



Richland County Hazard Mitigation Plan



City of Shelby

Name & Position: _____

Step 1: Status Update

Instructions: Please review each of the previous mitigation strategies and indicate a status option (Completed, Deleted, Deferred, Unchanged, and Ongoing). Additionally, please provide details on the mitigation strategy status under remarks.

#	Hazard Type	Mitigation Strategy	Start Date	End Date	Status (Circle one)	Remarks	Comments
1	Flood	Adopt, enforce, and maintain local regulations that require construction practices that result in creation of sustainable disaster-resistant structures in flood and thunder-storm prone areas	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
2	Flood	Prevent construction in flood zones that does not consider the location's vulnerability to damages and does not use appropriate mitigation practices.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
3	Flood	Use financial aid for flood mitigation through grants and other funding opportunities that do not result in extensive local cost.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
4	Flood	Install, maintain, and replace (as needed) water control structures, including storm sewers, waste-water pumping stations, dams, and other water management structures.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
5	Flood	Require the construction of reservoirs and retention/detention ponds to contain runoff in areas of redevelopment, new development, expansion, or where highways are widened or added.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
6	Flood	Create vegetative buffer zones and restore natural habitat in low-lying or flood-vulnerable areas.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
7	Flood	Conduct research and study of storm water and engage in a program to increase management practices to reduce flood and snow-load damages.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
8	Flood	Maintain NFIP participation through regular review of flood maps and zones and sustain local engagement to ensure accuracy of the maps.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
9	Flood	Engage in a program of waterway maintenance that removes debris and obstructions from the waterways but allows vegetation to remain to slow the flow of water through the waterway.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	



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#	Hazard Type	Mitigation Strategy	Start Date	End Date	Status (Circle one)	Remarks	Comments
10	Flood	Advocate and support local requirements for property insurance, including flood insurance when applicable and work with residents to increase their knowledge of NFIP and CRS participation.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
11	Flood	Make people aware of and facilitate the use of simple prevention measures including the use of sandbags and other diversion devices during storms, and encourage private landowners to keep waterways clear of debris and/or sediment.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
12	Flood	Establish and utilize fees for mitigation efforts, including ditch maintenance assessments, watershed fees, and other revenues intended to fund mitigation projects where jurisdictions participate in watershed management programs.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
13	Flood	Encourage participation in watershed management programs and conservation organizations to reduce vulnerability to flood damages and engage the public in mitigation implementation.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
14	Flood	Remove structures from flood-prone areas to minimize future losses through acquisition, relocation, and demolition and replace the structures with natural habitat.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
15	Flood	Construct floodwalls, dikes, dams or other structures to control the flow of water onto properties due to riverine or flash flooding.10	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
16	Flood	Utilize elevation to protect properties from the effects of flash and riverine flooding.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
17	Flood	Utilize channel modification (widen, straighten, reline) to manage the flow of runoff when other means of prevention are not feasible or effective.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
18	Wind-storms and Tornadoes	Establish, maintain, and enforce building codes, zoning rules, and other local regulations intended to reduce vulnerability to disaster damages through guidance from standards in the International Building Code and International Residential Codes.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	



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19	Wind-storms and Tornadoes	Require the use of appropriate building materials and practices so structures are as resistant as possible to the negative effects of high wind and tornado.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
20	Wind-storms and Tornadoes	Advocate for the proper trimming and maintenance of trees and other vegetation as a way to reduce damages caused by high wind, ice or tornado.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
21	Wind-storms and Tornadoes	Support and advocate for the construction of safe rooms for unprotected single and multi-family homes.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
22	Erosion	Protect and support riverbank slopes to reduce erosion by creating rock falls, vegetation buffers, and other devices to slow the flow or impact of water and prevent topsoil from washing away.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
23	Erosion	Engage in actions to protect and preserve ditch banks and riverbanks from wind, water, and other hazards that cause erosion, such as planting vegetation on the banks to stabilize soil.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
24	Erosion	Engage in actions to protect and preserve roadways exposed to precipitation or winds that erode berms, deteriorate structural support, or compromise the integrity of roads, bridges, culverts and other infrastructure.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
25	Erosion	Protect open areas from wind erosion through use of windbreaks, sod strips, and other vegetative buffers to protect topsoil.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
26	Utility Failure	Advocate for the hardening of utilities through damage resistant installation below grade, improvements to supply line and generation plants, and upgrade of substations and transformers.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
27	Utility Failure	Identify and establish redundant suppliers of heating fuels, potable water, and other utilities necessary for sustaining life.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
28	Utility Failure	Establish and enforce regulations that mandate underground utilities for new or significantly improved neighborhoods and properties or improvements to poles and above-ground components.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	



