequate protection from tornadoes and high wind.	2015	Deferred	This action has been replaced by educating the facilities on how to shelter from a tornado.	Education and Awareness Programs	Low	2015	Human life		Unknown	Unknown
Improve and enhance personnel resiliency to damage from tornados										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Ensure personnel and tenants are adequately informed regarding potential weather conditions	2015	Ongoing	Technology and procedures are continually improving. Although the latest technology and procedures have been implemented over the last five years, new methods will be implemented as they evolve.	Education and Awareness Programs	High	Ongoing	unknown	Emergency Management	Unknown	Unknown
Identify and implement enhanced procedures and improve facilities to provide adequate protection of personnel and tenants from the damage of tornados	2015	Ongoing	Technology and procedures are continually improving. Although the latest technology and procedures have been implemented over the last five years, new methods will be implemented as they evolve.	Structure and Infrastructure Projects	High	Ongoing	unknown	Emergency Management	Unknown	Unknown
Improve and upgrade Public Works Department's capability to respond to damage caused by tornadoes										
Enhance and upgrade the capability to remove debris resulting from tornado damage	2015	Deferred	This action is no longer under the scope of Public Works and has been deferred to other departments	Structure and Infrastructure Projects	Low	Deferred	unknown		Unknown	Unknown
Improve KCMO's ability to mitigate damage from hazardous materials released due to tornadic activity										
Ensure personnel have proper training (SDS, Hazcom, HAZWOPER, etc.) to respond and mitigate the damage from hazardous material release due to facility damage from tornados	2020	Ongoing	This training is provided on a regular basis, but funding sources to provide the training is researched.	Education and Awareness Programs	Medium	Ongoing		Emergency Management	Unknown	Unknown
Increase resiliency of storage mechanism for hazardous materials against a release due to tornadic activity	2020	New	Further research and funding is needed to make a determination on means to increase resiliency.	Structure and Infrastructure Projects	Medium	Undetermined		Fire Dept	Unknown	Unknown
Provide KCFD personnel training on the latest lessons learned and best practices in containing hazardous materials released due to tornadic activity.	2020	New	Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Provide training on methods to secure hazardous materials against release due to facility damage from tornados	2020	New	Such training is provided on a continuous basis. Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Research and implement equipment and procedures to efficiently contain hazardous material incidents resulting from tornadic activity.	2020	Ongoing	KCFD continues to research best practises for hazardous material containment, but funding for expanded research and equipment would be accepted.	Structure and Infrastructure Projects	Medium	Undetermined		Fire Dept	Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Research training and funding for training for methods and best practices to respond and mitigate the damage from hazardous materials released due to facility damage from tornadoes	2020	New	Different departments within KCMO follow white sheets and other information regarding best practices. Funding for expanded mitigation measures would be accepted.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Research training and funding for training for methods and best practices to secure hazardous materials from release due to facility damage from tornadoes	2020	New	Different departments within KCMO follow white sheets and other information regarding best practices. Funding for expanded mitigation measures would be accepted.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Improve Police Department's ability to conduct operations to mitigate loss of life and damage to property.										
Identify funding source to provide best protection and highest visibility in order to ensure operation ability.	2015	Ongoing	PPE is continually provided; no funding exists at this time, but KCPD will continue to pursue.	Unspecified	Unspecified	Ongoing	unknown	Police Dept	Unknown	Unknown
Work with Regional National Weather Service to provide Storm Spotter training to officers.	2015	Ongoing	NWS continues to work with the police academy to train cadets in storm spotting and reporting techniques.	Unspecified	Unspecified	Ongoing	unknown	Emergency Management	Unknown	Unknown
Improve systems to monitor and track tornadoes										
Improve the method of surveillance (currently cameras) in spotting and tracking tornadoes	2020	New	The KCMO OEM, with its partners, will continue to research improved systems and funding to implement those systems.	Structure and Infrastructure Projects	High	Undetermined		Emergency Management	Unknown	Unknown
Improve the capabilities of urban search and rescue teams in collapsed building techniques										
Identify and conduct training courses and exercises in collapsed building search and rescue techniques	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	Medium	Ongoing	unknown	Fire Dept	Unknown	Unknown
Identify funding sources to enhance the operational capabilities of urban search and rescue teams in conducting collapsed building search and rescues	2015	Ongoing	Capability improvement diminished due to defunding of USAR teams. FD will continue to pursue possible funding sources.	Structure and Infrastructure Projects	High	Ongoing	unknown	Fire Dept	Unknown	Unknown
Improve the capabilities of search and rescue teams through providing equipment and other means to conduct collapsed building search and rescues	2015	Ongoing	Capability improvement diminished due to defunding of USAR teams. FD will continue to pursue possible funding sources.	Structure and Infrastructure Projects	High	Ongoing	unknown	Fire Dept	Unknown	Unknown
Improve the Health Department's ability to mitigate diseases resulting from tornadic activity										
Enhance Health Department's ability to distribute mass medication after tornadic resulting diseases through improved methods, training, and funding.	2020	Ongoing	KCHD seeks enhancements to its ability to mass distribution of medication after a disaster. Additional funding for resources would be beneficial.	Education and Awareness Programs	Medium	Undetermined		health dept	Unknown	Unknown
Research methods and funding to enhance Health Department's inspection of food potentially contaminated resulting from tornadic activity.	2020	New	KCHD continues to research food inspection and contamination protocols but could use additional funding to expand its efforts.	Education and Awareness Programs	Medium	Undetermined		health dept	Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Research methods, training, and funding to enhance Health Department's ability to track diseases resulting from tornadic activity.	2020	New	KCHD continues to research disease tracking protocols but could use additional funding to expand its efforts.	Education and Awareness Programs	Medium	Undetermined		health dept	Unknown	Unknown
Research methods, training, and funding to improve Health Department's processes for controlling disease vectors resulting from tornadic activity.	2020	New	KCHD continues to research disease vector control protocols but could use additional funding to expand its efforts.	Education and Awareness Programs	Medium	Undetermined		health dept	Unknown	Unknown
Incorporate strategies into KCMO development plans to mitigate damage from tornadic activity										
Incorporate mitigation strategies into the development of KCMO's Comprehensive Plan	2020	New	As soon as this mitigation plan is complete, then the City's planning teams will examine what elements can be incorporated.	Local Plans and Regulations	Medium	Undetermined		Planning Dept	Unknown	Unknown
Increase personnel awareness of safety measures and mitigation actions to take in response to tornados										
Develop and maintain mitigation programs the reduce the volume of debris that can cause damage during high winds resulting from tornados	2015	Deferred	This action belongs under a different goal.	Structure and Infrastructure Projects	Low	n/a	unknown		Unknown	Unknown
Ensure personnel are adequately informed regarding potential weather conditions.	2015	Ongoing	Personnel receive briefings and training to prevent or reduce the effects of weather related injuries.	Education and Awareness Programs	Unspecified	Ongoing		Emergency Management		
Increase public awareness on mitigating the damage from tornados										
Conduct high wind refuge inspections for businesses	2015	Ongoing	Trained personnel conduct inspections upon request.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	General Fund
Include tornado information in preparedness outreach and campaigns	2015	Ongoing	OEM provides information and conducts presentations regarding all types of severe weather.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	General Fund
Upgrade, enhance, and expand capabilities to warn public and private individuals, agencies, and business of imminent tornado threats	2015	Ongoing	Capabilities have been expanded from just the outdoor tornado warning sirens to include mass notification and social media.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	General Fund
Utilize social media to share weather forecasts and tornado safety information	2015	Ongoing	OEM added mass notification system in 2015 and accounts on Twitter and Facebook. It will continue to research the best method for mass notification and social media usage.	Education and Awareness Programs	High	Ongoing	unknown	Emergency Management	Unknown	General Fund
Maintain and improve relationships with meteorologists and media										
Participate in the Integrated Warning Team coordinated by NWS	2015	Ongoing	Participation is 2x per year.	Education and Awareness Programs	High	Ongoing	unknown	Emergency Management	Unknown	General Fund
Mitigate damage and loss of life as a result of tornados to public and recreational areas and facilities										
Build in or designate high wind refuge areas within recreational facilities	2015	Completed	Garrison Community Center has built a designated "safe room." Others will be evaluated on a case basis.	Structure and Infrastructure Projects	Low	2016	unknown		Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Ensure tornado warning systems and protocols are available for recreational personnel at facilities	2015	Ongoing	This action needs additional implementation.	Education and Awareness Programs	High	Ongoing	unknown	Emergency Management	Unknown	Unknown
Identify and conduct training for personnel on tornado procedures	2015	Ongoing	Parks and Recreation currently provides training, but the program could be improved.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	Unknown
Mitigate or prevent the disruption of cyber networks, structures, and conduits as a result of damage from tornados										
Research and implement enhanced operational methods, hardware, systems, and technology to mitigate cyber disruption from the effects of tornados	2015	Ongoing	IT researches and implements current best practises against power surges and cyber intrusions.	Structure and Infrastructure Projects	High	Ongoing	unknown	Emergency Management	Unknown	Unknown
Floods										
Decrease the number of fatalities and injuries from flooding										
Explore and implement systems to protect drivers from flash flooding on roadways	2020	New	KCMO OEM, with other barricade departments, is exploring resources to improve roadway flashflooding protection.	Structure and Infrastructure Projects	Medium	Undetermined		public works	Unknown	Unknown
Explore systems to improve and enhance flood warnings and flood warning systems	2020	Ongoing	WSD continues to explore improved methods and systems with regard to flood warning.	Structure and Infrastructure Projects	Medium	Undetermined		public works	Unknown	Unknown
Discourage new development in floodplain and flood prone areas										
**Levy fees on new residential, commercial, and infrastructure development in floodplains or flood prone areas to finance flood mitigation, preparedness, response, and recovery actions	2015	Ongoing	No fees currently exist; WSD has no interest in pursuing at this time. CPD, however, may considered over the next 5 years.	Local Plans and Regulations	Medium	Ongoing	unknown	Planning Dept	Unknown	Unknown
Enhance Health Department's ability to mitigate disease related issues caused by floods										
Enhance Health Department's ability to distribute mass medication before or after the onset of flood caused diseases through improved methods, training, and funding.	2020	New	KCHD seeks enhancements to its ability to mass distribution of medication after a disaster. Additional funding for resources would be beneficial.	Education and Awareness Programs	High	Undetermined		health dept	Unknown	Unknown
Research methods and funding to enhance Health Department's ability to track diseases from flooding.	2020	Ongoing	KCHD continues to research disease tracking protocols but could use additional funding to expand its efforts.	Education and Awareness Programs	Medium	Ongoing		health dept		
Research methods and funding to enhance Health Department's inspection of food potentially contaminated by flood waters.	2020	Ongoing	KCHD continues to research food inspection and contamination protocols but could use additional funding to expand its efforts.	Education and Awareness Programs	High	Undetermined		health dept	Unknown	Unknown
Research methods and funding to improve Health Department's processes for controlling disease vectors after a flood.	2020	Ongoing	KCHD continues to research disease vector control protocols but could use additional funding to expand its efforts.	Education and Awareness Programs	Medium	Ongoing		health dept		
Enhance public awareness and education efforts related to flooding.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Encourage home owners and businesses to purchase flood insurance.	2015	Ongoing	KCMO has sent out 414 of the 590 properties in need of flood insurance and owns the other 176 properties. KCMO has applied, also, for 2 NSF grants for education.	Education and Awareness Programs	High	Ongoing	Reduces the burden of repair costs to home and business owners through the use of flood insurance funds.	Planning Dept	Unknown	Water Services Dept., Office of Emergency Management
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from federal, state, and other organizations and provide them to home owners and businesses in flood-prone areas.	2015	Ongoing	Stormwater Utility has obtained information and distributed in-house and with the public. Improvement on this action will include mass education programs.	Education and Awareness Programs	High	Ongoing	Reduces risk to home owners and business owners in flood-prone areas through flood mitigation education.	Emergency Management	Unknown	Office of Emergency Management, Water Service Dept.
Research and utilize social media to share weather forecasts and flood safety information	2015	Ongoing	KCMO OEM partners with other agencies to provide the information via social media and messaging systems	Education and Awareness Programs	Medium	Ongoing		Emergency Management		
Enhance public awareness of the hazards associated with dam failures, as well as mitigation and preparedness activities										
Collect and disseminate public education materials to property owners near on in inundation pathways of dams that address dam safety, preparedness, and mitigation activities	2015	Deferred	lacked funding; will carry over to the 2020 plan	Education and Awareness Programs	Low	Deferred				
Conduct a public education campaign to inform dam owners and citizens living near the inundation pathways of dams about the need to properly maintain and upgrade these structures - particularly those that are more than 50 years old	2015	Deferred	lacked funding; will carry over to the 2020 plan	Education and Awareness Programs	Low	Deferred				
Work with partners to conduct public education campaigns to inform citizens living near the inundation pathways of dams of the need to be familiar with the emergency action plans for these dams	2015	Deferred	lacked funding; will carry over to the 2020 plan	Education and Awareness Programs	Low	Deferred				
Enhance public awareness, outreach and education efforts related to flooding										
During flood events, use public information officers and their tools along with the media to message risks from flooding.	2020	Ongoing	KCMO Departments continue to examine improved methods to disseminate information regarding flood risks even before the event.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Encourage owners of structures to purchase flood insurance	2020	Ongoing	This is accomplished by WSD on a continual basis as circumstances align.	Education and Awareness Programs	High	Undetermined		floodplain manager	Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding resources for mechanisms to disseminate information to the public on all forms of flood risks for public awareness, outreach and education including health and disease associated with flood waters	2020	New	KCMO Departments continue to examine improved methods to disseminate information regarding flood risks even before the event. Discovering funding would be beneficial.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Obtain brochures and related publications on flood mitigation, preparedness, response and recovery from FEMA, SEMA, and other organizations and provide them to home owners and businesses in flood-prone areas.	2020	New	Due to limitations and federal fiscal issues, material is not a readily available. KCMO will continue to use these products as available in addition to producing its own.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Provide a web link homepage that serves as a flood identification, response and mitigation resources center of all the products available.	2020	Ongoing	This action is expanded during actual events, although general information is available.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Use other public meetings on storm water to educate and provide these tools with information handed out to serve as links that help the public learn and act.	2020	New	This will be pursued as personnel and resources are made available.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Work with Floodplain Management, Emergency Management, SEMA & FEMA to develop a public education program on identifying, planning and mitigating flood risk that provides the public tools to see their options.	2020	Ongoing	This is done on a regular basis.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Enhance the ability to protect the public during flooding incidents to mitigate loss of life and property										
Improve KCPD's ability to assist with roadway flash flooding warnings to prevent loss of life and property.	2020	New	More specific actions will be researched (such as co-training) and implemented as resources become available.	Structure and Infrastructure Projects	High	Undetermined		Police Dept	Unknown	Unknown
Provide training for officers to improve response capability during flooding incidents.	2020	New	More specific actions will be researched (such as co-training) and implemented as resources become available.	Education and Awareness Programs	Medium	Undetermined		Police Dept	Unknown	Unknown
Enhance the capabilities of city departments with flood response duties to mitigate damage from floods										
Better leverage flood warning data that identifies flood risks likely to occur and the time left until they occur in order to help mobilize to mitigate or prevent threats to public safety where known and where time and resources.	2020	New	When methods and resources improve, WSD will research and utilize based on funding availability.	Education and Awareness Programs	High	Undetermined		public works	Unknown	Unknown
Coordinate the city-wide flood barricade task force and update the SOP annually	2015	Ongoing	Flood Barricade Task Force meets at the beginning of every storm season.	Education and Awareness Programs	High	Ongoing	unknown	public works	Unknown	General Fund

