

TANEY COUNTY
MISSOURI
2017 Multi-Jurisdictional
Natural Hazard Mitigation Plan

Approved November 21, 2017





FEMA

November 21, 2017

Mr. Ernie Rhodes, Director
State Emergency Management Agency
P. O. Box 116
Jefferson City, Missouri 65102

Subject: Review of the Taney County, Missouri Hazard Mitigation Plan

Dear Mr. Rhodes:

The purpose of this letter is to provide the status of the above referenced Local Hazard Mitigation Plan, pursuant to the requirements of 44 CFR Part 201 - Mitigation Planning and the Local Multi-Hazard Mitigation Planning Guidance. The Local Hazard Mitigation Plan Review Tool documents the Region's review and compliance with all required elements of 44 CFR Part 201.6, as well as identifies the jurisdictions participating in the planning process. FEMA's approval will be for a period of five years effective starting with the approval date indicated below.

Prior to the expiration of the plan the community will be required to review and revise their plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval in order to continue to be eligible for mitigation project grant funding.

Plan Name	Date Submitted	Date Approved	Date of Plan Adoption	Date of Plan Expiration	Review Status
Taney County	November 3, 2017	November 21, 2017	August 21, 2017	November 21, 2022	Approved

If you have any questions or concerns, please contact Joe Chandler, Planning Team Lead, at (816) 283-7071.

Sincerely,

Stacy Robarge-Silkiner
Mitigation Division Director, Acting

CONTRIBUTORS

Taney County Hazard Mitigation Planning Committee

Jurisdictional Representatives

Name	Title	Department	Jurisdiction/Agency /Organization
Melissa Duckworth	Assistant Emergency	Emergency Management	Taney County
Chris Berndt	Emergency Manager/ Fire Chief	Emergency Management/Fire	Taney County/ Western Taney County Fire District
Mike Neeley	Assessor	Assessor's Office	Taney County
Scott Starrett	Director	Planning Department	Taney County
Michael Cole	Laboratory Director	Taney County Water Quality	Taney County
Sheila Wyatt	Commissioner	County Commission	Taney County
Mike Scofield	Commissioner	County Commission	Taney County
Robert Niezgoda	Director	Health Department	Taney County
Ted Martin	Fire Chief	Fire Department	City of Branson
Ben Bonner	Battalion Chief-operations	Fire Department	City of Branson
Nathan Bower	Fire Chief & EMA	Fire Department	City of Forsyth
Rick Ziegenfuss	City Administrator	Administration	City of Hollister
Denise Olmstead	Assistant City Administrator	Administration	City of Hollister
Mark Trog	Police Chief	Police Department	City of Merriam Woods
Janna Gerdel	Alderman	Board/ Administration	City of Merriam Woods
Buck Brown	Police	Police Department	City of Rockaway Beach
Kate Lane	Police Administrator	Police Department	City of Rockaway Beach
James Felton	Director of Public Works	Maintenance	Village of Bull Creek
Gail Hinshaw	Trustee	Board/ Administration	Village of Saddlebrooke
Gary Franklin	Trustee	Board/Administration	Village of Saddlebrooke
Don Schortgen	Trustee	Board/ Administration	Village of Saddlebrooke
Paul Dountas	Trustee	Board/Administration	Village of Saddlebrooke
Scott Ewing	Superintendent	Administration	Bradleyville R-I School District
Don Forrest	Assistant Superintendent of Business	Administration	Branson R-IV School District
Grant Boyer	Assistant Superintendent	Administration	Forsyth R-III School District
Debbie Redford	Director of Public Relations	Administration	Hollister R-V School District
Carless Osbourn	Superintendent	Administration	Kirbyville R-VI School District

Tara Roberts	Superintendent	Administration	Taneyville R-II School District
Brad Allbritton	Administrator	Administration	Taney County Regional Sewer District
Eddie Cox	Utilities Operations Manager	Administration	Taney County Regional Sewer District
Doug Bower	Fire Chief	Administration	Central Taney County Fire Protection District
Jeff Romines	Officer	Administration	Central Taney County Fire
Stakeholders			
Will Knuckles	Graduate Student	Taney County SW Region	University of Missouri Extension
Willa Williams	Youth Development	Taney County SW Region	University of Missouri
Stanley Barker	Manager of Safety and Training	Safety and Training	White River Valley Electric
Claude Koenig	Assistant Manager of Safety and Training	Safety and Training	White River Valley Eclectic
Cory Larson	Electrical/Controls Manager	Administration	Empire District Electric
Randy Richardson	Plant Manager	Administration	Empire District Electric
Jason Cole	Foreman	Maintenance	Empire District Electric
Jerome Ransom	Supervisor	Safety and Security Advisor	Ozark Technical Community College

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EXECUTIVE SUMMARY

The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Taney County and participating jurisdictions and school/special districts developed this multi-jurisdictional local hazard mitigation plan update to reduce future losses from hazard events to the County and its communities and school/special districts. The plan is an update of a plan that was approved on January 17, 2013. The plan and the update were prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to result in eligibility for the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Programs.

The Taney County Multi-Hazard Mitigation Plan is a multi-jurisdictional plan that covers the following 18 jurisdictions that participated in the planning process:

- Taney County
- City of Branson
- City of Forsyth
- City of Hollister
- City of Merriam Woods
- City of Rockaway Beach
- Village of Bull Creek
- Bradleyville R-I
- Taneyville R-II
- Forsyth R-III
- Branson R-IV
- Hollister R-V
- Kirbyville R-VI
- Central Taney County Fire Protection District
- Western Taney County Fire District
- Taney County Regional Sewer District
- Ozarks Technical College- Table Rock Campus

Local jurisdictions that did not participate in the 2013 plan, but did in the 2017 plan update are:

- Village of Saddlebrooke

Saddlebrooke is located in both Christian and Taney counties. The Village has not participated in a hazard mitigation plan since 2005, but was eager to participate in the 2017 update. The entire jurisdiction boundaries were included as part of this update.

Local jurisdictions that were invited but did not participate in the Plan include:

- Kirbyville
- Taneyville
- Mark Twain R-VIII
- Protem Fire Protection District
- Cedar creek Fire Protection District
- Point Lookout Fire Department
- Bradleyville Rural Fire Department
- Taney County Water District #3
- Taney County Ambulance District

Taney County and the entities listed above developed a Multi-Jurisdictional Hazard Mitigation Plan that was approved by FEMA on January 17, 2013 (hereafter referred to as the *2013 Hazard Mitigation Plan*). This current planning effort serves to update that previously approved plan.

The plan update process followed a methodology prescribed by FEMA, which began with the formation of a Mitigation Planning Committee (MPC) comprised of representatives from Taney County and participating jurisdictions. The MPC updated the risk assessment that identified and profiled hazards that pose a risk to Taney County and analyzed jurisdictional vulnerability to these hazards. The MPC also examined the capabilities in place to mitigate the hazard damages, with emphasis on changes that have occurred since the previously approved plan was adopted. The MPC determined that the planning area is vulnerable to several hazards that are identified, profiled, and analyzed in this plan. Riverine and flash flooding, winter storms, severe thunderstorms/hail/lightning/high winds, and tornadoes are among the hazards that historically have had a significant impact.

Based upon the risk assessment, the MPC reaffirmed goals for reducing risk from hazards. The goals are listed below:

1. Protect the lives and livelihoods of all citizens.
2. Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
3. Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.