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#	Hazard Type	Mitigation Strategy	Start Date	End Date	Status (Circle one)	Remarks	Comments
29	Extreme Weather	Maintain and improve hardware, software, and capital equipment used to deliver warnings and notifications of severe weather and other hazards.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
30	Extreme Weather	Establish or maintain, and educate the public about local digital warning and notification systems that inform them of incoming severe weather and life-threatening incidents.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
31	Extreme Weather	Identify and establish adequate locations to be used as community centers and comfort stations during extended power outages or extreme weather.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
32	Extreme Weather	Identify and establish agreements with organizations or institutions to house and protect residents during severe storms and other dangerous incidents.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
33	Extreme Weather	Establish water conservation and water emergency procedures to be used during water shortages and other water emergencies for reasons of drought or contaminated water supplies.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
34	Extreme Weather	Participate in research studies and data collection intended to identify and characterize the effects of contemporary non-meteorological threats on the community, such as climate change and water quality issues like algal bloom.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
35	Multiple Hazards	Develop, utilize and maintain a communication plan with the public to include mass media, social media, and direct contact for emergency management information before, during and after incidents.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
36	Multiple Hazards	Develop interoperable and effective communication action plans and methods to coordinate life-saving efforts with community partners and others during severe incidents.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	
37	Multiple Hazards	Develop a multi-part communication system to engage the community in protective action procedures, warnings and notifications, and other critical lifesaving information related to specific disaster incidents when necessary.					



#	Hazard Type	Mitigation Strategy	Start Date	End Date	Status (Circle one)	Remarks	Comments
38	Multiple Hazards	Educate the public about local disaster hazards and vulnerabilities, protective actions, available services, vulnerable populations and available assistance, and other emergency procedures using a variety of means to include mass and social media, printed information, and other appropriate actions.	02/01/2017	01/31/2022	Completed Deleted Deferred Unchanged Ongoing	When: Why: % Complete:	

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Step 2: Ratings

Purpose: As part of the planning process, communities are asked to identify specific projects and activities (mitigation actions) that will help their communities achieve the long-term outcomes related to specific hazards. The status of each mitigation action is reviewed during the Hazard Mitigation Planning Process to determine the progress being made towards the County's hazard-specific goals. The purpose of the Mitigation Actions Scoring Matrix is to determine which mitigation actions are relevant to each of the communities within Crawford County and to develop a corresponding action plan that describes how the mitigation actions will be implemented. Scores collected from this Mitigation Actions Scoring Matrix will be used to decide how the mitigation actions will be prioritized, administered, and incorporated into Crawford County's existing planning mechanisms.

Instructions: To complete this matrix, please review each proposed mitigation action, indicate if it is applicable to your jurisdiction, and then if it is applicable score it from 1-5, with 5 being the highest possible score.

- 1. Applicable to your jurisdiction? – Write Yes or No** – to indicate if you think this mitigation action is applicable to your jurisdiction. If Yes, fill out the remaining columns; if No, do not fill out the remaining columns.
- 2. Cost Effective – Rank 1 – 5** – the cost effectiveness of each proposed mitigation action, with 5 being the most cost effective and 1 being the least cost effective.
- 3. Technically Feasible – Rank 1 – 5** – the feasibility of each proposed mitigation action, with 5 being the most feasible and 1 being the least feasible.
- 4. Environmentally Sound – Rank 1 – 5** – the proposed mitigation action in terms of how environmentally sound it seems, with 5 being the most sound and 1 being the least sound.
- 5. Immediate Need – Rank 1 – 5** – whether each proposed mitigation action is needed immediately, with 5 being the most immediate need and 1 being not an immediate need.
- 6. Total Risk Reduction – Rank 1 – 5** – the proposed mitigation action on the extent to which it will reduce the total risk of the associated hazard, with 5 being the greatest contribution to risk reduction and 1 being the least contribution to risk reduction. In addition, if there are any mitigation actions that are not listed that should be included, please add them and score them on the last page. We encourage you to consider regularly occurring problems for each hazard listed below and suggest mitigation actions for these problems. You may also list regularly occurring problems within your community without suggesting a mitigation action.

#	Hazard & Associated Mitigation Action	Applicable to your jurisdiction? (Y/N)	Cost Effective (1-5)	Technically Feasible (1-5)	Environmentally Sound (1-5)	Immediate Need (1-5)	Total Risk Reduction (1-5)	Comments
1	Adopt, enforce, and maintain local regulations that require construction practices that result in creation of sustainable disaster-resistant structures in flood and thunderstorm prone areas							
2	Maintain NFIP participation through regular review of flood maps and zones and sustain local engagement to ensure accuracy of the maps.							
3	Use financial aid for flood mitigation through grants and other funding opportunities that do not result in extensive local cost.							
4	Require the construction of reservoirs and retention/detention ponds to contain runoff in areas of re-development, new development, or expansion, or where highways are widened or added.							