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Develop an automated barricade tracking system for known community flood risks and where possible add warnings for these locations to aid in gaining time to respond before flooding and flood damages occur.	2020	New	KCMO OEM, with other barricade departments, is exploring resources to improve roadway flashflooding protection.	Structure and Infrastructure Projects	Unspecified	Undetermined		public works	Unknown	Unknown
Identify funding sources and replace damaged barriers to prevent traffic through high water areas thus mitigating the loss of life.	2020	New	Additional funding will be researched and utilized if possible.	Structure and Infrastructure Projects	Unspecified	Undetermined		public works	Unknown	Unknown
Enhance the EOC capability to monitor and mitigate flood conditions										
Coordinate with Water Dept., dam stakeholders, and other groups associated with dam operations	2015	Ongoing	WSD regularly meet with USACE and KCMO Levee Committee	Structure and Infrastructure Projects	High	Ongoing		water dept		
Develop a contact list for agencies/individuals involved with dam operations	2015	Deferred	Deferred to other goal as that department works more closely with USACE	Structure and Infrastructure Projects	Medium	Deferred				
Explore and implement systems to improve flood warnings	2015	Ongoing	With WSD, ensure most current product and practices are being used to monitor and warn of flooding	Education and Awareness Programs	Medium	Ongoing		water dept		
Upgrade and enhance the surveillance capability of the EOC to monitor flood conditions	2015	Ongoing	The system has been upgraded over the last 5 years. However, new technology means that this action will be ongoing.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	Emergency Management	Unknown	General Fund
Ensure continued operability of dam to prevent failure and resulting damage to the MCI facilities.										
Enhance environmental control and erosion prevention to maintain the integrity of the KCI dam.	2015	Ongoing	Regular maintenance checks are made of the KCI owned dam	Structure and Infrastructure Projects	High	Ongoing		Aviation		
Ensure levee requirements and integrity are maintained to prevent damage from flooding due to levee failure										
Coordinate with US Army Corps of Engineers to ensure best practices and operations are utilized to maintain levees against failure and flooding	2015	Ongoing	WSD maintains a continual partnership with the US Army Corps. on all facility needs and improvement efforts.	Local Plans and Regulations	High	Ongoing		public works		
Identify and conduct training for levee inspectors to ensure levee integrity to prevent flooding	2015	Ongoing	This is done annually or semi-annually with US Army Corps. Inspections.	Structure and Infrastructure Projects	High	Ongoing		public works		
Perform inspections and assessments of levees and levee systems to track deficiencies and prevent levee failure and flooding	2015	Ongoing	This is Annually done with the US Army Corps and with a score from the US Army Corps. that drives operations, maintenance and improvement items.	Structure and Infrastructure Projects	High	Ongoing		public works		
Examine repetitive flood loss properties and determine feasible and practical mitigation options										
As funding allows, repetitive flood loss properties and structures will be targeted for buyout	2015	Deferred	Lack of adequate funds to implement on more than an extremely limited program.	Local Plans and Regulations	High	Deferred	unknown		Unknown	PIAC, other

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**Identify potential funding opportunities to implement mitigation options for repetitive flood loss properties	2015	Ongoing	The properties have been identified; this will carry over to the 2020 plan for further work	Local Plans and Regulations	Low	Ongoing	unknown	floodplain manager	Unknown	Unknown
**With stakeholders, explore incentive options to encourage property owners to take action to prevent or reduce future flood losses	2015	Ongoing	New development is subject to floodplain development review process. In partnering with OEM; this action is progressing through just education. More methods will need to be explored before this action can reach closer to completion.	Local Plans and Regulations	Medium	Ongoing	unknown	floodplain manager	Unknown	Unknown
**Work with owners of repetitive flood loss properties to identify feasible mitigation strategies and potential opportunities; determine property owners' interest in specific mitigation options	2015	Ongoing	The number of repetitive loss properties is 45/164; in 2017 KCMO vote \$150M in bond funds for mitigation; more work is to be done	Local Plans and Regulations	Medium	Ongoing	unknown	floodplain manager	Unknown	Unknown
Expand KCPD's ability to assist with life safety operations during flooding										
Acquire additional equipment necessary to participate in and conduct swift water rescues	2020	New	This is pursued as funding becomes available.	Other	Low	Undetermined		Police Dept	Unknown	Unknown
KCPD to enhance partnership with KCFD to participate in swift water training and rescues	2020	New	This action will be examined and implemented as applicable and available.	Education and Awareness Programs	Low	Undetermined		Police Dept	Unknown	Unknown
Implement or improve flood warning systems										
Determine the need for stream gauges in waterways currently lacking flood warning systems or additional stream gauges in waterways with flood warning systems already in place	2015	Completed	KCMO currently has 74 stream gauges with the intention of obtaining more as funding allows. This action will continue in a new form for 2020 plan.	Structure and Infrastructure Projects	High	2019	unknown		Unknown	Unknown
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public	2015	Ongoing	KCMO has access to multiple flood warning systems but is always pursuing to increase its ability to monitor and acquire flooding data.	Education and Awareness Programs	High	Ongoing	unknown	Emergency Management	Unknown	Unknown
Develop and implement procedures to quickly analyze and disseminate information from flood warning systems to the public .	2020	New	This action will be pursued, but there is no schedule at this time.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Develop information from the flood, stage, and risk data into KCMO's flood warning system software.	2020	New	This action will be pursued, but there is no schedule at this time.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Develop stage and gauge data to correlate from events with downstream risks and as modeling improved develop stage/flood elevation triggers that lead to downstream flooding of roads, structures, and parking lots.	2020	New	This action will be pursued, but there is no schedule at this time.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown

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Use improved flood hazard and flood risk data, develop flow path data, time to crest data, and flood risk data to determine best locations for additional stream gauges and develop better warnings for all gauges to improve response time.	2020	New	This action will be pursued, but there is no schedule at this time.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Work with local governments and other stakeholders to share data from flood warning systems in multiple jurisdictions	2015	Ongoing	KCMO currently partners with Overland Park, KS, Johnson County, KS, and the Unified Government of Kansas City, KS. KCMO will pursue data sharing with other agencies.	Education and Awareness Programs	High	Ongoing	unknown	Emergency Management	Unknown	Unknown
Work with local governments and other stakeholders to share data from the flood warning systems and tools in multiple jurisdictions	2020	New	This action will be pursued, but there is no schedule at this time.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Implement projects and procedures to enhance resiliency of KCMO infrastructure against flood damage										
Complete a Repetitive Loss Area Analysis to determine Risk and Benefits.	2020	New	This action will be pursued, but there is no schedule at this time.	Education and Awareness Programs	High	Undetermined		public works	Unknown	Unknown
Improve roadway structure to mitigate damage from flooding	2020	New	This action will be pursued as funding availability allows.	Structure and Infrastructure Projects	High	Undetermined		public works	Unknown	Unknown
Provide enhancement to existing and new structures to improve flooding resiliency	2020	New	This action will be pursued as funding availability allows.	Structure and Infrastructure Projects	High	Undetermined		public works	Unknown	Unknown
Reroute channels to alleviate overflow and mitigate against flooding	2020	New	This action will be pursued as funding availability allows.	Structure and Infrastructure Projects	High	Undetermined		public works	Unknown	Unknown
Research funding to implement flood mitigation procedures and projects	2020	New	This action will be pursued, but there is no schedule at this time.	Structure and Infrastructure Projects	High	Undetermined		public works	Unknown	Unknown
Research funding to support and educate that flood insurance coverage should be mandatory on all primary structures.	2020	New	This action will be pursued, but there is no schedule at this time.	Unspecified	Unspecified	Undetermined		Planning Dept	Unknown	Unknown
Support and push for more funding in FEMA Flood Insurance Policies for Increased Cost of Compliance to assist structures substantially damaged by flooding in rebuilding in a manner that will meet NFIP regulatory and/or Local requirements.	2020	New	This action is pursued, but the completion date is based on external agency schedules.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Improve and enhance the capability to respond to and mitigate damage from flooding incidents										
Identify funding sources and replace damaged barriers to prevent traffic through high water areas thus mitigating the loss of life.	2015	Completed	Water Department paid out of own budget to obtain new barricades; will carry over into the 2020 plan	Structure and Infrastructure Projects	Medium	2016	unknown		Unknown	Unknown
Improve community resiliency to flooding										

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Provide critical services facilities (e.g. nursing homes) with oversight on flood plain management (evacuation plans, discourage building in flood plains, etc.)	2020	New	This action will be pursued, but there is no schedule at this time.	Education and Awareness Programs	Medium	Undetermined		Planning Dept	Unknown	Unknown
Improve flood hazard assessments and flood mapping										
Conduct an in-depth flood risk analysis utilizing HAZUS data and create detailed maps based on GIS technology to identify areas at risk from flooding	2015	Deferred	Action unable to be completed due to limited staffing and funding.	Education and Awareness Programs	High	Deferred	unknown		Unknown	Unknown
**Coordinate the collection of demographics, economic, watershed, land use, and other data required by the HAZUS-Flood software program and/or GIS systems	2015	Ongoing	Many sources for HAZUS exist, but KCMO continues to progress toward completion. The data, however, does change over time, so this project will carry forward to the 2020 plan.	Education and Awareness Programs	High	Ongoing	unknown	Planning Dept	Unknown	Unknown
Develop and regularly update a mitigation list for structures, land/parcels, and roads/RoWs with a ranking for these based on depth, severity, and frequency of flooding.	2015	Ongoing	This list is 95% complete for 1) Regulatory FEMA flood Risks, however FEMA's Mitigation Tracker continues to be a one entry system, vs. a database upload by geospatial fields. Due to this KCMO has been unable to move our 11,819 identified community flood risks in 1) into FEMA/SMEA systems to improve identification efforts and support for mitigation post disasters. Ultimately KCMO still desires to make this data into an ongoing Notice of Intent in Mass to SEMA/FEMA for risks in order to have more ability to mitigate flood risks post disaster or through other supporting grant methods.	Education and Awareness Programs	High	Ongoing	unknown	public works	Unknown	Unknown
**Obtain parcel data for flood boundary areas and enhance vulnerability assessments for these areas	2015	Ongoing	Parcel data, particularly ownership, is constantly changing. Therefore, this is an ongoing action as the data fluctuates.	Structure and Infrastructure Projects	High	Ongoing	unknown	public works	Unknown	Unknown
Update City Stream Buffers based on new regulatory and non-regulatory products' 1% severity or better	2015	Ongoing	Discussions have been occurring between CPD and WSD on these efforts. This remains a funding issue for both groups and while it can be listed as ongoing given discussion on how to update and improve, it is unfunded.	Local Plans and Regulations	High	Ongoing	unknown	public works	Unknown	Unknown

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Use products that classify, identify, and weigh community flood risks and the technological tools developed for them to improve regulation and information sharing to get enhanced mitigation, improvements, and future developments.	2015	Ongoing	Geospatial analysis tools and communication tools have been key here. Efforts continue in 23 square miles of KCMO to test new methods of combining all of these needs. These methods are ArcGIS Online based.	Local Plans and Regulations	High	Ongoing	unknown	public works	Unknown	Unknown
Using city, state, and federal products complete the modernization of city regulatory and non-regulatory floodplains and adopt by the three phases outlined in Action #4 over time	2015	Ongoing	As noted above this is ongoing. Efforts have been completed in 1) Regulatory Floodplains, 2) Non-Regulatory Floodplains and 3) Hydrologic flow accumulation pathways.	Education and Awareness Programs	High	Ongoing	unknown	public works	Unknown	Unknown
Using city, state, and federal products develop, analyze, and prioritize flood risk, severity, and frequency for structures, land/parcels, and roads/RoWs. Continuously improve with 3 key phases of development by: 1) Regulatory Floodplain Areas, 2) Non-Reg	2015	Ongoing	Floodplain Areas has been completed for 95% of FEMA Regulatory Zones in KCMO for 10%, 4%, 2%, 1% and 0.2% annual chance storms. 1,786 Roads, 865 Structures, and 881 Parking Lots are flooded by the 10% annual chance storm in KCMO. 3,821 Roads, 4,715 Structures and 3,283 Parking Lots flood in the 0.2% annual chance storm in KCMO. This covers less than 33% of the City's territory though, as Regulatory floodplain stops on tributaries smaller than 1 square mile. 2) Non-Regulatory has tested new 2D methods in 33 square miles of KCMO including Second Cr., First Cr. and the North East Industrial District. These Research Efforts have confirmed that flood depth, velocity and risk products can be developed on old 1D modeling products down to 10 acres while modern 2D methods can identify these risks down to 10 square feet. Modern modeling methods have incredibly more capability in identifying flood risk, but accurate geospatial data on underground	Education and Awareness Programs	High	Ongoing	unknown	public works	Unknown	Unknown
Work to develop these map, data, and list products for GIS tools for direct use by public and private needs to fulfill multiple needs for information to aid flood mitigation	2015	Ongoing	This has not been begun due to ongoing development of the tools and products as discussed above. Products will remain internal for some time. Disclaimer requirements will exist when these flood risks are made available. Since the data is being developed this is an ongoing effort.	Education and Awareness Programs	High	ongoing	unknown	public works	Unknown	Unknown