To advance the identified goals, the MPC developed recommended mitigation actions, which are detailed in Chapter 4 of this plan. The MPC developed an implementation plan for each action, which identifies priority level, background information, ideas for implementation, responsible agency, timeline, cost estimate, potential funding sources, and more.

PREREQUISITES

44 CFR requirement 201.6(c)(5): The local hazard mitigation plan shall include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan. For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

This plan has been reviewed by and adopted with resolutions or other documentation of adoption by all participating jurisdictions and schools/special districts. The documentation of each adoption is included in Appendix D, and a model resolution is included on the following page.

The following jurisdictions participated in the development of this plan and have adopted the multi-jurisdictional plan.

- Taney County
- City of Branson
- City of Forsyth
- City of Hollister
- City of Merriam Woods
- City of Rockaway Beach
- Village of Bull Creek
- Village of Saddlebrooke
- Bradleyville R-I
- Taneyville R-II
- Forsyth R-III
- Branson R-IV
- Hollister R-V
- Kirbyville R-VI
- Central Taney County Fire Protection District
- Western Taney County Fire District
- Taney County Regional Sewer District
- Ozarks Technical College- Table Rock Campus

Model Resolution

(LOCAL GOVERNING BODY/SCHOOL DISTRICT), Missouri RESOLUTION NO. _____

A RESOLUTION OF THE (LOCAL GOVERNING BODY /SCHOOL DISTRICT) ADOPTING THE
(PLAN NAME)

WHEREAS the (*local governing body/school district*) recognizes the threat that natural hazards pose to people and property within the (*local governing body/school district*); and

WHEREAS the (*local governing body/school district*) has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the (*plan name*), hereafter referred to as the *Plan*, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the (*local governing body/school district*) from the impacts of future hazards and disasters; and

WHEREAS the (*local governing body*) recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the (*local governing body/school district*) will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the (*local governing body/school district*) demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE (LOCAL GOVERNMENT/SCHOOL DISTRICT), in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the (*local governing body/school district*) adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of _____ in favor and ____ against, and ____ abstaining, this _____ day of _____, _____.

By (Sig): _____

Print name: _____

ATTEST:

By (Sig.): _____

Print name: _____

APPROVED AS TO FORM:

By (Sig.): _____

Print name: _____

1 INTRODUCTION AND PLANNING PROCESS

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1.1 PURPOSE

Hazard Mitigation is the process of preparing for and taking action in order to reduce the long-term risk of natural disasters to financial and human consequences. Mitigation actions may be implemented prior to, during, or after a hazard event. However, it has been demonstrated that hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before a disaster occurs (<http://www.fema.gov/what-mitigation>).

By participating in the planning process and meeting the necessary requirements to do so, communities, school districts, and other special districts become eligible to apply for mitigation grant funding. FEMA has implemented the various hazard mitigation provisions through the Code of Federal Regulations (CFR) at 44 CFR Part 201. The CFR provisions set forth the mitigation plan requirements for local and tribal governments as a condition of receiving FEMA hazard mitigation assistance. Local governments, schools, or other publicly funded districts that do not participate or adopt a hazard mitigation plan will not be eligible to apply for grants as stated under 44 CFR §201.6. Section 322 of the Robert T. Stafford Relief and Emergency Assistance Act (P.L. 93-288), as amended by the Disaster Mitigation Act of 2000 (DMA) (P.L. 106-390), provides for States, Tribes and local governments to undertake a risk-based approach to reducing risks to natural hazards through mitigation planning.

1.2 BACKGROUND AND SCOPE

As required by 44 CFR §201.6(d)(3), a local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts and changes in priorities, and resubmit it for approval every five (5) years in order to continue to be eligible for mitigation project grant funding. The 2017 Taney County Multi-Jurisdictional Natural Hazard Mitigation Plan, from here on referred to as the Plan, is a revision of the previous five-year update adopted on January 17, 2013, which was the first five year update of the original plan completed in 2005.

The Plan is a major rewrite of the 2013 Plan and reflects changes in priorities and development, and the continued commitment of local governments to mitigate the impact of natural hazards in Taney County. Local jurisdictions that participated in the 2013 Plan and are continuing participation in the 2017 Plan include:

- Taney County
- City of Branson
- City of Forsyth
- City of Hollister
- City of Merriam Woods

-
- City of Rockaway Beach
 - Village of Bull Creek
 - Bradleyville R-I
 - Taneyville R-II
 - Forsyth R-III
 - Branson R-IV
 - Hollister R-V
 - Kirbyville R-VI
 - Central Taney County Fire Protection District
 - Western Taney County Fire District
 - Taney County Regional Sewer District
 - Ozarks Technical College- Table Rock Campus

Local jurisdictions that did not participate in the 2013 plan, but did in the 2017 plan update are:

- Village of Saddlebrooke

Saddlebrooke is located in both Christian and Taney counties. The Village has not participated in a hazard mitigation plan since 2005, but was eager to participate in the 2017 update. The entire jurisdiction boundaries were included as part of this update.

Local jurisdictions that were invited but did not participate in the Plan include:

- Kirbyville
- Taneyville
- Mark Twain R-VIII
- Protem Fire Protection District
- Cedar creek Fire Protection District
- Point Lookout Fire Department
- Bradleyville Rural Fire Department
- Taney County Water District #3
- Taney County Ambulance District

All jurisdictions received letter and email communications notifying representatives of upcoming meetings and participation requirements. Additionally, County EMDs called Kirbyville, Taneyville, and Mark Twain R-VIII to encourage participation. Mark Twain R-VIII did state that they have very few students (approx.30) enrolled in the district and did not see a benefit for the time it would take to participate in the update process. Jurisdictions listed above were not represented during the planning process and did not meet the minimum participation requirements.

The local mitigation plan is the representation of the jurisdictions' commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Information in the Plan will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future.

1.3 PLAN ORGANIZATION

The Plan is organized into five chapters. The 2013 Plan included a chapter dedicated to local jurisdiction capabilities. This information has been incorporated into the Planning Area Profile and Capabilities Chapter. The format of the Plan was changed to conform to the local hazard mitigation plan outline template released by the Missouri State Emergency Management Agency (SEMA) in September, 2016. The Plan chapters include:

- Chapter 1: Introduction and Planning Process
- Chapter 2: Planning Area Profile and Capabilities
- Chapter 3: Risk Assessment
- Chapter 4: Mitigation Strategy
- Chapter 5: Plan Implementation and Maintenance
- Appendices

Table 1.1 summarizes the changes made in the Plan by chapter.

Table 1.1. Changes Made in Plan Update

Plan Chapter	Summary of Changes Made
Introduction	<ul style="list-style-type: none">• General Format Changes
Profile & Capabilities	<ul style="list-style-type: none">• Added Geological and Karst features map• Critical features moved to Ch. 3• Added table showing Unemployment, Poverty, education, and language percentages• Historic Sites and endangered species list moved to Ch. 3.• Added table showing FEMA HMA grants approved and still pending in the county.
Risk Assessment	<ul style="list-style-type: none">• General format updates• Expanded introduction section• Added Assets at Risk of exposure to current population and structures• Added Critical Facilities inventory of all included jurisdictions• Added inventory of parks, historical sites, and endangered species.• Added table for agricultural-related jobs and information and Major employers• Added Land Use Development section for development since previous plan and future land use expected.• Expanded Community profiles for each jurisdiction.
Mitigation Strategy	<ul style="list-style-type: none">• Updated mitigation actions development process• Included actions eliminated and reason for removal• Updated progress made towards mitigation goals from earlier plan• Updated cost benefit review method using STAPLEE and simple scores• Discussed funding sources, lead agencies and status of continuing, revised and new actions
Plan Maintenance	<ul style="list-style-type: none">• Updated the responsibilities for plan monitoring, evaluation, and implementation.