#	Hazard & Associated Mitigation Action	Applicable to your jurisdiction? (Y/N)	Cost Effective (1-5)	Technically Feasible (1-5)	Environmentally Sound (1-5)	Immediate Need (1-5)	Total Risk Reduction (1-5)	Comments
5	Establish and utilize fees for mitigation efforts, including ditch maintenance assessments, watershed fees, and other revenues intended to fund mitigation projects where jurisdictions participate in watershed management programs.							
6	Encourage participation in watershed management programs and conservation organizations to reduce vulnerability to flood damages and engage the public in mitigation implementation.							
7	Prevent construction in flood zones that does not consider the location's vulnerability to damages and does not use appropriate mitigation practices.							
8	Engage in a program of waterway maintenance that removes debris and obstructions from waterways.							
9	Remove structures from flood-prone areas to minimize future losses through acquisition, relocation, and demolition and replace the structures with natural habitat.							
10	Construct floodwalls, dikes, dams or other structures to control the flow of water onto properties due to riverine or flash flooding. ¹⁰							
11	Install, maintain, and replace (as needed) water control structures, including storm sewers, wastewater pumping stations, dams, and other water management structures.							
12	Conduct research and study storm water and engage in a program to increase management practices to reduce flood and snow-load damages.							
13	Utilize elevation to protect properties from the effects of flash and riverine flooding.							
14	Utilize channel modification (widen, straighten, reline) to manage the flow of runoff when other means of prevention are not feasible or effective.							
15	Create vegetative buffer zones and restore natural habitat in low-lying or flood-vulnerable areas.							



#	Hazard & Associated Mitigation Action	Applicable to your jurisdiction? (Y/N)	Cost Effective (1-5)	Technically Feasible (1-5)	Environmentally Sound (1-5)	Immediate Need (1-5)	Total Risk Reduction (1-5)	Comments
16	Advocate and support local requirements for property insurance, including flood insurance when applicable and work with residents to increase their knowledge of NFIP and CRS participation.							
17	Make people aware of and facilitate the use of simple prevention measures including the use of sandbags and other diversion devices during storms and encourage private landowners to keep waterways clear of debris and/or sediment.							
18	Establish, maintain, and enforce building codes, zoning rules, and other local regulations intended to reduce vulnerability to disaster damages through guidance from standards in the International Building Code and International Residential Codes.							
19	Require the use of appropriate building materials and practices so structures are as resistant as possible to the negative effects of high wind and tornado.							
20	Advocate for the proper trimming and maintenance of trees and other vegetation as a way to reduce damages caused by high wind, ice or tornado.							
21	Support and advocate for the construction of safe rooms for unprotected single and multi-family homes.							
22	Protect and support riverbank slopes to reduce erosion by creating rock falls, vegetation buffers, and other devices to slow the flow or impact of water and prevent topsoil from washing away.							
23	Engage in actions to protect and preserve ditch banks and riverbanks from wind, water, and other hazards that cause erosion, such as planting vegetation on the banks to stabilize soil.							
24	Engage in actions to protect and preserve roadways exposed to precipitation or winds that erode berms, deteriorate structural support, or compromise the integrity of roads, bridges, culverts and other infrastructure.							
25	Protect open areas from wind erosion through use of windbreaks, sod strips, and other vegetative buffers to protect topsoil.							



#	Hazard & Associated Mitigation Action	Applicable to your jurisdiction? (Y/N)	Cost Effective (1-5)	Technically Feasible (1-5)	Environmentally Sound (1-5)	Immediate Need (1-5)	Total Risk Reduction (1-5)	Comments
26	Advocate for the hardening of utilities through damage resistant installation below grade, improvements to supply line and generation plants, and upgrade of substations and transformers.							
27	Identify and establish redundant suppliers of heating fuels, potable water, and other utilities necessary for sustaining life.							
28	Establish and enforce regulations that mandate underground utilities for new or significantly improved neighborhoods and properties or improvements to poles and aboveground components.							
29	Maintain and improve hardware, software, and capital equipment used to deliver warnings and notifications of severe weather and other hazards.							
30	Establish or maintain, and educate the public about local digital warning and notification systems that inform them of incoming severe weather and life-threatening incidents.							
31	Identify and establish adequate locations to be used as community centers and comfort stations during extended power outages or extreme weather.							
32	Identify and establish agreements with organizations or institutions to house and protect residents during severe storms and other dangerous incidents.							
33	Establish water conservation and water emergency procedures to be used during water shortages and other water emergencies for reasons of drought or contaminated water supplies.							
34	Participate in research studies and data collection intended to identify and characterize the effects of contemporary non-meteorological threats on the community, such as climate change and water quality issues like algal bloom.							
35	Develop, utilize and maintain a communication plan with the public to include mass media, social media, and direct contact for emergency management information before, during and after incidents.							



#	Hazard & Associated Mitigation Action	Applicable to your jurisdiction? (Y/N)	Cost Effective (1-5)	Technically Feasible (1-5)	Environmentally Sound (1-5)	Immediate Need (1-5)	Total Risk Reduction (1-5)	Comments
36	Develop interoperable and effective communication action plans and methods to coordinate life-saving efforts with community partners and others during severe incidents.							
37	Develop a multi-part communication system to engage the community in protective action procedures, warnings and notifications, and other critical lifesaving information related to specific disaster incidents when necessary.							
38	Educate the public about local disaster hazards and vulnerabilities, protective actions, available services, vulnerable populations and available assistance, and other emergency procedures using a variety of means to include mass and social media, printed information, and other appropriate actions.							