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Improve flood hazard assessments and flood mapping to assist in mitigating damage from flooding										
Classify, identify, analyze and weigh community flood risks to improve regulation, analysis, identification, prevention, mitigation, improvements, and future development in ways that avoid flood risk.	2020	New	This action involves a extensive project; no completion date is foreseeable at this time.	Education and Awareness Programs	High	Undetermined		public works	Unknown	Unknown
Develop 1D/2D flood risk products for: 1.) Regulatory floodplain areas, 2.)Non-regulatory flood risk Areas 3.) Upstream Hydrologic Areas without hydraulics using flow accumulation pathways to 0.5 acre drainage.	2020	New	This action involves a extensive project; no completion date is foreseeable at this time.	Local Plans and Regulations	High	Undetermined		public works	Unknown	Unknown
Develop 1D/2D modeling paradigms and procedures to fully identify all community flood risk for all of the community.	2020	New	This action is based on the previous action.	Local Plans and Regulations	High	Undetermined		public works	Unknown	Unknown
Research and implement improvements to the language of Chapter 61 and adopt these new 1D/2D models, studies, and identified flood risks in there complete geospatial and modeling forms.	2020	New	This action is based on the previous action.	Local Plans and Regulations	High	Undetermined		public works	Unknown	Unknown
Update the City Stream Buffers using the above products with appropriate scientifically grounded methods to protect the community and public.	2020	New	This action is based on the previous action.	Local Plans and Regulations	High	Undetermined		public works	Unknown	Unknown
Use 1D/2D modeling methods and further geospatial analysis to identify flood depth, velocity, storage, shear stress risks for all flood risk areas.	2020	New	This action is based on the previous action.	Local Plans and Regulations	High	Undetermined		public works	Unknown	Unknown
Use the modeling products developed to improve FEMA based HAZUS and BCA Analysis of flood risks and costs vs. benefits of mitigation/prevention within the community.	2020	New	This action is based on the previous action.	Local Plans and Regulations	High	Undetermined		public works	Unknown	Unknown
Using the 1D/2D modeling methods and further geospatial analysis identify areas of erosive, slope or meander based risk to add to flood risk knowledge to support development risk identification.	2020	New	This action is based on the previous action.	Local Plans and Regulations	High	Undetermined		public works	Unknown	Unknown
Work to develop list products as GIS tools for direct use by public and private parties to fulfill multiple needs for information to aid flood mitigation.	2020	New	This action is based on the previous action.	Education and Awareness Programs	High	Undetermined		public works	Unknown	Unknown
Improve hazard assessment information for dams within Kansas City, MO										

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Analyze all dams, their capacity, and failure triggers in or affecting Kansas City, MO to estimate downstream risk to life and property.	2020	New	This action involves a extensive project; no completion date is foreseeable at this time.	Education and Awareness Programs	Medium	Undetermined		public works	Unknown	Unknown
Collaborate with MDNR and US Army Corps methods to develop and determine inundation mapping for dams failure to reduce loss of life from flooding.	2020	New	This action involves a extensive project and external agencies' schedules; no completion date is foreseeable at this time.	Education and Awareness Programs	Medium	Undetermined		public works	Unknown	Unknown
Identify and estimate the height of all dams within the Kansas City metropolitan area	2015	Ongoing	additional components and resources needed to obtain the data; will continue during the 2020 cycle	Structure and Infrastructure Projects	Medium	Ongoing		public works		
Include maps and information from inundation studies and dam emergency action plans in local emergency operations and land use plans	2015	Completed	current released maps are used in LEOP; will continue during the 2020 Hazard Mitigation Plan's cycle (if new information released)	Local Plans and Regulations	High	2018				
Obtain assessed valuation data and population figures for areas in the vicinity of dam inundation pathways so that enhanced vulnerability assessments may be conducted describing the number of lives and amount of property at risk from dam failure	2015	Ongoing	additional components and resources needed to obtain the data; will continue during the 2020 cycle	Local Plans and Regulations	Medium	Ongoing		public works		
Prioritize by GIS the size and volume of the dams within the Kansas City metropolitan area under normal and full volume conditions	2015	Ongoing	additional components and resources needed to obtain the data; will continue during the 2020 cycle	Structure and Infrastructure Projects	Medium	Ongoing		public works		
Using the latest information from many resources, develop GIS layers and maps indicating the locations, inundation pathways, and hazard potential of known dams within the Kansas City metropolitan area.	2020	New	This action is dependent upon previous actions, which makes a completion date difficult to determine at this time.	Local Plans and Regulations	High			public works		
Using the latest information from the NID, MDNR's inventory of dams, and other resources, develop GIS layers and maps indicating the locations, inundation pathways, and hazard potential of known dams within the Kansas City metropolitan area.	2015	Completed	2017 - GIS was developed; this will be revisited during the 2020 Hazard Mitigation Plan's Goals and Actions	Local Plans and Regulations	High	2017				
Work with MDNR's Water Resources program and USACE to determine which dams in the Kansas City regional area have had inundation studies, inundation pathway maps, and emergency action plans developed	2015	Deferred	USACE is reluctant to provide necessary information to conduct this action	Structure and Infrastructure Projects	High	Deferred				
Improve KCMO's ability to mitigate damage from hazardous materials released due to flooding										

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Ensure personnel have proper training (SDS, Hazcom, HAZWOPER, etc.) to respond and mitigate the damage from hazardous material release due to flooding.	2020	New	This training is provided on a regular basis, but funding sources to provide the training is researched.	Education and Awareness Programs	High	Undetermined		Fire Dept	Unknown	Unknown
Increase resiliency of storage mechanism for hazardous materials against a release due to flooding damage	2020	New	Further research and funding is needed to make a determination on means to increase resiliency.	Structure and Infrastructure Projects	High	Undetermined		Fire Dept	Unknown	Unknown
Provide KCFD personnel training best on the latest lessons learned and best practices in containing hazardous materials released due to flooding.	2020	New	Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Structure and Infrastructure Projects	High	Undetermined		Fire Dept	Unknown	Unknown
Provide KCFD personnel training on methods to secure hazardous materials against release due to flooding.	2020	New	Such training is provided on a continuous basis. Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Education and Awareness Programs	High	Undetermined		Fire Dept	Unknown	Unknown
Research and implement equipment and procedures for KCFD to efficiently contain hazardous material incidents resulting from flooding.	2020	New	Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Structure and Infrastructure Projects	High	Undetermined		Fire Dept	Unknown	Unknown
Research training and funding for training for methods and best practices to respond and mitigate the damage from hazardous materials released due to flooding.	2020	New	Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Education and Awareness Programs	High	Undetermined		Fire Dept	Unknown	Unknown
Research training and funding for training for methods and best practices to secure hazardous materials from release due to flooding.	2020	New	Different departments within KCMO follow white sheets and other information regarding best practices. Funding for expanded mitigation measures would be accepted.	Education and Awareness Programs	High	Undetermined		Fire Dept	Unknown	Unknown
Improve reliability and capability of telecommunications network to resist the effects of flooding										
Add redundancy and multiple pathways for fiber network to ensure continued operation during flooding	2020	New	This is an extensive project, and innovations change regularly. KCMO will continue to research and implement the best practises.	Structure and Infrastructure Projects	High	Undetermined		Police Dept	Unknown	Unknown
Improve the capabilities of water rescue teams										
Identify and conduct training courses and exercises for water rescues in flood waters	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	High	Ongoing	unknown	Fire Dept	Unknown	Unknown
Identify funding sources to enhance the operational capabilities of water rescue teams in conducting rescues in flood waters	2015	Ongoing	Capability improvement dimished due to defunding of USAR teams. FD will continue to pursue possible funding sources.	Structure and Infrastructure Projects	High	Ongoing	unknown	Fire Dept	Unknown	Unknown

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Improve the capabilities of water rescue teams through providing equipment and other means to conduct flood water rescues	2015	Ongoing	Capability improvement diminished due to defunding of USAR teams. FD will continue to pursue possible funding sources.	Structure and Infrastructure Projects	High	Ongoing	unknown	Fire Dept	Unknown	Unknown
Improve the capability of the Aviation Department to mitigate the damage from flooding										
As funding becomes available, research elements for development of a Stormwater Master Plan at the MKC.	2020	New	This action is dependent upon funding; no anticipated completion date at this time.	Structure and Infrastructure Projects	High	Undetermined		Aviation	Unknown	Unknown
As needed, improve relief well systems at MKC to counter damage from flooding.	2020	Ongoing	Wells are improved/repared as funding and resources become available.	Structure and Infrastructure Projects	High	Undetermined		Aviation	Unknown	Unknown
Continue to research barricade techniques and products to protect against flooding at the Downtown Airport and purchase and/or implement as appropriate.	2020	Ongoing	This action is ongoing as funds and resources become available.	Structure and Infrastructure Projects	High	Undetermined		Aviation	Unknown	Unknown
Enhance and upgrade equipment and protocols to respond to and mitigate the damage from flooding	2015	Ongoing	2019 purchased new sand barrier equipment; added new wells. Will carry this action over to 2020 plan.	Structure and Infrastructure Projects	High	Ongoing	unknown	Aviation	Unknown	Unknown
Identify alternate staging and evacuation areas for personnel and equipment in the event of flooding	2015	Completed	Additional areas were located. Due to changing ownership and other factors, we will continue to pursue new areas as needed.	Structure and Infrastructure Projects	High	2019	unknown		Unknown	Unknown
Improve the capability of the Aviation Department to mitigate the damage from flooding due to levee failure										
Enhance and upgrade equipment and protocols to respond to and mitigate the damage from flooding from levee failure	2015	Ongoing	Wheeler Airport will continue to enhance and improve its capabilities as technology and resources allow.	Structure and Infrastructure Projects	High	Ongoing		public works		
Identify alternate staging and evacuation areas for personnel and equipment in the event of flooding from levee failure	2015	Completed	Additional areas were located. Due to changing ownership and other factors, we will continue to pursue new areas as needed.	Local Plans and Regulations	Medium	2018		public works		
Improve the structural integrity of dams to reduce the threat of dam failures, which cause flooding										
Develop and implement codes and ordinances requiring minimum site and construction standards for dams	2015	Deferred	funding for research not available; will carry over to 2020 plan	Local Plans and Regulations	Low	Deferred				
Encourage dam owners to repair or upgrade their dams, particularly those that are more 50 years old, by offering them a reduction in local taxes or similar financial incentive	2015	Deferred	no resources to provide incentives or assistance	Structure and Infrastructure Projects	Medium	Deferred				
Identify and pursue grants to repair or improve dams	2015	Deferred	no grants available	Structure and Infrastructure Projects	Low	Deferred				
Mandate for regular repairs and improvements to dams within the Kansas City metropolitan area owned by the city and privately	2015	Ongoing	will carry over to the 2020 plan	Structure and Infrastructure Projects	High	Ongoing		public works		
Improve warning and evacuation systems and procedures in the event of flooding due to dam failure										

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Adopt policies, codes, or ordinances to discourage development in the vicinity of dam inundation zones	2015	Deferred	need dam failure analysis and current USACE inundation maps	Local Plans and Regulations	Medium	Deferred				
Where feasible, add and maintain outdoor warning systems to campgrounds and other recreational areas downstream from dams	2015	Deferred	no funding available; will carry over to 2020 plan with broader, more accurate action	Structure and Infrastructure Projects	Medium	Deferred				
Incorporate strategies into KCMO development plans to mitigate damage from flooding										
Incorporate mitigation strategies into the development of KCMO's Comprehensive Plan	2020	New		Local Plans and Regulations	Medium	Undetermined		Planning Dept	Unknown	Unknown
Increase public awareness of health and disease related issues associated with flood waters										
Collect and disseminate public education materials that address health and disease issues associated with flood waters	2015	Ongoing	Information is provided by the Health Dept. during flooding incidents.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	PHP/ CRI/ Levee Funds/ Core PH Funds/ Water Services/ City Communications
Identify funding resources for mechanisms to disseminate information to the public regarding protection against health and disease issues associated with flood waters	2015	Ongoing	The Health Department is continuously researching funding sources.	Education and Awareness Programs	Low	Ongoing	unknown	health dept	Unknown	PHP/ CRI/ Levee Funds/ Core PH Funds/ Water Services/ City Communications
Utilize various methods of social media to inform and educate the public regarding health and disease issues associated with flood waters	2015	Ongoing	Information is provided by the Health Dept. during flooding incidents.	Education and Awareness Programs	Low	Ongoing	unknown	health dept	Unknown	PHP/ CRI/ Levee Funds/ Core PH Funds/ Water Services/ City Communications
Integrate flood mitigation strategies with projects and activities designed to protect, restore, or enhance ecosystems and the environment and/or create recreational opportunities for the community.										
Consider alternative uses for floodplains and flood prone areas that have less impact from flooding	2015	Ongoing	Although KCMO has considered many alternate uses, future possibilities may arise. This will be carried over to the 2020 plan. CPD reviews private projects.	Natural Systems Protection	Medium	Ongoing	unknown	Planning Dept	Unknown	PIAC, other
Consider the construction of detention basins, small lakes, and greenways or riparian corridors in areas of new development to channel and catch storm water, thereby reducing the likelihood of flooding	2015	Deferred	Study has demonstrated that these actions may not be most efficacious to achieving flood mitigation. KCMO is exploring a more holistic approach to this goal.	Natural Systems Protection	High	Deferred	unknown		Unknown	PIAC, other
Develop partnerships between emergency management, floodplain management, and environmental groups to provide education regarding the benefits of collaboration	2015	Ongoing	This action covers multiple actions, and will thus be reflected in the 2020 plan. Much progress has been made.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	Unknown
Identify funding sources for the acquisition of flood prone land of environmental, recreational, and flood mitigation uses	2015	Ongoing	KCMO has identified may funding sources. However, the City will explore additional sources as they become available; will carry this over to the 2020 plan	Natural Systems Protection	High	Ongoing	unknown	Emergency Management	Unknown	PIAC, other