1.4 PLANNING PROCESS

44 CFR Requirement 201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

The Southwest Missouri Council of Governments (SMCOG) was contracted to facilitate the plan development process. SMCOG staff met with the Taney County EMDs during an initial scoping meeting to develop contact information for the area stakeholders and local jurisdiction representatives to establish the Mitigation Planning Committee (MPC). Meeting locations and schedules were discussed, and the most effective way to inform and include the public was determined. Also discussed was previous plan maintenance and any updates made since 2013. It was determined that the document had not been officially updated, but previously identified actions had been discussed at LEPC meetings annually.

The planning process included the kick-off meeting and four subsequent MPC meetings. SMCOG staff were responsible for producing the draft and final plan update in a FEMA-approvable document, and coordinating with the SEMA and FEMA plan reviews.

Specific information about agenda items for the MPC meetings are presented in Section 1.4.2. SMCOG also assisted in soliciting public involvement in the planning process, partially by providing process information handouts and public meeting boards to any interested jurisdiction. Notification of the MPC meetings on July 11, 2017, July 24, 2017, August 22, 2017, September 26, 2017, and October 24, 2017 were sent via press release to Branson Tri-Lakes News, and Taney County Times, the newspapers of widest distribution in the County. Meeting dates and items to be discussed for all meetings, including the kick-off meeting on July 11, 2017, were posted on the SMCOG website in advance. Drafts of the Plan were also posted on the website for public comment during the drafting of the Plan and prior to the Plan being submitted for approval. Appendix B provides documentation of the planning process including public involvement solicitations and meeting notices.

The preliminary draft of the plan was posted on the SMCOG website for public review and comment on October 9, 2017. A public notice was published in the Branson Tri-Lakes News, and Taney County Times seeking public input on the draft plan. A final draft of the Plan was posted on the SMCOG website on October 30, 2017 before the Plan was submitted for SEMA/FEMA approval. On both occasions a press release was sent to the Branson Tri-Lakes News, and Taney County Times notifying news outlets that the Plan was available for public comment. Input from city and county officials was solicited through distribution of drafts of plan elements for discussion and review at scheduled meetings and other communications with individual community representatives and elected officials.

Neighboring jurisdictions were notified via email and letters, a notification was sent to adjacent county Emergency Management Directors, Chambers of Commerce, local and regional agencies, such as; OACAC, Health Departments, American Red Cross, Ambulance Districts, and the University of Missouri Extension office. A complete listing of agencies invited to participate in the planning process and what meetings they were invited to attend is included in Appendix B.

Table 1.2 shows the MPC members and the entities they represent, along with their titles. This includes representatives from local jurisdictions, stakeholders, and school districts.

Table 1.2. Jurisdictional Representatives Taney County Mitigation Planning Committee

Name	Title	Department	Jurisdiction/Agency /Organization
Melissa Duckworth	Assistant Emergency	Emergency Management	Taney County
Chris Berndt	Emergency Manager/ Fire Chief	Emergency Management/Fire	Taney County/ Western Taney County Fire District
Mike Neeley	Assessor	Assessor's Office	Taney County
Scott Starrett	Director	Planning Department	Taney County
Michael Cole	Laboratory Director	Taney County Water Quality	Taney County
Sheila Wyatt	Commissioner	County Commission	Taney County
Mike Scofield	Commissioner	County Commission	Taney County
Robert Niezgoda	Director	Health Department	Taney County
Ted Martin	Fire Chief	Fire Department	City of Branson
Ben Bonner	Battalion Chief-operations	Fire Department	City of Branson
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Stanley Barker	Manager of Safety and Training	Safety and Training	White River Valley Electric
Claude Koenig	Assistant Manager of Safety and Training	Safety and Training	White River Valley Eclectic
Cory Larson	Electrical/Controls Manager	Administration	Empire District Electric
Randy Richardson	Plant Manager	Administration	Empire District Electric
Jason Cole	Foreman	Maintenance	Empire District Electric
Jerome Ransom	Supervisor	Safety and Security Advisor	Ozark Technical Community College

1.4.1 Multi-Jurisdictional Participation

44 CFR Requirement §201.6(a)(3): Multi-jurisdictional plans may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.

The Plan serves as a written document of the planning process. Active participation of local jurisdiction representatives and stakeholders in the hazard mitigation planning process is essential if the Plan is to have value. To be eligible for mitigation funding, local governments must adopt the FEMA-approved update of the Plan. The participation of the local government stakeholders in the planning process is considered critical to successful implementation of this plan. Each jurisdiction that is seeking approval for the Plan must have its governing body adopt the updated plan, regardless the degree of modifications. SMCOG collaborated with the local governments in Taney County to assure participation in the planning process and the development of a plan that represents the needs and interests of Taney County and its local jurisdictions. Appendix D contains resolutions for jurisdictions adopting the Plan.

County Commissioners, incorporated communities, public schools, special districts, and various other stakeholders in mitigation planning were invited to a kick-off meeting for the Plan update on July 11, 2017. At this meeting it was explained that the Disaster Mitigation Act (DMA) requires each jurisdiction participating in the planning process officially adopt the plan. The criteria for participation that each jurisdiction must meet in order to be considered a “participant” in the Plan was established at this meeting and include the following:

- Participation in at least two (2) MPC meetings, by either direct participation or authorized representation;
- Each participating jurisdiction must provide to the MPC sufficient information to support plan development by completion and return of Data Collection Questionnaires;
- Provide documentation to show time donated to the planning effort;
- All participants should formally adopt the mitigation plan prior to submittal to SEMA and FEMA for final approval.

In order to be included in the plan as a participating jurisdiction, each jurisdiction was required to send a representative to two (2) meetings, completion of the data collection questionnaire, complete in-kind time documentation (if applicable), and formally adopt the plan as minimum requirements. Jurisdictions that met the minimum requirements and are considered to have satisfactorily participated in the planning process. In addition to public outreach solicited through SMCOG, each participating jurisdiction was strongly encouraged to seek public input at an open public meeting or through various forms of input solicitation.

Table 1.3 shows the representation of each participating jurisdiction at the planning meetings and the provision of responses to the data collection questionnaire. All jurisdictions participating in the Plan either reviewed or commented on the draft Plan, participated in the update/development of mitigation actions, documented the donation of time, and passed an adoption resolution. Meeting sign-in sheets are located in Appendix B.