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Identify specific programs and activities that can be developed and implement with stakeholders	2015	Ongoing	WSD continues to provide grants for environmental programs and efforts through a number of non-profit organizations. Efforts with floodplain management to improve their IB 120 and improve floodplain administration continue. WSD and CPD continue to discuss and work on efforts regarding the Stream Buffer Ordinance.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	Unknown
In concert with existing comprehensive and land use plans, develop a strategy for acquiring flood prone property for use as open space or park land	2015	Ongoing	Much land has been acquired; means of less costly acquisition have been explored. This will carry over to the 2020 plan.	Natural Systems Protection	Medium	Ongoing	unknown	Planning Dept	Unknown	PIAC, other
Research controlling runoff to original native conditions with respect to peak flow and velocity.	2020	New	Completion date is dependent upon findings.	Unspecified	Unspecified	Undetermined		public works	Unknown	Unknown
Seek better methods to reduce runoff volume increases caused by development to be more like native conditions through finding a lower flow rate and velocity that can reduce erosive impacts due to larger total volume of runoff.	2020	New	Completion date is dependent upon findings.	Natural Systems Protection	Medium	Undetermined		public works	Unknown	Unknown
Seek storage, infiltration, roughness and soil amendment methods of slowing, reducing, infiltrating and storing runoff including reduction of impervious parking.	2020	New	Completion date is dependent upon findings.	Natural Systems Protection	Medium	Undetermined		public works	Unknown	Unknown
Seek to reduce collection by inlets and conveyance by pipes where development or redevelopment creates runoff volumes greater than native or existing runoff totals.	2020	New	Completion date is dependent upon findings.	Natural Systems Protection	Medium	Undetermined		public works	Unknown	Unknown
Work with area environmental groups and other stakeholders to develop and implement flood mitigation strategies that also promote the restoration and/or sustainability of fish and wildlife habitats	2015	Deferred	This action is covered by the following action "Develop partnerships between emergency management, floodplain management, and environmental groups to provide education regarding the benefits of collaboration"	Natural Systems Protection	Medium	Deferred	unknown		Unknown	PIAC, other
Mitigate flooding damage to public facilities										
Identify funding sources to implement flood damage mitigation mechanisms such as water pumping equipment	2015	Ongoing	This is done for known existing ground water for new facilities; retrofitting is sporadic due to funding.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	public works	Unknown	Unknown

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Implement flood damage mitigation mechanisms such as water pumping equipment	2015	Ongoing	This is done for known existing ground water for new facilities; retrofitting is sporadic due to funding.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	public works	Unknown	Unknown
Research the feasibility of installing water pumping equipment in public facilities to reduce the damage from minor flooding	2015	Ongoing	This is done for known existing ground water for new facilities; retrofitting is sporadic due to funding.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	water services	Unknown	Unknown
Participate in and ensure compliance with flood mitigation and floodplain management programs.										
Obtain the latest copies of the flood insurance rate maps (FIRMs), floodplain maps, and similar documents	2015	Completed	KCMO has obtained the most recent maps. However, the data changes over time and, therefore, new maps will be obtained as they become available. Continued through 2020 plan.	Local Plans and Regulations	High	2016	unknown		Unknown	Unknown
Participate in the National Flood Insurance Program (NFIP) and Community Rating System (CRS)	2015	Completed	KCMO participates in the NFIP and will continue to do so. This will be carried over to the 2020 plan.	Local Plans and Regulations	High	2019	unknown		Unknown	Unknown
**Continue efforts to train staff and specialize in order to become a Certified Technical Partner with FEMA.	2020	Ongoing	WSD continues to improve its staff such as through Certified Technical Partner training.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
**Coordinate and fund with private partners to obtain the latest copies of the flood insurance rate maps (FIRMs), and other GIS products. Add other supporting information within a Flood Risk component of City's Parcel Viewer Mapper.	2020	New	This is an extensive project with multiple external agencies, and a completion date cannot be determined at this time.	Education and Awareness Programs	High	Undetermined		public works	Unknown	Unknown
**Improve Floodplain Administration through providing more tools for the administrators, public, and development that easily, technically inform them of flood risk and requirements.	2020	Ongoing	Innovations are constantly developed; a completion date cannot be determined at this time.	Education and Awareness Programs	High	Undetermined		floodplain manager	Unknown	Unknown
**Improve Information Bulletin information relating to Floodplain Regulatory compliance and processes.	2020	Ongoing	The Information Bulletin is improved as new requirements are adopted.	Local Plans and Regulations	High	Undetermined		floodplain manager	Unknown	Unknown
**Participate in the Community Rating System (CRS) and plan its stages of improvement and needs in order to seek support and funding.	2020	Ongoing	This is an ongoing action as circumstances and requirements change.	Local Plans and Regulations	High	Undetermined		floodplain manager	Unknown	Unknown
**Participate in the National Flood Insurance Program (NFIP)	2020	Ongoing	This is an action performed on an annual basis.	Local Plans and Regulations	High	Undetermined		floodplain manager	Unknown	Unknown
Reduce flood related damage to public and private property in flood prone areas through structural and nonstructural retrofits, prevention of development within, or removal of property										
**Adopt ordinances prohibiting private development in flood plains or flood-prone areas.	2020	New	Unknown timeframe for this action.	Local Plans and Regulations	High	Undetermined		Planning Dept	Unknown	Unknown

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**As funding allows, repetitive flood loss properties or structures will, in flood prone areas, be targeted for buyout or other mitigations that meet FEMA and local Minimums of protection for base flood elevations and freeboard.	2020	New	Buyouts occur as funding becomes available and varies by property.	Unspecified	Unspecified	Undetermined		floodplain manager	Unknown	Unknown
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2020	New	Completion date is based on external agency timelines.	Structure and Infrastructure Projects	Medium	Undetermined		Emergency Management	Unknown	Unknown
For public facilities, seek to modernize to FEMA regulatory compliance, even when not required, if cost benefit justifies.	2020	Ongoing	This action is accomplished as funds and resources become available.	Unspecified	Unspecified	Undetermined		public works	Unknown	Unknown
Identify funding sources to implement flood damage mitigation mechanisms.	2020	New	This action to be accomplished as time and resources allow.	Structure and Infrastructure Projects	High	Undetermined		public works	Unknown	Unknown
Levy fees on non-public use development in floodplains or flood-prone areas to finance flood mitigation, preparedness, response and recovery actions.	2020	Ongoing	This action is based on the frequency of land development.	Local Plans and Regulations	High	Undetermined		Planning Dept	Unknown	Unknown
Provide funding for water and wastewater districts to elevate vulnerable equipment, or implement other modifications, at water and wastewater facilities to FEMA and other standards.	2020	New	This action to be accomplished as time and resources allow.	Unspecified	Unspecified	Undetermined		public works	Unknown	Unknown
Reduce/mitigate the risk of flooding on public facilities in flood-prone areas.	2020	New	This action to be accomplished as time and resources allow.	Structure and Infrastructure Projects	High	Undetermined		public works	Unknown	Unknown
Require development identify its frequency and severity of risk and base flood elevations per NFIP and City adopted APWA standards and require appropriate local community freeboard.	2020	Ongoing	This action is taken as needed when new development arises.	Local Plans and Regulations	High	Undetermined		public works	Unknown	Unknown
Research and implement methods to continually improve Chapters and standards to better identify flood risks to better inform and prevent harm to or from development or redevelopment.	2020	New	This action to be accomplished as time and resources allow.	Unspecified	Unspecified	Undetermined		public works	Unknown	Unknown
**Use methods to encourage home owners and businesses to reduce/mitigate the risk of flooding for their structures.	2020	New	This action to be accomplished as time and resources allow.	Unspecified	Unspecified	Undetermined		public works	Unknown	Unknown
Reduce flood-related damage to public, residential and commercial property in flood-prone areas through structural and nonstructural retrofits or removal of property.										

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As funding allows, repetitive flood loss properties and structures will be targeted for buyout.	2015	Deferred	Studies have shown that, due to population density, buyout may not always be the most efficacious means in all cases. This action will be expanded in the 2020 plan.	Structure and Infrastructure Projects	Low	Deferred	Reduces the cost of repetitive damages through the structural and nonstructural retrofits and removal of structures on flood-prone property.		Unknown	PIAC, Water Service Dept., Other
**Elevate public facilities in flood prone areas and encourage private sector facilities to do likewise.	2015	Ongoing	KCMO continues to locate and elevate public facilities as funding is available.	Structure and Infrastructure Projects	High	Ongoing	Reduce flood-related damage to property by elevating structures above flood planes.	public works	Unknown	All departments
Encourage homeowners and businesses in flood-prone areas to elevate mechanical systems (i.e., furnaces, hot water heaters, electrical panels, etc.).	2015	Completed	Educational programs have resulted in substantial improvement	Education and Awareness Programs	High	2017	Reduces the cost of property damage to public, residential and commercial property in flood-prone areas.			
Encourage utility providers to assess their facilities, distribution systems, etc. for vulnerability to flooding and, if necessary, retrofit or modify them to decrease vulnerability.	2015	Deferred	FEMA has taken on the responsibility	Structure and Infrastructure Projects	High	Deferred	Reduces the risk to general public by ensuring reliable utility services			
**Encourage water and wastewater districts to elevate vulnerable equipment, electrical controls and other equipment at wastewater treatment plants, potable water treatment plants and pumping stations.	2015	Ongoing	Retrofitting falls under WSD; CPD ensures new construction complies with building codes	Structure and Infrastructure Projects	High	Ongoing	City Planning Development	city planning		
**Identify incentives to offer home owners and businesses to remove or retrofit their structures in flood-prone areas.	2010	Ongoing	This action to be accomplished as time and resources allow.	Unspecified	High	Ongoing	Reduce flood damage to property by encouraging home and business owners to employ flood mitigation strategies to their structures.	city planning	Unknown	Water Service Dept.
Reduce the potential for flooding due to dam failures by enhancing inspection efforts										

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Adopt codes or ordinances requiring permits, engineering studies, and safety certifications prior to the construction of new dams	2015	Ongoing	all earthen structures must comply with earthen building codes	Local Plans and Regulations	Medium	Ongoing		city planning		
Adopt local ordinances and/or state laws requiring all dam owners to develop emergency action plans for their dams and provide local public safety agencies with copies of these plans	2015	Deferred	lack funding; will carry over to 2020 plan	Local Plans and Regulations	Low	Deferred				
For dams not regulated by the state, encourage dam owners to inspect their dams at least annually and submit the results to MDNR	2015	Ongoing	only 1 person is available to continue this action	Education and Awareness Programs	Low	Ongoing		water services		
Use storm water storage facilities covenants, to compile GIS locations and inspect on repeating schedule as funding allows. Where O&M is needed, use the covenants and KCMO chapters to preserve function and maintain dam safety.	2020	New	This is an extensive project with multiple external agencies, and a completion date cannot be determined at this time.	Structure and Infrastructure Projects	High	Undetermined		water services	Unknown	Unknown
To decrease the threat of flooding, reduce the potential for dam failures by adding to the number of dams regulated by the state.										
Contact representatives in the state legislature to propose changes in state law lowering the height limit for regulated dams to 25 feet on those holding back 50 acre-feet or more of water.	2020	New	This action requires cooperation of state legislature and is difficult to determine a schedule.	Local Plans and Regulations	Medium	Undetermined		city council	Unknown	Unknown
Revise existing dam safety laws and/or regulations to add all high hazard dams to the list of regulated dams, regardless of dam height and reservoir storage capacity, until the hazard potential of these dams can be downgraded.	2020	New	This is an extensive project with multiple external agencies, and a completion date cannot be determined at this time.	Local Plans and Regulations	Medium	Undetermined		water services	Unknown	Unknown
Heat										
Encourage building practices and the use of materials that reduce the damaging effects of fire as a result of excessive heat and prolonged drought.										
Adopt building code modifications prohibiting the use of highly flammable materials in the construction of roofs on new homes or replacing roofs on existing homes.	2015	Ongoing	Building code modifies as needed.	Structure and Infrastructure Projects	Medium	Ongoing		Planning Dept		
Enhance Aviation Department's ability to protect its staff, tenants, and visitors from the effects of prolonged heat										
Improve and enhance Aviation Department's fleet of buses to serve as alternate sources of power for its facilities during excessive heat	2020	New	This action will be performed as funding and resources are identified.	Structure and Infrastructure Projects	Medium	Undetermined		Aviation	Unknown	Unknown

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Improve and enhance Aviation Department's fleet of buses to serve as cooling stations during excessive heat	2020	New	This action will be performed as funding and resources are identified.	Structure and Infrastructure Projects	Medium	Undetermined		Aviation	Unknown	Unknown
Enhance Health Department's capability to ensure food safety resulting from excessive heat										
Research and implement methods, training, and funding to improve Health Department's inspection of food potentially tainted from exposure to excessive heat.	2020	New	KCHD continues to research food inspection and contamination protocols but could use additional funding to expand its efforts.	Education and Awareness Programs	High	Undetermined		health dept	Unknown	Unknown
Ensure at-risk, low income, and elderly residents have adequate capability to maintain climate temperatures in their homes during heat waves.										
Identify funding sources to provide materials and labor to assist at-risk, low income, and elderly residents with improving their residence's capability to maintain climate control during heat waves	2015	Ongoing	CDBG funding annually provides for water heaters, A/C units, and furnaces. More funding would increase the success of the program.	Local Plans and Regulations	Medium	Ongoing		Emergency Management		
Obtain funding to continue the KCPD's program of providing and distributing fans to citizens in need	2020	New	This action is dependent upon a funding source, so a completion time and status cannot be determined at this time.	Other	High	Undetermined		Police Dept	Unknown	Unknown
Partner with community service organizations to provide materials and volunteer labor to assist at-risk, low income, and elderly residents with improving their residence's capability to maintain climate control during heat waves.	2015	Ongoing	The City partners with many organizations.	Other	Medium	Ongoing		Emergency Management		
Improve Aviation Department's capacity to mitigate damage from fires during periods of excessive heat and drought										
Increase the number apparatuses and improve firefighting equipment at MCI to suppress both aviation, structural, and wildland fires exacerbated by drought and excessive heat.	2020	New	Status to be determined once funding sources are identified.	Structure and Infrastructure Projects	Medium	Undetermined		Aviation	Unknown	Unknown
Improve Aviation facilities' resistance to excessive heat to reduce energy consumption for climate control within the facilities										
Research and implement best practices for building methods to prevent heat absorption and mitigate heat damage.	2015	Ongoing	In 2017, Wheeler built a new facility with improved climate resistance. Wheeler will continue, however, to improve its facilities as technology and resources allow.	Structure and Infrastructure Projects	Medium	Ongoing		Emergency Management		
Improve community resiliency to and mitigate health related issues from excessive and prolonged heat incidents.										
Identify funding resources for mechanisms to improve methods that enhance communities' resistance to excessive heat through various mechanisms, procedures, and planning.	2015	Deferred	Lack of funding and resources	Local Plans and Regulations	Medium	2020				

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Participate in urban planning to improve communities' resistance to excessive heat through various mechanisms such as increased foliage coverage, reflective building roofs, etc.	2015	Deferred	Lack of funding and resources to implement.	Structure and Infrastructure Projects	Medium	2020				
Research and identify improved methods that enhance communities' resistance to excessive heat through various mechanisms, procedures, and planning.	2015	Deferred	Lack of funding and resources	Local Plans and Regulations	Medium	2020				
Improve Health Department's ability to track adverse effects of excessive heat.										
Improve Health Department's methods through research, training, and funding to track deaths related to excessive heat and drought in order to implement measures to reduce further deaths.	2020	Ongoing	KCHD continually seeks improved best practices but could use additional funding.	Education and Awareness Programs	High	Undetermined		health dept	Unknown	Unknown
Improve local and regional capabilities to reduce the number of deaths related to excessive and prolonged heat incidents.										
Identify and provide training to emergency medical services, hospitals, medical examiners, and other personnel to accurately report heat related deaths and illnesses.	2015	Ongoing	The Health Department strives to partner with many agencies to track and treat heat related illnesses.	Education and Awareness Programs	Medium	Ongoing		health		
Identify and provide training to health department, emergency medical service, and other city personnel to prevent, recognize, identify, and provide treatment for heat related health issues.	2015	Ongoing	The Health Department continually provides materials for employees and the public on health related issues.	Education and Awareness Programs	Medium	Ongoing		health		
Identify and provide training to school personnel, athletic clubs, and other private entities operating in non-climate controlled conditions to prevent, recognize, identify, and provide treatment for heat related health issues.	2015	Ongoing	The Health Department continually provides materials for employees and the public on health related issues.	Education and Awareness Programs	Medium	Ongoing		health		
Identify funding resources for mechanisms to provide training to emergency medical services, hospitals, medical examiners, and other personnel to accurately report heat related deaths and illnesses.	2015	Deferred	Health Dept. unable to locate funding; the programs will continue regardless.	Education and Awareness Programs	Medium	Deferred				
Identify funding resources to provide training to City personnel, and emergency medical service personnel to prevent, recognize, identify, and provide treatment for heat related health issues.	2015	Deferred	Health Dept. unable to locate funding; the programs will continue regardless.	Education and Awareness Programs	Medium	Ongoing				

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Identify funding resources to provide training to health department, emergency medical service, and City personnel to prevent, recognize, identify, and provide treatment for heat related health issues.	2015	Ongoing	The Health Department continually provides materials and training for employees and the public on health related issues.	Education and Awareness Programs	Medium	Ongoing		health		
Identify funding resources to provide training to school personnel, athletic clubs, and other private entities operating in non-climate controlled conditions to prevent, recognize, identify, and provide treatment for heat related health issues.	2015	Ongoing	The Health Department strives to partner with many agencies to track and treat heat related illnesses.	Education and Awareness Programs	Medium	Ongoing		health		
Identify funding resources to research, identify, and procure mechanisms and equipment to provide climate controlled on-site medical facilities to provide rapid treatment for heat related complications to mitigate potential deaths from excessive heat.	2015	Ongoing	The Health Department will continue to research funding sources.	Education and Awareness Programs	Medium	Ongoing		health		
Obtain funding to increase the fleet of apparatuses that can be used to transport citizens in need to cooling centers	2020	New		Other	High	Undetermined		emergency management	Unknown	Unknown
Partner with local health agencies, local medical examiners, hospitals, and emergency medical services to track heat related deaths and injuries.	2015	Ongoing	The Health Department strives to partner with many agencies to track and treat heat related illnesses.	Local Plans and Regulations	Medium	Ongoing		health		
Research and identify mechanisms and equipment to provide climate controlled on-site medical facilities to provide rapid treatment for heat related complications to mitigate potential deaths from excessive heat incidents.	2015	Ongoing	Procedures and mechanisms are updated as best practices improve.	Structure and Infrastructure Projects	Medium	Ongoing		health		
Research and identify mechanisms to improve the efficiency of tracking and relating to partners information regarding heat related deaths and injuries.	2015	Ongoing	The Health Department strives to partner with many agencies to improve its ability to track and treat heat related illnesses.	Local Plans and Regulations	Medium	Ongoing		Emergency Management		
Improve public facilities' resistance to excessive heat to reduce energy consumption for climate control within the facilities										
Encourage the use of best practices and architectural procedures as outlined in the LEED certification process.	2015	Deferred	Although KCMO currently encourages as described under the International Code, LEED is unofficially being phased out. LEED is not expected to remain over the next 5 years.	Education and Awareness Programs	Medium	2020				

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Identify funding sources to implement best practices for building methods to prevent heat absorption and mitigate heat damage	2015	Ongoing	Funding has not been found for this action but will continue to pursue.	Structure and Infrastructure Projects	Medium	Ongoing		emergency management		
Research and implement best practices for building methods to prevent heat absorption and mitigate heat damage.	2015	Ongoing	Parks and Recreation provides training; implementing green roofs on certain new facilities.	Structure and Infrastructure Projects	Medium	Ongoing		Emergency Management		
Improve reliability and capability of telecommunications network to resist the effects of excessive heat										
Add heat resistant switches to the fiber network	2020	New	This action to be accomplished as time and resources allow.	Structure and Infrastructure Projects	High	Undetermined		Police Dept	Unknown	Unknown
Improve resiliency to and mitigate damage from prolonged periods of drought.										
Develop and implement a plan to mitigate and respond to drought.	2015	Deferred	This action is deferred due to lack of funding and resources. It will be reestablished once funding and resources are available.	Local Plans and Regulations	Low	Deferred				
Improve the Police Department's ability to mitigate the effects of heat on officers in order to maintain operational ability during heat waves.										
Identify and conduct training courses to mitigate adverse effects of excessive heat on officers.	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	High	Ongoing		Police Dept		
Identify funding source to ensure facility climate control capabilities.	2015	Ongoing	Funding not discovered but will continue to pursue.	Structure and Infrastructure Projects	Medium	Ongoing		Police Dept		
Identify funding source to ensure officers' are able to continue operating during excessive heat waves.	2020	Ongoing	PPE for the officers is continually provided; no funding at this time but will continue to pursue.	Local Plans and Regulations	Medium	Ongoing		Police Dept		
Identify funding source to ensure sustainability vehicle operational abilities during excessive heat waves.	2015	Ongoing	PPE for the officers is continually provided and vehicles can operate with a/c; no funding at this time but will continue to pursue.	Structure and Infrastructure Projects	Medium	Ongoing		Police Dept		
Improve the wildland firefighting capabilities of the fire department to mitigate loss of life and property damage caused by excessive heat and prolonged drought.										
Identify and inventory alternative water resources for the fire departments, map their locations, and determine appropriate methods for utilizing these water resources.	2015	Deferred	KCMO is the major water provider for the area. There are no alternate sources. However, there is some capacity through mutual aid to obtain water.	Structure and Infrastructure Projects	High	Deferred				
Identify funding sources to enhance the operational capabilities and fire prevention programs of fire departments.	2015	Ongoing	FD will continue to pursue possible funding sources.	Local Plans and Regulations	High	Ongoing		fire		
Identify training opportunities and conduct training courses and exercises focusing on wildland firefighting.	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	Medium	Ongoing		fire		
Incorporate strategies into KCMO development plans to mitigate damage from excessive heat and prolonged drought										