Table 1.3. Jurisdictional Participation in Planning Process

Jurisdiction	Kick-off Meeting	Meeting #2	Meeting #3	Meeting #4	Meeting #5	Data Collection Questionnaire Response	Documented Donated Time	Adoption Resolution
Taney County	X	X	X	X	X	X	X	X
City of Branson	X	X	X	X	X	X	X	X
City of Forsyth	X	X	X	X	X	X	X	X
City of Hollister			X	X	X	X	X	X
City of Merriam Woods			X		X	X	X	X
City of Rockaway Beach				X	X	X	X	X
Village of Bull Creek		X			X	X	X	X
Village of Saddlebrooke	X	X	X	X		X	X	X
Bradleyville R-I	X	X	X	X	X	X	X	X
Taneyville R-II		X	X	X		X	X	X
Forsyth R-III		X	X	X	X	X	X	X
Branson R-IV	X		X		X	X	X	X
Hollister R-V		X	X		X	X	X	X
Kirbyville R-VI	X	X	X		X	X	X	X
OTC Table Rock				X	X	X	X	X
Central Taney County Fire Protection District	X	X	X	X	X	X	X	X
Western Taney County Fire District	X	X		X	X	X	X	X
Taney County Regional Sewer District	X	X	X	X	X	X	X	X

1.4.2 The Planning Steps

FEMA's Local Mitigation Planning Handbook (March 1, 2013), Local Mitigation Plan Review Guide (October 1, 2011), and Integrating Hazard Mitigation into Local Planning: Case Studies and Tools for Community Officials (March 1, 2013) were used as the sources for developing the Plan update process. The development of the plan followed the 10-step planning process adapted from FEMA's Community Rating System (CRS) and Flood Mitigation Assistance programs. The 10-step process allows the Plan to meet funding eligibility requirements of the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, Community Rating System, and Flood Mitigation Assistance Program. Table 1.4 shows how the CRS process aligns with the Nine Task Process outlined in the 2013 Local Mitigation Planning Handbook.

Following **Table 1.4** is a summary of how SMCOG staff used the Nine Task Process to develop the update to the Plan

Table 1.4. County Mitigation Plan Update Process

Community Rating System (CRS) Planning Steps (Activity 510)	Local Mitigation Planning Handbook Tasks (44 CFR Part 201)
Step 1. Organize	Task 1: Determine the Planning Area and Resources Task 2: Build the Planning Team 44 CFR 201.6(c)(1)
Step 2. Involve the public	Task 3: Create an Outreach Strategy 44 CFR 201.6(b)(1)
Step 3. Coordinate	Task 4: Review Community Capabilities 44 CFR 201.6(b)(2) & (3)
Step 4. Assess the hazard	Task 5: Conduct a Risk Assessment 44 CFR 201.6(c)(2)(i) 44 CFR 201.6(c)(2)(ii) & (iii)
Step 5. Assess the problem	
Step 6. Set goals	Task 6: Develop a Mitigation Strategy 44 CFR 201.6(c)(3)(i); 44 CFR 201.6(c)(3)(ii); and 44 CFR 201.6(c)(3)(iii)
Step 7. Review possible activities	
Step 8. Draft an action plan	
Step 9. Adopt the plan	Task 8: Review and Adopt the Plan Task 7: Keep the Plan Current
Step 10. Implement, evaluate, revise	Task 9: Create a Safe and Resilient Community 44 CFR 201.6(c)(4)

Step 1: Organize the Planning Team (Handbook Tasks 1 & 2)

In May 2017, SMCOG entered into cooperative agreements with SEMA and Taney County to prepare this multi-jurisdictional plan for public entities in Taney County. Discussions on the development of the Taney County Multi-Jurisdictional Natural Hazard Mitigation Plan began on June 12, 2017 with an introductory scoping meeting attended by SMCOG staff, the County Emergency Management Director and Assistant Emergency Management Director. This meeting was conducted to discuss the timeline for developing the hazard mitigation plan, the planning process, identification of stakeholders and community organizations to include in the planning process, and dates for five planning committee meetings, beginning with a kick-off meeting on July 11, 2017 to initiate participation of jurisdictions and public entities in the planning process. The Emergency Management Directors (EMD) and SMCOG staff identified prospective participant representatives and stakeholders and a contact list was prepared for mailing an invitation letter to the kick-off meeting. The list of invitees included local elected officials,

municipal government staff, county government staff, emergency services personnel, public school administrators, members from health and social services organizations, utility providers, Missouri University Extension staff, EMDs from adjacent counties, and volunteer organizations. A complete list of invitees is in Appendix B.

The MPC met on several occasions from July through October 2017 to collaborate on the development of the Plan update. Participants assisted in data collection; reviewed and revised the Plan's goals and mitigation strategies; and provided reviews and comments on the Plan throughout the update process. Communication with MPC members occurred throughout the planning process through phone conversations, letters, and email correspondence in addition to committee meetings. **Table 1.5** shows the meeting schedule and items discussed for MPC meetings.

Table 1.5. Schedule of MPC Meetings

Meeting	Topic	Date
Informational Scoping Meeting	<ul style="list-style-type: none"> • Discussion of the general process of updating the Hazard Mitigation Plan • Prepared planning committee members and reviewed contact list • Planned future dates for the planning committee • Discussed communication with the public, stakeholders, city officials, and other jurisdictions to make aware of hazard mitigation meetings • Discussed previous plan maintenance and established procedure for future plan maintenance 	June 12, 2017
Kick-off Meeting	<ul style="list-style-type: none"> • Introduction to Hazard Mitigation • Overview of the planning process • Overview of participation requirements • Future meeting dates 	July 11, 2017
Planning Meeting #2	<ul style="list-style-type: none"> • Participation Requirements • The Planning Process- Recap • Risk Assessment- natural hazard previous occurrences, severity, vulnerability, etc. • Mitigation Strategies Preview • Future Meeting Dates 	July 25, 2017
Planning Meeting #3	<ul style="list-style-type: none"> • Participation Requirements • The Planning Process- Recap • Mitigation Strategies: Goals and Actions – reviewed previous actions and recommended revisions • Future Meeting Dates 	August 22, 2017
Planning Meeting #4	<ul style="list-style-type: none"> • Update on progress of plan document • Participation Requirements • The Planning Process- Recap • Mitigation Strategies: Goals and Actions prioritization- STAPLEE scoring and Action work sheet completion • Public participation reminders and draft plan comments 	September 26, 2017

Planning Meeting #5	<ul style="list-style-type: none"> • Update on progress of plan document • Local plan participation • Planning process overview • Discussion regarding action tracking and Action Tracker website • Funding and implementation mechanisms • Plan adoption and maintenance 	October 24, 2017
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Step 2: Plan for Public Involvement (Handbook Task 3)

44 CFR Requirement 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval.

Options for soliciting public input on the Plan were discussed at the MPC kick-off meeting held on July 11, 2017. SMCOG staff explained the importance of public involvement during the planning process. It was determined that SMCOG staff would advertise MPC meetings through press releases to the Branson Tri-Lakes News, and Taney County Times. In addition, meeting dates and invitations were posted on the SMCOG website along with drafts of the Plan for public comment during the drafting stage and prior to submission of the Plan to SEMA for approval. Press releases were sent to local news publications, and legal notices published in the Branson Tri-Lakes News, and Taney County Times when the drafts of the Plan were posted to the SMCOG website for public comment during the drafting stage on October 9, 2017. A final draft of the Plan was posted on the SMCOG website on October 30, 2017 prior to being submitted to SEMA for approval. Copies of affidavits of publication for legal notices, Screen captures of the SMCOG website, and copies of press releases are included in Appendix B.