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Incorporate mitigation strategies into the development of KCMO's Comprehensive Plan with respect to heat.	2020	New	As soon as this mitigation plan is complete, then the City's planning teams will examine what elements can be incorporated.	Local Plans and Regulations	Medium	Undetermined		Planning Dept	Unknown	Unknown
Increase personnel and tenant awareness on health issues related to excessive and prolonged heat incidents.										
Conduct training and disseminate information on identifying symptoms of heat injuries.	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	Medium	Ongoing		health		
Conduct training and disseminate information to personnel and tenants on mitigating the effects of prolonged heat	2015	Ongoing	Training for personnel and tenants is continual and refreshed constantly.	Education and Awareness Programs	Medium	Ongoing		health		
Ensure outdoor crews have adequate personal protection to mitigate the effects of prolonged heat.	2015	Ongoing	Equipment and briefing for personnel is provided.	Education and Awareness Programs	Medium	Ongoing		Emergency Management		
Ensure personnel and tenants are adequately informed regarding potential weather conditions.	2015	Ongoing	Information is regularly disseminated via briefings.	Education and Awareness Programs	Medium	Ongoing		Emergency Management		
Increase public awareness on procedures to mitigate the effects of drought.										
Include drought information in preparedness outreach and campaigns.	2015	Ongoing	WSD provides information on water conservation and other programs.	Education and Awareness Programs	Low	Ongoing		Emergency Management		
Provide drought preparedness information to public and private individuals and organizations	2015	Ongoing	OEM partners with Health Department and Water Services to disseminate information.	Education and Awareness Programs	Low	Ongoing		Emergency Management		
Research and utilize social media to share drought and safety information	2015	Ongoing	OEM partners with Health Department and Water Services to disseminate information	Education and Awareness Programs	Low	Ongoing		Emergency Management		
Increase resiliency and mitigate any effects of a drought on public and recreational areas and facilities.										
Implement procedures to increase the use of native species for landscaping purposes.	2015	Ongoing	This program was implemented by Parks and Recreation in their 2018 Sustainability Plan but will continue in the 2020 plan.	Natural Systems Protection	Medium	Ongoing		parks and recreation; public works		
Research and implement capabilities of KCMO's fountains to pump and recirculate water.	2015	Ongoing	This has been accomplished for a handful of fountains and will continue for the 2020 plan.	Structure and Infrastructure Projects	Medium	Ongoing		parks and recreation		
Increase the city's resiliency to heat waves in outdoor locations										
Identify funding sources to Research and implement landscaping techniques to provide resistance from sunlight during critical hours.	2015	Deferred	The Parks and Recreation Dept. has taken ownership of this goal and action. It will be added to their part of the 2020 plan.	Structure and Infrastructure Projects	Medium	2020				
Parks and Recreation will identify funding sources to Research and implement landscaping techniques to provide resistance from sunlight during critical hours.	2020	New	The Parks and Recreation Dept. has taken ownership of this goal and action.	Structure and Infrastructure Projects	Medium	Ongoing		parks and recreation		
Parks and Recreation will research and implement landscaping techniques to provide resistance from sunlight during critical hours.	2020	New	The Parks and Recreation Dept. has taken ownership of this goal and action.	Structure and Infrastructure Projects	Medium	Undetermined		parks and recreation		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Research and implement landscaping techniques to provide resistance from sunlight during critical hours.	2015	Deferred	The Parks and Recreation Dept. has taken ownership of this goal and action. It will be added to their part of the 2020 plan.	Structure and Infrastructure Projects	Medium	2020				
Increase whole community resiliency through public awareness on health issues related to excessive and prolonged heat incidents.										
Identify funding resources for mechanisms to disseminate information to the public regarding health issues related to heat waves.	2015	Ongoing	This action to be accomplished as time and resources allow.	Education and Awareness Programs	Medium	Ongoing		emergency management		
Partner with other agencies and stakeholders to disseminate information to the public regarding heat related health issues.	2015	Ongoing	Partnering with other agencies and stakeholders is an ongoing action.	Education and Awareness Programs	Medium	Ongoing		emergency management		
Research and identify mechanisms to improve and increase the efficiency of disseminating information to the public regarding health issues related to heat waves.	2015	Ongoing	This action is based on previous actions. Researching and utilizing better mechanisms is an ongoing action.	Education and Awareness Programs	Medium	Ongoing		emergency management		
Mitigate and prevent additional harmful effects of heat waves.										
Update and implement best practices outlined in ozone policies to mitigate any additional harmful effects from ozone producing activities.	2015	Ongoing	Updated plan with OEQ in 2018; included using propane mowers, natural gas trucks, and battery operated leaf blowers. This action will continue through the 2020 plan.	Local Plans and Regulations	Medium	Ongoing		emergency management		
Mitigate or prevent damage due to wildland fires resulting from excessive heat and prolonged drought.										
Identify and conduct training for personnel on improved procedures, technology, and methods for enhancing the capability of preventing wildland fires.	2015	Ongoing	Parks and Recreation personnel take burn training through the Missouri Dept. of Conservation.	Education and Awareness Programs	High	Ongoing		emergency management		
Identify funding to enhance the capability of preventing wildland fires through improved procedures, technology, and methods.	2015	Ongoing	Parks and Recreation is looking at ways to improve its procedures and funding sources.	Structure and Infrastructure Projects	Medium	Ongoing		emergency management		
Research and implement improvements to the Aviation Department's capabilities to respond to wildland fires through improved equipment and procedures	2015	Ongoing	Purchased a "brush buggy," enhanced ARFF fire suppression capabilities, and participate in ongoing brush clearance	Other	High	Ongoing		Aviation		
Reduce water consumption and increase water conservation efforts to mitigate the effects of a drought.										
Identify funding sources to implement methods to track water usage within public and private buildings.	2020	New	Water Services will locate funding to implement water usage tracking methods.	Structure and Infrastructure Projects	Medium			water services		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding sources to implement methods to track water usage within public buildings.	2015	Completed	KCMO has funding for new software to provide real-time usage data; this action will carry over to the 2020 plan as new technology becomes available to track both public and private usage.	Structure and Infrastructure Projects	Medium	2020				
Identify funding sources to research best management practices in watering techniques and management for landscaping to reduce water need and consumption.	2015	Deferred	Parks and Recreation has taken over all landscaping. It is a duplicate action.	Structure and Infrastructure Projects	Low	2020				
Research and identify methods to track water usage within public buildings.	2015	Completed	Improvements have been made to tracking water usage; will carry this action over to the 2020 plan with broadening of action to include all city facilities and residential	Structure and Infrastructure Projects	Medium	2020				
Research and identify methods to track water usage within public and private buildings.	2020	New	This action to be accomplished as time and resources allow.	Structure and Infrastructure Projects	Medium			water services		
Research and implement water conservation technologies for new and existing public facilities.	2015	Deferred	Currently KCMO has some capability. This action will be combined and renamed for the 2020 plan.	Structure and Infrastructure Projects	Medium	2020				
Research, identify, and locate funding sources to implement water conservation technologies for new and existing public facilities.	2020	New	This action to be accomplished as time and resources allow.	Structure and Infrastructure Projects	Medium			water services		
Severe Thunderstorms										
Encourage building practices and the use of materials that reduce the damaging effects of severe thunderstorms										
Adopt current edition of building codes to address structural and architectural issues related to severe thunderstorms	2015	Ongoing	Current building codes address this issue. However, KCMO will adapt as new codes are adopted.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	Planning Dept	Unknown	Unknown
Enhance Aviation Department's ability to notify and warn staff and tenants of approaching storms, lightning, and other hazards to mitigate loss of life and property.										
Implement improved weather monitoring systems as needed in accordance with enhanced technology changes.	2020	New	This action to be accomplished as time and resources allow.	Education and Awareness Programs	Medium	Undetermined		Aviation	Unknown	Unknown
Maintain and enhance internal notification systems as applicable to warn of impending severe thunderstorms and related hazards.	2020	Ongoing	This action to be accomplished as time and resources allow.	Education and Awareness Programs	Medium	Undetermined		Aviation	Unknown	Unknown
Enhance personnel awareness to the personal dangers inherent with severe thunderstorms and mitigate any damage from the related hazards										
Conduct training and provide information for personnel regarding the inherent dangers of and maintaining safety during a tornado	2015	Ongoing	Personnel receive briefings and training to prevent or reduce the effects of weather related injuries.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding sources for training and information for personnel regarding the inherent dangers of and maintaining safety during a tornado	2015	Ongoing	Mitigation funding is always sought.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	Unknown
Ensure adequate measures are taken to mitigate any damage from severe thunderstorms										
Develop and maintain mitigation programs to the reduce the volume of debris that can cause damage during high winds resulting from severe thunderstorms	2015	Deferred	Solid Waste division is no longer under Public Works - now Neighborhood and Housing Services.	Structure and Infrastructure Projects	Medium	Deferred	unknown		Unknown	Unknown
Implement procedures to mitigate the damage caused by severe thunderstorms										
Ensure personnel and tenants are adequately informed regarding potential weather conditions	2015	Ongoing	A notification system is in place. However, the system will be improved with new technology and best practices.	Education and Awareness Programs	Medium	Ongoing	unknown	Emergency Management	Unknown	Unknown
Improve and upgrade Public Works Department's capability to respond to damage caused by severe thunderstorms										
Enhance and upgrade the capability to remove debris resulting from severe thunderstorm damage	2015	Deferred	Solid Waste division is no longer under Public Works - now Neighborhood and Housing Services	Structure and Infrastructure Projects	Medium	Deferred	unknown		Unknown	Unknown
Improve Aviation Department's capacity to mitigate damage from fires caused by lightning or other severe thunderstorm hazards										
Increase the number apparatuses and improve firefighting equipment at KCI to suppress both structural and wildland fires from lightning strikes.	2020	New	This action to be accomplished as time and resources allow.	Structure and Infrastructure Projects	Medium	Undetermined		Aviation	Unknown	Unknown
Improve Police Department's ability to maintain operational ability during severe weather.										
Identify funding source to provide best protection and highest visibility in order to ensure operation ability.	2015	Ongoing	PPE is continually provided; no funding at this time but will continue to pursue.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	Police Dept	Unknown	Unknown
Work with Regional National Weather Service to provide Storm Spotter training to officers.	2015	Ongoing	NWS still provides training at the academy.	Education and Awareness Programs	Medium	Ongoing	unknown	Police Dept	Unknown	Unknown
Improve systems to monitor and track thunderstorms										
Implement mechanisms to provide warning against lightning to protect life.	2020	New	This action to be accomplished as time and resources allow.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Improve the method of surveillance (currently cameras) in spotting and tracking severe thunderstorms	2020	New	This action to be accomplished as time and resources allow.	Education and Awareness Programs	High	Undetermined		Emergency Management	Unknown	Unknown
Improve the capability of Water Services to operate and be protected from the effects of severe thunderstorms										
Implement and improve the capability of Water Service facilities to be protected from lightning strikes and damage	2015	Ongoing	WSD is upgrading our facilities electrical and electronic communications systems, including SCADA continually. Building Facilities are also a focus point for lightning protection. All of these methods continue to better protect systems from static electricity and lightning threats. Our CIP has ongoing funding that supports these goals.	Structure and Infrastructure Projects	Low	Ongoing	unknown	water services	Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Implement and upgrade back-up and redundant power sources to maintain Water Services operability during severe thunderstorms	2015	Ongoing	The majority of major facilities have generator based backup and backup power sources. Funding for upgrade and expansion into remaining and smaller facilities is ongoing as Utility funding allows.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	water services	Unknown	Unknown
Incorporate strategies into KCMO development plans to mitigate damage from severe thunderstorms										
Incorporate mitigation strategies into the development of KCMO's Comprehensive Plan	2020	New	As soon as this mitigation plan is complete, then the City's planning teams will examine what elements can be incorporated.	Local Plans and Regulations	Medium	Undetermined		Planning Dept	Unknown	Unknown
Increase personnel awareness of safety measures and mitigation actions to take in response to severe thunderstorms										
Ensure personnel are adequately informed regarding potential weather conditions	2015	Ongoing	Personnel receive briefings and trainings to prevent or reduce the effects of weather related injuries.	Education and Awareness Programs	Medium	Ongoing	unknown	emergency management	Unknown	Unknown
Increase public awareness on mitigating the damage from thunderstorms										
Conduct high wind refuge inspections for businesses	2015	Ongoing	Trained personnel conduct inspections upon request.	Education and Awareness Programs	Medium	Ongoing	unknown	Fire Dept	Unknown	General Fund
Include weather information in preparedness outreach and campaigns	2015	Ongoing	OEM continues to provide information and presentations for KCMO.	Education and Awareness Programs	Medium	Ongoing	unknown	emergency management	Unknown	General Fund
Utilize social media to share forecasts and thunderstorm safety information	2015	Ongoing	KCMO OEM uses Nixle for mass notification (iPAWS as warranted).	Education and Awareness Programs	Medium	Ongoing	unknown	emergency management	Unknown	General Fund
Increase the resiliency of public facilities from damage incurred from severe thunderstorms										
Identify funding sources to provide protection to public facilities from high winds, lightning and hail to mitigate any damage that might be caused.	2015	Ongoing	KCMO is continually searching for funding sources.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	emergency management	Unknown	Unknown
Provide protection to public facilities from high winds, lightning and hail to mitigate any damage that might be caused.	2015	Ongoing	Some measures have been adopted, mostly for new construction. City Hall's roof was hardened against hail and falling ice.	Structure and Infrastructure Projects	Medium	Ongoing	unknown	public works	Unknown	Unknown
Research best practices and building code requirements in providing protection to public facilities from high winds, lightning and hail to mitigate any damage that might be caused.	2015	Ongoing	General Services researches best practices in protection.	Education and Awareness Programs	Medium	Ongoing	unknown	Planning Dept	Unknown	Unknown
Maintain and improve relationships with meteorologists and media										
Maintain Storm Ready Community designation and Weather Ready Nation Ambassador status	2015	Completed	Storm Ready designation is up for renewal in 2020.	Education and Awareness Programs	Medium	2016	unknown		Unknown	
Participate in the Integrated Warning Team coordinated by NWS	2015	Ongoing	Participation is 2x per year.	Education and Awareness Programs	Medium	Ongoing	unknown	emergency management	Unknown	General Fund

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Renew Storm Ready Community designation and Weather Ready Nation Ambassador status in 2020.	2020	New	Renew Storm Ready Community designation in 2020.	Education and Awareness Programs	High	Undetermined		Emergency Management		
Mitigate facility damage from severe thunderstorms and their effects										
Research mechanisms and funding to increase KCMO building resiliency to damage from high winds and hail.	2020	New	This action to be accomplished as time and resources allow.	Structure and Infrastructure Projects	Medium	Undetermined		public works	Unknown	Unknown
Mitigate or prevent damage and loss of life as a result of severe thunderstorms to public and recreational areas and facilities										
Ensure compliance with best practices and building codes related to mitigating damage from severe thunderstorms	2015	Deferred	Inadequate resources to enforce. However, new construction must comply with codes as part of permitting process.	Local Plans and Regulations	Medium	Deferred	unknown		Unknown	Unknown
Mitigate or prevent the disruption of cyber networks, structures, and conduits as a result of damage from severe thunderstorms										
Research and implement enhanced operational methods, hardware, systems, and technology to mitigate cyber disruption from the effects of severe thunderstorms.	2015	Ongoing	IT researches and implements current best practises against power surges and cyber intrusions.	Structure and Infrastructure Projects	High	Ongoing	unknown	Emergency Management	Unknown	Unknown
Reduce the damage due to the release of hazardous materials resulting from facilities damaged by severe thunderstorms										
Ensure fire personnel have proper training (SDS, Hazcom, HAZWOPER, etc.) to respond and mitigate the damage from hazardous material release due to facility damage from severe thunderstorms	2020	New	This training is provided on a regular basis, but funding sources to provide the training is researched.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Provide training on methods to secure hazardous materials against release due to facility damage from severe thunderstorms	2020	New	Such training is provided on a continuous basis. Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Research training and funding for training for methods and best practices to respond and mitigate the damage from hazardous materials released due to facility damage from severe thunderstorms	2020	New	Different departments within KCMO follow white sheets and other information regarding best practices. Funding for expanded mitigation measures would b accepted.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Research training and funding for training for methods and best practices to secure hazardous materials from release due to facility damage from severe thunderstorms	2020	New	Such training is provided on a continuous basis. Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Severe Winter Weather										
Enhance Health Department's capability to ensure food safety resulting from severe winter weather										
Research and implement methods, training, and funding to improve Health Department's inspection of food potentially tainted from loss of power due to ice.	2020	New	KCHD continues to research food inspection and contamination protocols but could use additional funding to expand its efforts.	Education and Awareness Programs	Low	Undetermined		health	Unknown	Unknown
Ensure at-risk, low income, and elderly residents have adequate capability to heat their homes in the winter.										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding sources to provide materials and labor to assist at-risk, low income, and elderly residents with improving their residence's capability to maintain climate control during cold weather.	2015	Ongoing	CDBG funding annually provides for water heaters, A/C units, and furnaces. More funding would increase the success of the program.	Education and Awareness Programs	Medium	Ongoing		health		
Partner with community service organizations to provide materials and volunteer labor to assist at-risk, low income, and elderly residents with improving their residence's capability to maintain climate control during cold weather.	2015	Ongoing	The City partners with many organizations.	Education and Awareness Programs	Medium	Ongoing		health		
Ensure city departments and human services agencies are aware of facilities with generators or emergency power that can be used as shelters in the event of severe winter weather.										
Consider the adoption of policies requiring emergency power systems in the construction of new public facilities.	2015	Completed	Larger structures must have emergency power systems for the safety of staff/clients.	Structure and Infrastructure Projects	Medium	2020				
Disseminate information on which facilities are open as shelters or warming stations during severe winter weather.	2020	Ongoing	This action is performed as needed during the event.	Education and Awareness Programs	High	Undetermined		Emergency Management		
Ensure that KCFD is able to continue life saving operations during severe cold and other winter weather elements										
Identify procedures and funding to improve the resiliency of equipment and apparatuses from extreme cold and ice.	2020	New	This action is performed as funding and resources allow.	Local Plans and Regulations	Medium	Undetermined		Fire Dept	Unknown	Unknown
Provide training for KCFD personnel on operating under winter weather conditions.	2020	Ongoing	KCFD trains its personnel in best practices as needed but would seek additional funding to improve its training.	Education and Awareness Programs	Medium	Undetermined		Fire Dept	Unknown	Unknown
Ensure the Parks and Recreation Department has the capacity to respond to winter related issues										
Enhance the capability to respond to winter related issues such as snow accumulation and ice	2015	Ongoing	Sidewalk snow plows have been purchased; more will be done toward this action	Structure and Infrastructure Projects	High	Ongoing		Parks and Recreation		
Identify and conduct training for personnel to respond to winter related issues such as snow and ice removal	2015	Ongoing	Personnel receive briefings and trainings to prevent or reduce the effects of weather related injuries.	Education and Awareness Programs	High	Ongoing		Parks and Recreations		
Implement and upgrade back-up and redundant power sources to maintain Water Services operability during severe winter weather										
Implement and upgrade back-up and redundant power sources to maintain Water Services operability during severe winter weather	2015	Ongoing	The majority of major facilities have generator based backup and backup power sources. Funding for upgrade and expansion into remaining and smaller facilities is ongoing as Utility funding allows.	Structure and Infrastructure Projects	Low	Ongoing		water services		
Improve Aviation Department's capability to mitigate the damage from severe winter storms										

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
As available or needed, enhance and/or expand the recently upgraded system of sensors to monitor surface conditions such as temperature, ice accumulation, or other complications from winter weather	2020	New	This action is performed as funding and resources allow.	Education and Awareness Programs	High	Undetermined		Aviation	Unknown	Unknown
As funding is available or as needed, increase and enhance ice melting apparatuses for planes and surfaces	2020	New	This action is performed as funding and resources allow.	Structure and Infrastructure Projects	High	Undetermined		Aviation	Unknown	Unknown
As funding or technology improves, increase Aviation Department's ability to mitigate damage from power loss caused by ice storms and other winter weather hazards	2020	New	This action is performed as funding and resources allow.	Structure and Infrastructure Projects	High	Undetermined		Aviation	Unknown	Unknown
Improve and enhance Aviation Department's fleet of buses to serve as alternate sources of power for its facilities	2020	New	This action is performed as funding and resources allow.	Structure and Infrastructure Projects	High	Undetermined		Aviation	Unknown	Unknown
Improve and enhance Aviation Department's fleet of buses to serve as warming stations	2020	New	This action is performed as funding and resources allow.	Structure and Infrastructure Projects	High	Undetermined		Aviation	Unknown	Unknown
Provide and upgrade redundant systems to ensure continued operation during severe winter weather.	2015	Ongoing	2017 a new facility was built. Wheeler Airport will continue to enhance and improve its capabilities as technology and resources allow. KCI purchased CNG buses that can be used as generators.	Structure and Infrastructure Projects	High	Ongoing		Aviation		
Research and upgrade operations and technology to improve capability to mitigate the damage from ice and snow	2015	Ongoing	2018 new de-icing chemicals implemented; 2019 runway sensors installed. Wheeler Airport will continue to enhance and improve its capabilities as technology and resources allow.	Structure and Infrastructure Projects	Medium	Ongoing		Aviation		
Improve Health Department's ability to track adverse effects of severe winter weather.										
Improve Health Department's methods through research, training, and funding to track deaths related to severe winter weather.	2020	New	KCHD continually seeks improved best practices but could use additional funding.	Education and Awareness Programs	High	Undetermined		health	Unknown	Unknown
Improve infrastructure resiliency to the effects of ice and snow										
Research and improve, as needed, road treatments and techniques to alleviate ice and snow from roadways	2020	New	This action is performed as funding and resources allow.	Structure and Infrastructure Projects	Medium	Undetermined		public works	Unknown	Unknown
Improve Police Department's ability to maintain operational ability during severe winter weather to assist with mitigating loss of life .										
Identify and conduct training courses to mitigate adverse effects of severe winter weather on officers.	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	Medium	Ongoing		Police Dept		
Identify funding in order to conduct training in emergency vehicle operation during ice and snow.	2015	Ongoing	Funding not discovered but will continue to pursue both funding and the related activity.	Structure and Infrastructure Projects	High	Ongoing		Police Dept		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Identify funding in order to provide winter weather related protective equipment for officers	2015	Ongoing	PPE is continually provided; no funding at this time but will continue to pursue.	Other	High	Ongoing		Police Dept		
Improve public facilities' resistance to heat loss to reduce energy consumption for climate control within the facilities										
Identify funding sources to implement best practices for building methods to prevent heat loss and mitigate damage to excessive cold temperatures	2015	Ongoing	Funding for programs is continuously sought.	Structure and Infrastructure Projects	Medium	Ongoing		public works		
Research and implement best practices for building methods to prevent heat loss and mitigate damage to excessive cold temperatures	2015	Ongoing	Much of the activity is based on retrofitting older buildings.	Structure and Infrastructure Projects	Medium	Ongoing		public works		
Improve reliability and capability of telecommunications network to resist the effects of excessive heat										
Add cold resistant switches to the fiber network to increase resilience and ensure operability during excessive cold.	2020	New	This action is performed as funding and resources allow	Structure and Infrastructure Projects	High	Undetermined		Police Dept	Unknown	Unknown
Improve resiliency of public facilities against the effects of winter weather										
Research and provide funding to install generators or other alternate power source for all new public building construction.	2020	New	This action is performed as funding and resources allow	Structure and Infrastructure Projects	High	Undetermined		public works	Unknown	Unknown
Improve the capability to respond to the effects and mitigate the damage from severe winter storms.										
Implement and enhance locating equipment upon snow/ice removal equipment to maximize efficient utilization and enhance operational capability.	2015	New	The City is continually looking for ways to improve its snow/ice removal capabilities. KCMO IT recently upgraded the system by which plows are tracked. KCMO IT will continue to enhance the capabilities as technology progresses.	Unspecified	Unspecified	Ongoing		public works		
Incorporate strategies into KCMO development plans to mitigate damage from severe winter weather										
Incorporate mitigation strategies into the development of KCMO's Comprehensive Plan	2020	New	As soon as this mitigation plan is complete, then the City's planning teams will examine what elements can be incorporated.	Local Plans and Regulations	Medium	Undetermined		Planning Dept	Unknown	Unknown
Increase personnel and tenant awareness on health issues related to severe winter weather										
Conduct training and disseminate information on identifying symptoms of prolonged exposure to cold	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	High	Ongoing		Emergency Management		
Conduct training and disseminate information to personnel and tenants on mitigating the effects of severe winter weather	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	High	Ongoing		Emergency Management		
Ensure outdoor crews have adequate personal protection to mitigate the effects of prolonged cold	2015	Ongoing	Equipment and briefing for personnel is provided by many departments and divisions having outdoor work crews.	Education and Awareness Programs	High	Ongoing		Emergency Management		

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Ensure personnel and tenants at the airports are adequately informed regarding potential weather conditions.	2015	Ongoing	A notification system is in place. However, the system will be improved with new technology and best practices.	Education and Awareness Programs	High	Ongoing		Emergency Management		
Increase personnel awareness on health issues related to excessive and extreme cold										
Conduct training and disseminate information on identifying and treating cold related injuries	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	High	Ongoing		Emergency Management		
Conduct training and disseminate information to personnel on mitigating the effects of extreme cold	2015	Ongoing	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	High	Ongoing		Emergency Management		
Ensure outdoor crews have adequate personal protection to mitigate the effects of prolonged or severe cold	2015	Ongoing	PPE is provided and upgraded as needed.	Other	High	Ongoing		Emergency Management		
Increase public awareness on health issues related to severe winter weather and cold temperatures										
Collect and disseminate public education materials that address winter weather safety, preparedness, and mitigation activities.	2015	Ongoing	The Health Department continually provides materials for the public on health related issues.	Education and Awareness Programs	High	Ongoing		Emergency Management		
Identify funding resources for mechanisms to disseminate information to the public regarding winter weather safety, preparedness, and mitigation activities.	2015	Ongoing	The Health Dept. is continually looking for ways to fund its programs.	Education and Awareness Programs	Medium	Ongoing		Emergency Management		
Utilize various methods of mass and social media to inform and educate the public regarding winter weather safety, preparedness, and mitigation activities.	2015	Ongoing	The Health Department continually provides materials for the public on health related issues.	Education and Awareness Programs	Medium	Ongoing		Emergency Management		
Increase public awareness on mitigating the effects and damage from severe weather										
Include winter weather information in preparedness outreach and campaigns	2015	Ongoing	OEM provides information and conducts presentations regarding all types of severe weather.	Education and Awareness Programs	Medium	Ongoing		Emergency Management		
Research and utilize social media to share weather forecasts & winter safety information	2015	Ongoing	Capabilities have been expanded to include mass notification and social media. New means will be researched and utilized as they are developed.	Education and Awareness Programs	Medium	Ongoing		Emergency Management		
Increase resiliency of and reduce the damage due to the release of hazardous materials resulting from facilities damaged by the effects of winter weather										
Ensure personnel have proper training (SDS, Hazcom, HAZWOPER, etc.) to respond and mitigate the damage from hazardous material release due to facility damage by the effects of winter weather	2020	New	This training is provided on a regular basis, but funding sources to provide the training is researched.	Education and Awareness Programs	High	Undetermined		Fire Dept	Unknown	Unknown
Provide training on methods to secure hazardous materials against release due to facility damage by the effects of winter weather	2020	New	Such training is provided on a continuous basis. Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Education and Awareness Programs	High	Undetermined		Fire Dept	Unknown	Unknown

Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Research training and funding for training for methods and best practices to respond and mitigate the damage from hazardous materials released due to facility damage by the effects of winter weather	2020	New	Different departments within KCMO follow white sheets and other information regarding best practices. Funding for expanded mitigation measures would be accepted.	Education and Awareness Programs	High	Undetermined		Fire Dept	Unknown	Unknown
Research training and funding for training for methods and best practices to secure hazardous materials from release due to facility damage by the effects of winter weather	2020	New	Such training is provided on a continuous basis. Further research is needed on best practices and lessons learned. This information could then be incorporated into KCFD training.	Education and Awareness Programs	High	Undetermined		Fire Dept	Unknown	Unknown
Mitigate KCMO facility damage from winter weather and its effects.										
Research mechanisms and funding to increase building resiliency to damage from winter weather elements such as extreme cold, snow, and ice.	2020	New	This action to be accomplished as time and resources allow.	Structure and Infrastructure Projects	Medium	Undetermined		public works	Unknown	Unknown
Mitigate possible public injury resulting from winter ice sports										
Disseminate information to the public on the danger of bodies of water unsuitable for conducting ice sports	2015	Deferred	Activity on the ice has been prohibited due to liability issues.	Education and Awareness Programs	Low	Deferred				
Identify and conduct training for personnel to enhance the capabilities of detecting ice thickness/safety of various lakes and ponds for ice sports	2015	Deferred	Training for personnel is continual and refreshed constantly.	Education and Awareness Programs	Low	Ongoing				
Identify and implement enhanced methods of conducting testing of ice thickness on various lakes and ponds	2015	Deferred	Activity on the ice has been prohibited due to liability issues.	Education and Awareness Programs	Low	Deferred				

Archie R-V School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Disseminate information to Board of Education, district staff, parents, patrons and students regarding the threat of severe weather and preventative measures that can be taken to mitigate the hazards associated with severe weather.										
Educate parents, patrons regarding severe storm safety	2010	Ongoing		Education and Awareness Programs	High	Ongoing	Cost is negligible, benefit is saving of life	Board of Education	Low	District
Educate Board of Education, district staff, parents, patrons and students about the necessity of severe weather planning at school and at home.										
Educate Parents and patrons regarding severe storm safety.	2010	Ongoing		Education and Awareness Programs	High	Ongoing	Cost is negligible, benefit is saving of life	Board of Education	Low	District

Blue Springs School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Improve student safety from natural and man-made hazards.										
Improve Tornado Preparedness with the construction of storm shelters	2015	Ongoing		Structure and Infrastructure Projects	High	2025	Protect students and patrons in case of tornadic weather.	Blue Springs School District	\$6.6m	Local/Federal 75/25%

Excelsior Springs School District 2020 Mitigation Strategy (New Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Improve student safety from natural and man-made hazards.										
Construct safe rooms in elementary and high school buildings	2020	New	HMPG application submitted	Structure and Infrastructure Projects	High	2 years	Costs of constructing storm shelters would be high but the benefits outweigh the cost when increased student and community safety is considered.	Excelsior Springs School District	High	Local/Federal
Establish, maintain and communicate an effective crisis management plan.	2020	Ongoing	Adopted plan November 2019	Local Plans and Regulations	High	Ongoing	High payback, low cost	Excelsior Springs School District	Low	District funds

Fort Osage R-1 School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Continuity of Services										
Develop and institute a disaster recovery plan for continuity of student and business services	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	Expect benefit by saving lives and enable district to maintain operations	District Administration	500000	Operational funds or bond sale
Increase the capacity for communicating the potential of tornadic activity in a timelier manner.	2015	Ongoing		Local Plans and Regulations	High	Ongoing	Save lives	District Administration	0	N/A
The district will insure staff and students conduct tornado drills during the school year.	2020	Ongoing					Knowledge should result in lives saved	District and building level teams	Low	Existing
Protect students and staff during severe weather with safe rooms or storm shelter spaces.										
Analyze space in existing school buildings and determine if retrofit of existing structures are possible or to design new space in existing or future new schools. Construct safe rooms or shelters as appropriate.	2020	New		Structure and Infrastructure Projects	High		Will result in lives saved	District Administration	Low	FEMA grant and school district funding
Severe Thunderstorms										
Continuity of Services										
Continuity of services	2015	Ongoing		Local Plans and Regulations	High	Ongoing	Expect benefit by saving lives and enable district to maintain operations	District and building level teams	500000	Sale of bonds or use of designated operating funds
The district will insure staff and students conduct severe weather drills during the school year.										
Increase capacity for communication	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	Knowledge should result in lives saved	District and building level teams	200000	Sale of bonds or use of designated operating funds
Severe Winter Weather										
Continuity of Services										
Develop and institute a disaster recovery plan for continuity of student and business services	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	Knowledge should result in lives saved	District and building level teams	500000	Operational funds or bond sale
Increase the capacity for communicating the potential of severe winter weather in a timelier manner.	2015	Ongoing		Local Plans and Regulations	High	Ongoing	Knowledge should result in lives saved	District and building level teams	0	N/A
The district will develop strategies for insuring the safety of staff and students during severe winter weather	2020	Ongoing		Local Plans and Regulations	High	Ongoing	Knowledge should result in lives saved	District and building level teams	Low	Existing

Grain Valley School District 2020 Mitigation Strategy (New Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Increase the safety of students, employees and visitors at the high school with additional shelter space.										
Prepare an application for FEMA Mitigation or Pre-Disaster Mitigation grant funds to construct a shelter at the high school.	2020	New	The high school has limited shelter space during severe weather.	Structure and Infrastructure Projects	High	2024	Lives saved	Grain Valley School District	High	FEMA and school district matching resources
Severe Thunderstorms										
Increase shelter capacity at the high school location that would be open to the community during severe weather/tornado.										
Prepare an application for FEMA Mitigation or Pre-Disaster Mitigation grant funds to construct a shelter at the high school.	2020	New	The high school has limited shelter space during severe weather.	Structure and Infrastructure Projects	High	2024	Lives saved	Grain Valley School District	High	FEMA and school district matching resources

Harrisonville School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Severe Thunderstorms										
Educate district staff, parents and students about the necessity of severe weather planning at school and at home.										
Obtain and distribute educational brochures to help staff, students and families become more aware of the dangers of severe thunderstorms and ways they can protect themselves.	2010	Ongoing		Education and Awareness Programs	Medium	Ongoing	Low cost approach to increase awareness of actions people can take to prevent injury, death and property damage from severe thunderstorms.	Emergency Preparedness Training and Communications	Very low cost	District Budget
Initiate ongoing training and awareness of district staff and students.	2010	Ongoing		Education and Awareness Programs	Medium	Ongoing	Low cost approach to increase awareness of actions people can take to prevent injury, death and property damage from severe thunderstorms.	Emergency Preparedness Training and Communications	Very low cost	District Budget
Tornadoes										
Educate district staff, parents and students about the necessity of severe weather planning at school and at home.										
Obtain and distribute educational brochures to help staff, students and families become more aware of the dangers of severe thunderstorms and ways they can protect themselves.	2010	Ongoing		Education and Awareness Programs	Medium	Ongoing	Low cost approach to increase awareness of actions people can take to prevent injury, death and property damage from tornadoes.	Emergency Preparedness Training and Communications	Very low cost	District Budget
Initiate ongoing training and awareness of district staff and students.	2010	Ongoing		Education and Awareness Programs	Medium	Ongoing	Low cost approach to increase awareness of actions people can take to prevent injury, death and property damage from tornadoes.	Emergency Preparedness Training and Communications	Very low cost	District Budget
Continue to train students and staff for various disaster situations.										
Develop protocols for visitors to district buildings.	2015	Ongoing	Tornado procedures updated; lockdown procedures	Local Plans and Regulations	High	Ongoing	This action will provided us with consistent practices for the arrival and departure of district visitors during school hours/business hours.	District and Building Administration	0	N/A
Design and build secure entries to district buildings.	2015	Ongoing	Two buildings have secure entrance vestibules; assess/update video surveillance annually	Structure and Infrastructure Projects	High	Ongoing	This action will provided us with building entrances that allow for safe arrival and departure of visitors, and it will assist with the maintainence of secure facilities.	District and Building Administration	50,000-100,000	Local District Funds