It was also discussed at the kick-off meeting that solicitation of public input would be sought by members of the MPC through announcements at gatherings and other public meetings, such as board of alderman, county commission meetings, board of education meetings and local emergency planning committee meetings. Several jurisdictions sought public input through a variety of mechanisms. Some examples include:

- The City of Forsyth held a public open house on August 21, 2017 immediately preceding a Board of Alderman meeting. SMCOG staff provided handouts and informational materials. No public comment was obtained during the open house, but City staff allowed additional time for members of the public to review the draft plan and/or weigh-in on hazards concerns and potential actions. No public input was collected.
- The City of Branson and Taney County Emergency Management partnered to create an online survey in order to seek public input. Both jurisdictions widely publicized the survey, using social media and jurisdiction websites. Thirteen responses to the survey were received by October 1, 2017. A summary of the responses include:
 - Respondents selected their jurisdiction of residence as: City of Hollister (3), City of Merriam Woods (2), City of Rockaway Beach (2), Unincorporated Taney County – No Community (2), Unincorporated Taney County – Community (1), City of Branson (1), Village of Bull Creek (1), and City of Forsyth (1).
 - Respondents selected their school district as: Branson R-IV (7), Hollister R-V

-
- (2), Kirbyville R-VI (1), Taneyville R-II (1), Forsyth R-III (1), Unknown (1).
 - 38.5% of respondents thought the highest threat was severe thunderstorm/high winds.
 - 30.8% of respondents thought the second highest threat was flash flooding.
 - 5 respondents had experienced damaging hail; 5 had experienced damaging thunderstorms/high wind; 4 respondents had experienced damaging ice storms, severe winter weather, and tornado.
 - Respondents were most concerned about: Severe Thunderstorm (7 very concerned, 4 extremely concerned), Tornado (6 very concerned, 5 extremely concerned), Ice Storm (6 very concerned, 3 extremely concerned), Severe Winter Weather (7 very concerned, 1 extremely concerned), and Hail (5 very concerned, 2 extremely concerned).

Public input and comments has been integrated into the Risk Assessment chapter and have helped reflect action items for selected jurisdictions.

Step 3: Coordinate with Other Departments and Agencies and Incorporate Existing Information (Handbook Task 3)

44 CFR Requirement 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process. (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

As stated in Section 1.4, neighboring communities, businesses, academia, and other non-profit interests were notified via email and letters, a notification was sent to adjacent county Emergency Management Directors, Chambers of Commerce, local and regional agencies, such as; OACAC, Health Departments, American Red Cross, Ambulance Districts, and the University of Missouri Extension office. A complete listing of agencies invited to participate in the planning process and what meetings they were invited to attend is included in Appendix D.

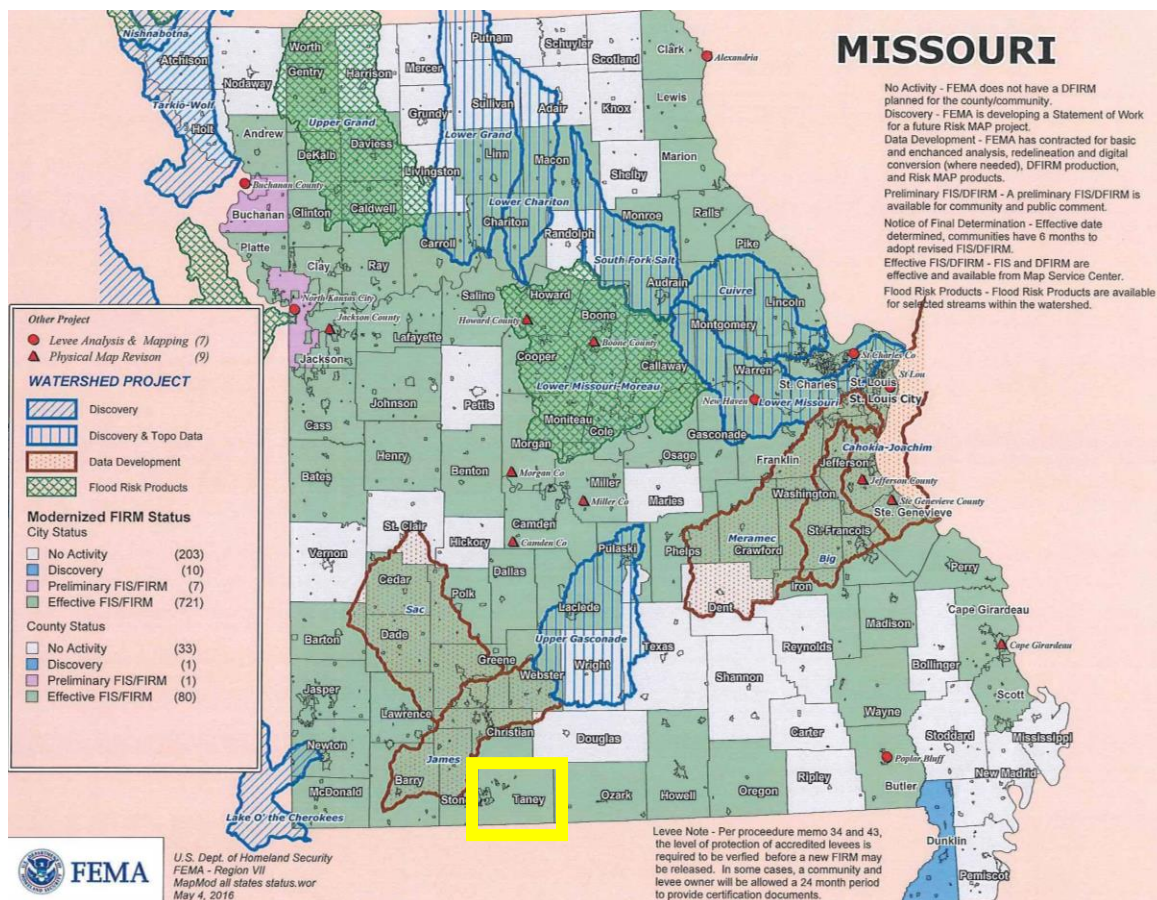
Due to close proximity with Arkansas, SMCOG staff and Taney County Emergency Management discussed potential collaboration or inclusion of Boone County Emergency Management. However, it has proven difficult to make contact with emergency management officials, and due to Arkansas being located in a different FEMA region the hazard mitigation planning efforts may vary from that of Missouri.

Coordination with FEMA Risk MAP Project

There was no coordination with FEMA RiskMAP projects during the update of this plan, as there were not current projects underway.

Figure 1.1 displays locations of RiskMAP deployed watersheds and current projects in Missouri. Taney County is outlined in yellow.

Figure 1.1. Map of RiskMAP projects in Missouri



Integration of Other Data, Reports, Studies, and Plans

A significant amount of information presented in the Plan has been updated and revised based on the review and incorporation of existing plans, studies, reports and technical information. Appendix A contains a listing of references to plans, studies, reports and technical information to incorporate into hazard profiles, risk assessment, profile and capability sections. A few examples of information incorporated from the review of existing plans, etc. include:

- Taney County Emergency Operations Plan
- 2013 Missouri State Hazard Mitigation Plan
- State Department of Natural Resources (DNR) dam information, the National Inventory of Dams (NID), dam inspection reports,
- Missouri Department of Conservation (MDC) wildfire statistics
- Wildland/Urban Interface and Intermix areas from the SILVIS Lab - Department of Forest Ecology and Management - University of Wisconsin

Step 4: Assess the Hazard: Identify and Profile Hazards (Handbook Task 5)

At the second MPC meeting on July 25, 2017 profiles of identified hazards from the 2013 Plan were presented. Storm event data from the National Climatic Data Center for the five year period since the adoption of the 2013 Plan were included in the hazard profiles. The presentation incorporated data from studies, reports, and technical information available through internet research. During the process of identifying hazards the MPC reviewed:

- Previous disaster declarations in the county
- Hazards in the most recent State Hazard Mitigation Plan
- Hazards identified in the previously approved hazard mitigation plan.

The MPC was asked to prioritize the identified hazards based on probability of occurrence, human impact, and property impact. Additional information about the conclusions drawn can be found in the Risk Assessment chapter of the Plan.

Step 5: Assess the Problem: Identify Assets and Estimate Losses

Identified assets in the planning area include population, structures, critical facilities and infrastructure, and other important assets that may be at risk to hazards. The inventory of assets for each jurisdiction was derived from parcel data from the Taney County Assessor, the Taney County Structures GIS dataset from MISDIS, local jurisdiction data collection questionnaires, and the U.S. Census. Potential losses to existing development were estimated based on hazard event scenarios. In most cases the county assessor's appraised improved values were used to estimate structure losses in impacted areas for structure occupancy types. The methodology for estimating losses varies by hazard. Loss estimates are included in each hazard profile of the Risk Assessment chapter.

Step 6: Set Goals (Handbook Task 6)

The MPC conducted a discussion session during their third meeting on August 22, 2017 to review and update the Plan goals. The MPC also reviewed the goals from current surrounding county plans.

In the 2013 Plan, the organization of the actions included broad goals and a set of objectives linking the actions to the goals. The MPC opted to keep the goals from the 2013 Plan and eliminate the objective statements, moving forward with broad goals and specific mitigation actions. Objectives seemed to add a layer of complication and potential confusion. During this update process, the intent was to provide a usable set of actions that each jurisdiction was able to work towards partial or full implementation, and objectives seemed unnecessary.

The Plan update goals and objectives are as follows:

Goal 1 – Protect the lives and livelihoods of all citizens.

Goal 2 – Reduce the potential impact of natural disasters to property, infrastructure and the local economy.

Goal 3 – Ensure and enhance continued operation of government, emergency

functions and critical infrastructure in a disaster.

Step 7: Review Possible Mitigation Actions and Activities

The focus of the MPC meeting on August 22, 2017 was an update of the mitigation actions and discuss potential new actions. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during the meeting:

- A list of actions proposed in the previous mitigation plan and discussing each individually regarding progress made and continued relevance
- Input during meetings
- Responses to Data Collection Questionnaires- where jurisdictions had reported progress made on previous actions

Jurisdiction representatives on the MPC were encouraged to review the details of the risk assessment vulnerability analysis specific to their jurisdiction, and the previously identified mitigation actions prior to the meeting. Representatives were provided a link to the FEMA's publication, *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*. This document was developed by FEMA as a resource for identification of a range of potential mitigation actions for reducing risk to natural hazards and disasters.

During the meeting, few new actions were proposed by the committee, but numerous actions were reworded. Much of the discussion surrounded making actions SMART: specific, measurable, achievable, relevant, and time-bound. SMCOG staff provided some recommended altered language for some items, and general discussion by the MPC provided some significant changes to many actions and to which jurisdictions actions were relevant.

Step 8: Draft an Action Plan

At the fourth MPC meeting on September 26, 2017, representatives were provided with pre-populated STAPLEE scoring sheets each action item identified for their jurisdiction. The method was used to develop a priority score for proposed actions. This meeting also included action worksheets to clarify what department or position would be responsible for implementing the action, potential funding sources, timeline, and local planning mechanisms for implementation. The action plans are listed for each jurisdiction in the Mitigation Strategy chapter. MPC members worked in groups to score each action for their jurisdiction and provide information pertaining to implementing those actions on a local level. During the meeting, SMCOG staff provided an overview of scoring criteria and example action worksheets.

Step 9: Adopt the Plan (Handbook Task 8)

The final meeting on October 24, 2017 provided a wrap-up and opportunity to answer any questions pertaining to plan adoption. The final plan must be approved by the governing body of each jurisdiction by resolution to be eligible for hazard mitigation assistance. Adoption resolutions are included in Appendix D.

Step 10: Implement, Evaluate, and Revise the Plan (Handbook Tasks 7 & 9)

At the final MPC meeting on October 24, 2017, SMCOG staff discussed the FEMA action tracker

site for assistance in implementing mitigation actions. The MPC also discussed potential funding sources for mitigation projects, and the process for reviewing and monitoring the plan. Taney County Emergency Management has already set October 18, 2018 at 9 a.m. as the 2018 annual review of the Plan. The overall strategy has been updated and is presented in the Plan Maintenance chapter.

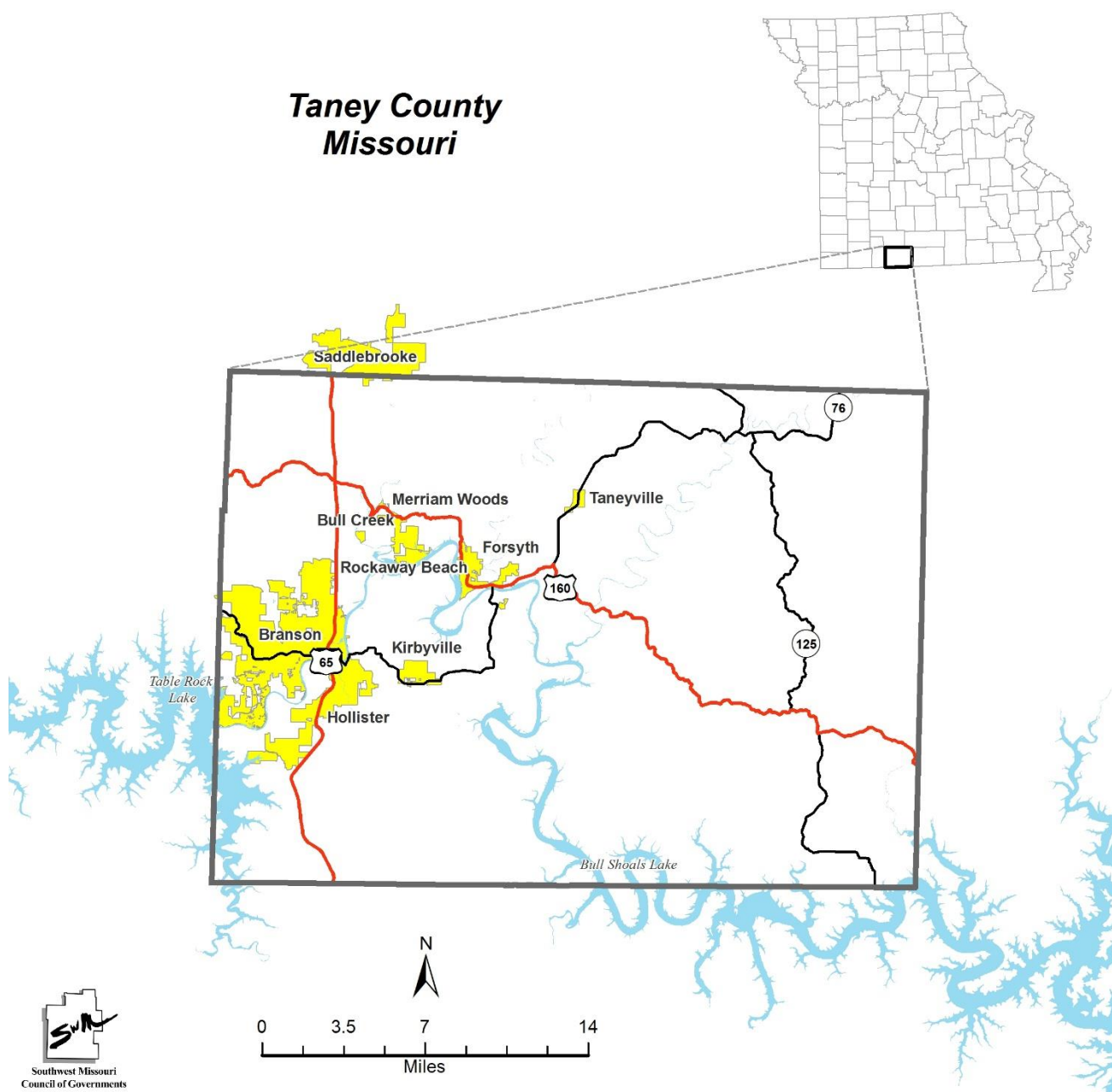
2 PLANNING AREA PROFILE AND CAPABILITIES