Independence School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Improve student safety from natural and man-made hazards.										
Construct a storm shelter	2015	Ongoing	Due to costs and budgetary constraints, we have not constructed any new storm shelters through our district that are available for use.	Structure and Infrastructure Projects	High	Ongoing	Add to new facilities as we can	ISD 30	High	District/Levy/Bond
Implement use of interoperable radio on City emergency system	2015	Completed	We have replaced all building level radios in the district to enhance communication with our director of public safety. He has direct communication with the City of Independence Emergency Management Staff.	Structure and Infrastructure Projects	High	2 years	Implement district wide	ISD 30	50000	District Capital

Kansas City School District #33 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Safety procedures have been updated for SY15 to increase safety using new recommendations. Increase Safety Drill participation and evaluate for effectiveness.										
Review and implement safety drills and evaluate them for effectiveness	2015	Ongoing		Education and Awareness Programs	High	Annually	Safety drills are placed on a monthly calendar for execution. Reported drills are reviewed regularly with Principals and School Leadership. The only cost is the salaried manpower to evaluate the execution of the drill. The benefit is unmeasurable for the protection of life.	KCPS Safety and Security in conjunction with Risk Management	Low	Funding is maintained as an operational budgeted item
Severe Winter Weather										
Refine procedures to respond to severe winter weather to ensure the continuation of regular activities while providing a safe and comfortable environment.										
Snow removal, surface treatment, vehicle and equipment maintenance, facility maintenance to ensure safe environments	2015	Ongoing		Unspecified	High	Annually	Cost benefit result is in the reduction of liability claims against the District and increase the safety of all	KCPS Operations Department	5,271,000	Operating budget

Lawson School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Improved Safety for students, staff, and community from Tornado hazard.										
Construction of FEMA 361 Compliant Safe Room for the High School/Middle School Campus	2015	Ongoing	Construction is currently in progress. Expected Completion is June 2020. Funded entirely with local funds.	Structure and Infrastructure Projects	High	30-Jun-20	Lives saved	District Board and Administration	\$3.8 Million	Local only
Construction of FEMA 361 Safe Room for the Southwest Elementary School Campus	2015	Ongoing	Currently in Grant Application stage; Grant completed and submitted to SEMA on February 3, 2020. Expected application approval in 3rd quarter of 2020.	Structure and Infrastructure Projects	High	Jan-22	Lives saved	District Board and Administration	\$3.1 Million	Local plus HMGP Grant

Lee's Summit School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Evaluation and Enhancement of Sheltering Areas.										
Enhancement/Redefinement of Sheltering areas. Add shelters in new buildings as appropriate.	2015	Ongoing	The district continues to monitor its existing shelter areas to determine needs for changes in existing sheltering space	Structure and Infrastructure Projects	Low	Unknown	The cost of such a structural modification or add on will most greatly outweigh the estimated use. Such a project would need to be a needed functional space that can be used as a sheltering area.	Safety/Facility Services	High	FEMA grants and school district funds
Evaluate current sheltering needs	2015	Ongoing	The district continues to monitor its existing shelter areas to determine needs for additional space	Local Plans and Regulations	Medium	Within the next 5 years.	Evaluation of current sheltering needs to determine if our areas can adequately shelter our school populations should be done every couple of years. There is no cost associated and it is always beneficial to review asset capabilities.	Facility Services	Low	District

Metropolitan Community College 2020 Mitigation Strategy (Continuing Plan Participant)										
MCC Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Severe Thunderstorms										
Protect human lives, property and mitigate injuries.										
Ensure communication channels are working properly between Police Department and other college departments, such as Facilities and Information Technology, to implement equipment or perform maintenance to reduce damage to property and protect lives.	2015	Ongoing		Structure and Infrastructure Projects	Medium	2-3 years	Working with Facilities to maintain landscaping and install lightning protection on campus and college thoroughfares would incur additional funding but ensures a reduction in repair costs. Implementing/Updating surveillance equipment across the district	MCC	25000	MCC
Ensure MCC emergency response procedures are reviewed and employees trained annually.	2015	Ongoing		Education and Awareness Programs	Medium	1-2 years	MCC has existing procedures but a process needs to be in place to consistently reeducate to ensure the safety of it's constituents. 80% complete	MCC	0	MCC
Upgrade and integrate communications system to provide capability to communicate across jurisdictional lines between MCC and other law enforcement agencies and emergency service providers (i.e. Mutual Aid capabilities)	2015	Ongoing		Structure and Infrastructure Projects	Medium	3-6 years	The exact cost of the upgrade is unknown at this time. The upgrade will support a variety of configurations, allowing a more expeditious and coordinated response effort from multiple agencies spanning a large geographical area. It will decrease response time.	MCC	182,300	State/Federal Grants

North Kansas City School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
To ensure the best possible severe weather sheltering possible.										
Reassess sheltering locations and if appropriate add safe rooms or shelters to existing buildings or as new buildings are planned and built	2015	Ongoing		Structure and Infrastructure Projects	Medium	Ongoing	Reduce potential for loss of life	Safety & Security	Low	District
Floods										
To improve our evacuation response and reduce potential damage due to flooding.										
Improve response to possible flooding from levee failure at NKCHS	2015	Ongoing		Structure and Infrastructure Projects	Low	Ongoing	Reduce potential for loss of life	NKCPD, Safety & Security	Low	District

North Platte R-1 School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Improve student safety from natural and man-made hazards at all District campuses.										
As funding allows, construct safe rooms to improve student safety from natural and man-made hazards at all District campuses.	2015	Ongoing		Structure and Infrastructure Projects	High	Annually review during July Board of Education meeting. If funding sources allow, complete application for SEMA grant.	The construction of a school community safe room on the Dearborn campus and Camden Point campus would allow a safe area in the event of severe weather.	Board of Education / Superintendent	High	75% SEMA; 25% Local match

Oak Grove R-VI School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Construct a district storm shelter, revise severe weather policies, conduct additional drills.										
Construct a district storm shelter, revise severe weather policies, conduct additional drills	2015	Ongoing		Structure and Infrastructure Projects	High	3 years	Revise policies and procedures and conducting additional drills would require no additional cost. \$2 to 3 million dollars was estimated as a storm shelter cost. While the cost is significant, the benefits far outweigh the cost.	Oak Grove R-VI School District Superintendent and Board of Education	High	District capital projects funds and FEMA/SEMA grant funding
Review and revise and effective crisis management plan	2015	Ongoing		Local Plans and Regulations	High	3 years	Employing outside services for assistance is costly. The revisiting of existing crisis management committee and existing plan will result in a program that will adequately serve the needs of the district utilizing existing resources.	School District Administration and SRO	Low	District funds

Park Hill School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Increase safety of students, staff and visitors from severe weather by adding shelter space.										
Seek Mitigation grant to add storm shelters to existing sport stadiums	2020	New		Structure and Infrastructure Projects	Medium	2025	Lives saved	Park Hill Board of Education/District	High	FEMA grant and local match
Ensure a safe, caring environment for students, staff and visitors.										
Purchase a portable, three-phase generator to supply electrical power in case of an emergency.	2010	Ongoing	Maintain three-phase generator	Structure and Infrastructure Projects	High	Ongoing	Would ensure electrical power continuity for a variety of threats/hazards.	Park Hill Board of Education/District	Low	District

Park University 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Perform a campus-wide Tornado Drill in April of each year.										
Coordinate campus-wide tornado drill in the month of April each year after Goal 1 is complete. Optional: Coordinate with City of Parkville to hold drill on same date as city-wide tornado drill.	2015	Ongoing		Education and Awareness Programs	High	Ongoing	Campus-wide emergency response preparation - drill will identify strengths and weaknesses of planned procedures and allow for any weaknesses to be addressed.	EHS Compliance Coordinator	Low	N/A
Post Emergency Evacuation Routes in all buildings and update as needed.										
Coordinate with local NWS personnel to ensure chosen Storm Shelter locations are acceptable.	2015	Ongoing		Local Plans and Regulations	High	Ongoing	Providing the best shelter locations possible in each campus building to ensure the best protection available in the event of a tornado or severe weather emergency.	EHS Compliance Coordinator	Low	Campus Safety Payroll Budget
Print, laminate, and post evacuation maps at strategic locations in all buildings.	2015	Ongoing		Local Plans and Regulations	High	Ongoing	Providing /making available emergency evacuation/shelter information to the campus community.	EHS Compliance Coordinator	Low	Campus Safety Payroll Budget and EHS Budget
Review current emergency evacuation routes and maps for accuracy and feasibility.	2015	Ongoing		Local Plans and Regulations	High	Ongoing	Ensuring that all spaces within a building are accounted for and accurately planning evacuation routes. Losses avoided include submitting inaccurate information to campus community, thus causing confusion during an actual emergency.	EHS Compliance Coordinator	Low	Campus Safety Payroll Budget

Platte County R-3 School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Improved Safety for students, staff and community from hazard of tornado.										
Conduct emergency drills throughout district (severe weather, fire, intruder, earthquakes)	2010	Ongoing		Education and Awareness Programs	High	Ongoing	Avoid injury, loss of life.	Platte County R-3 School District Administration	Low	School District Budget
Consider sheltering options for students, staff and visitors during tornadoes and other natural hazards.										
Investigate the cost of adding storm shelters to our existing facilities.	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	Cost of shelters would be significant however this approach is the best way of keeping people safe during a tornado. Many lives would be saved.	Platte County R-3 School District Administration	High	TBD
Severe Winter Weather										
Improve communications to all stakeholders for severe winter weather situation.										
Develop a comprehensive communication plan when severe winter weather causes the district to close.	2015	Completed	Revised District and School Crisis Plans	Local Plans and Regulations	High	2019-2020 school year	Avoid injury, loss of life.	Platte County R-3 School District Administration	Low	School District Budget

Pleasant Hill R-III School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Disseminate information to patrons based upon survey information										
Meet with school personnel regarding school district safety and emergency preparedness	2010	Ongoing		Education and Awareness Programs	High	Ongoing	Cost is minimal but information will be invaluable for students, staff and patrons.	School Board	Low	District
Initiate ongoing information dissemination and awareness for the district's staff, parents and patrons during faculty and staff in-service	2010	Ongoing		Education and Awareness Programs	High	Ongoing	Cost is minimal but information will be invaluable for students, staff and patrons.	School Board	Low	District
Educate Board of Education, district staff, parents, patrons and students about the necessity of severe weather planning at school and at home.										
Create an electronic survey to be sent home annually to parents and present safety information to parents, staff and Board of Education.	2010	Ongoing		Education and Awareness Programs	High	Ongoing	Cost is minimal but information will be invaluable for students, staff and patrons.	School Board	Low	District
Upgrade storm sheltering capacities and facilities in the district.										
Construct tornado safe rooms in district facilities.	2015	Ongoing		Structure and Infrastructure Projects	High	3 to 5 years	\$4 million cost. Benefit would to better shelter our students, staff and patrons in the event of severe weather.	School Board	High	FEMA Grant/Local Funds

Raymore-Peculiar School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Increase public awareness and understanding the benefits of "safe rooms."										
Develop, distribute informational materials on safe rooms.	2015	Ongoing		Education and Awareness Programs	Medium	Ongoing	Low cost mechanism to increase student safety.	Ray-Pec District Administration	Low	District
Severe Thunderstorms										
Maintain current weather alert systems in all district facilities.										
Test, monitor, and repair all weather alert systems annually.	2015	Ongoing		Structure and Infrastructure Projects	High	Ongoing	Will ensure proper function of alerting systems.	Ray-Pec District Administration	Low	District

Smithville R-II School District 2020 Mitigation Strategy (Continuing Plan Participant)										
Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
To protect the health and safety of students, employees, and community members from natural and man-made hazards										
Improve Tornado Preparedness by Construct a storm shelter/Safe Room. • Implement tornado readiness and response procedures in curriculum. • Conduct additional drills. (Tornado, Intruder, Fire)	2010	Ongoing	Constructed a storm shelter at the high school	Structure and Infrastructure Projects	High	Ongoing	Conducting additional drills would not require additional funding, however we feel that two drills per year is sufficient for students in grades 6 through 12, and a minimum of four drills are required for students in grades kindergarten through fifth.	Board of Education, Superintendent	Low	District Funding

West Platte R-II School District 2020 Mitigation Strategy (Continuing Plan Participant)										
West Platte R-II SD Mitigation Goals and Action Steps	Plan Year	Status of Project	Status Explanation	Type of Mitigation Activity	Priority	Date of Completion	Cost/Benefit Review	Primary Agency Responsible for Implementation/Administration	Estimate of Cost (\$)	Funding Source
Tornadoes										
Improved Safety for students, staff and community from hazard of tornado.										
Consider including the Construction of a "hardened shelter" as part of the upcoming capital improvement project.	2010	Completed	Elementary gymnasium was built to FEMA standards and is said to have the ability to withstand a direct hit from a tornado.	Structure and Infrastructure Projects	Medium	2017-2018	Avoid injury, loss of life.	West Platte District	High	District Capital Projects Budget/FEMA Grant
Severe Thunderstorms										
Improved Safety for students, staff and community from hazard of severe thunderstorms.										
Consider including the Construction of a "hardened shelter" as part of the upcoming capital improvement project.	2010	Completed	Elementary gymnasium was built to FEMA standards and is said to have the ability to withstand a direct hit from a tornado.	Structure and Infrastructure Projects	Medium	2017-2018	Avoid injury, loss of life.	West Platte District	High	District Capital Projects Budget/FEMA Grant