2	PLANNING AREA PROFILE AND CAPABILITIES	2.1
2.1	<i>Taney County Planning Area Profile</i>	2.2
2.1.2	Geography, Geology and Topography.....	2.3
2.1.3	Climate	2.5
2.1.4	Population/Demographics	2.5
2.1.5	History	2.8
2.1.6	Occupations	2.8
2.1.7	Agriculture.....	2.9
2.1.8	FEMA Hazard Mitigation Assistance Grants in Planning Area	2.9
2.2	<i>Jurisdictional Profiles and Mitigation Capabilities.....</i>	2.10
2.2.1	Unincorporated TaneyCounty	2.10
2.2.2	City of Branson.....	2.13
2.2.3	City of Forsyth.....	2.15
2.2.4	City of Hollister	2.18
2.2.5	City of Merriam Woods	2.20
2.2.6	City of Rockaway Beach	2.22
2.2.7	Village of Bull Creek	2.24
2.2.8	Village of Saddlebrooke	2.26
2.2.9	Taney County Regional Sewer District	2.33
2.2.10	Western Taney County Fire District	2.33
2.2.11	Central Taney Fire Protection District.....	2.34
2.2.12	Public School District Profiles and Mitigation Capabilities	2.34

2.1 Taney County Planning Area Profile

Taney County is bordered by Ozark, Christian, Douglas, and Stone Counties in southwest Missouri and Carroll, Boone, and Marion Counties in northwest Arkansas. **Figure 2.1** is a map of Taney County that includes the cities, villages, and places. The inset on the map shows Taney County's location in southwest Missouri.

Figure 2.1. Map of Taney County



The U.S. Census estimates that in 2015 Taney County had a population of 53,555. This is a growth of 34.9 percent in comparison to the 2000 census population of 39,703, and 3.6 percent compared to the 2010 census population of 51,675. The growth since 2010 was less than the growth experienced by both the state of Missouri and the United States as a whole over the same time period, which were 8.9 and 14.8 percent respectively.

The median household income (MHI) for Taney County is \$38,357, well below the state and national medians of \$48,173 and \$53,889. The percentage growth in MHI experienced by Taney County, a 1.7 percent decrease since 2010, was lower than both the state and national growths of 27 and 28.3 percent.

In Taney County, the median home value was \$121,700 in 2015. This is slightly lower than the state of Missouri as a whole (\$138,400), and much lower than the entire United States (\$178,600).

2.1.2 Geography, Geology and Topography

Taney County includes 632 square miles of land and 19 square miles of water located in southwest Missouri. A small majority of residents, about 56 percent, live in urban areas. The county has four municipalities with populations over 1,000: Branson, Forsyth, Hollister, and Merriam Woods. Since 2010, only Branson saw a meaningful increase in population. Forsyth and Merriam Woods both lost some population. Branson experienced an increase of 564 people from 2010 to 2015, a 5.4 percent increase.

The Taney County Soil Survey identifies twenty soils units in the county. The soils are highly variable and range in thickness from thin to none on steep slopes to over 60 inches on ridge tops, foot slopes, stream terraces, and floodplains. Taney County is primarily underlain by Mississippian and Ordovician age limestones and dolomites. The county's topographic surface features reflect an advanced stage of the geological erosion cycle. Surface features are primarily a result of the Ozark uplift and subsequent erosion of the limestone bedrock.

Taney County is known for its panoramic vistas. Outliers, which are rock outcrops that have become detached from the main body of bedrock, extend in length from one to twelve miles and create long, panoramic vistas. Rock outcrops are found throughout the county and are particularly noticeable around the lakes areas.

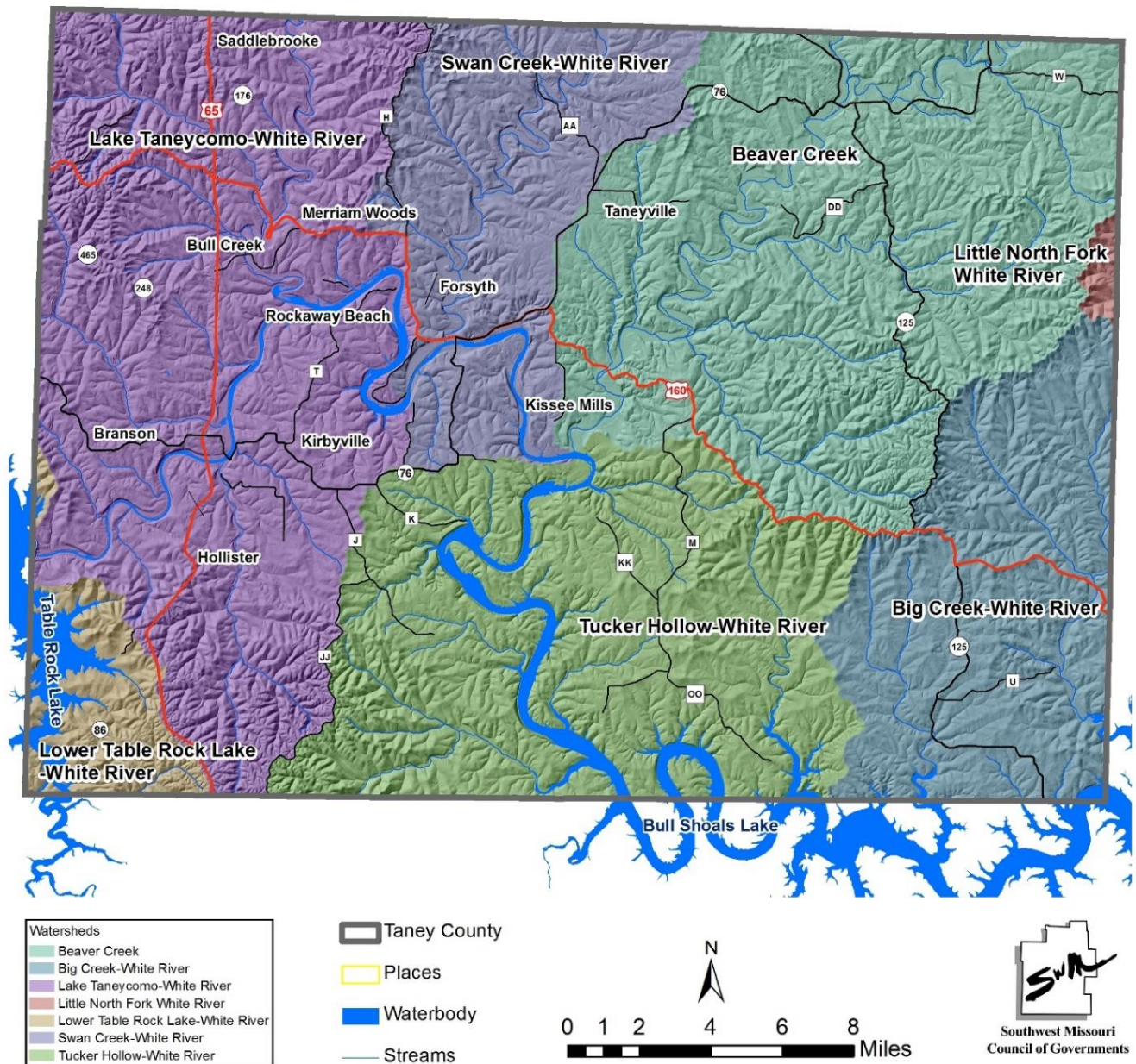
Karst topographic features are common throughout the county. Karst features develop in areas of bedrock with high carbonate content. The bedrock is easily dissolved by a dilute carbonic acid found in the atmosphere, vegetation, and shales. Water infiltrates the bedrock and is channelized through natural cracks, joints, faults, and bedding planes. The dissolution of the bedrock and channelization of water results in caves, sinkholes, losing streams, springs, and other karst features.

Taney County's water system is comprised of a complex and interconnected system of perennial and intermittent streams, impoundments, and subsurface water. The county is located in the White River Basin, which eventually flows to the Mississippi River. Taney County contains approximately 12,945 acres of surface water. One of the county's defining features and important economic resources is the surface reservoir system.

Lake Taneycomo, Bull Shoals Lake, and Table Rock Lake, created from the construction of dams on the White River, account for approximately 10,480 acres of surface water. All three lakes provide for hydroelectric power generation and flood control as well as recreation.

Figure 2.2 is a map of the watershed boundaries in Taney County, Missouri.

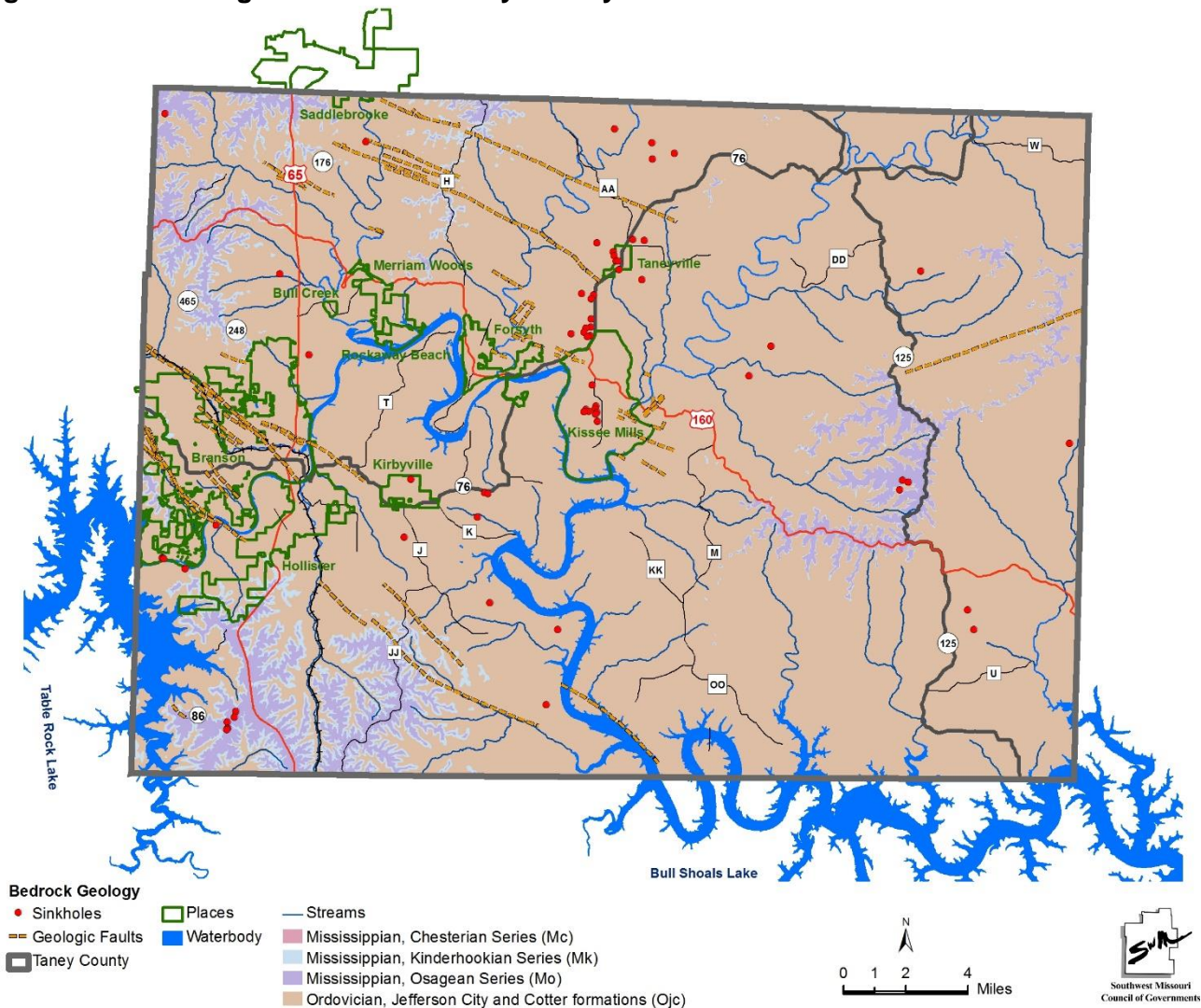
Figure 2.2. Watershed Boundaries in Taney County, Missouri



Source: Missouri GIS Database

Figure 2.3 is a map showing the sinkholes, fault lines, streams, and waterbodies in Taney County.

Figure 2.3. Geologic Features in Taney County



2.1.3 Climate

Taney County has a continental climate with mild winters and hot, humid summers. Based on information from the Midwest Regional Climate Center, the Ozark Beach, MO area has an average annual temperature of 64.8 Fahrenheit. The average high in July is 88.8 Fahrenheit and the average low in January is 45.9 Fahrenheit. It averages 34.64 inches of precipitation, with snow accounting for an average of 1.1 inches annually.

2.1.4 Population/Demographics

Table 2.1 provides the total county population and the populations for each city, village, and the unincorporated county for 2000, 2010, and 2015 with the number and percentage change from 2010 to 2015. In terms of percent change, only four of the nine incorporated communities grew in population. It is estimated that the unincorporated population of the county is 31,801 people. Kirbyville and Saddlebrooke have seen the most growth since 2010, increasing by 17.9% and 40.6%

respectively. In terms of sheer magnitude Branson grew the most, adding 564 people from 2010 to 2015. Overall, the county has grown minimally since 2010, increasing its population by 3.6%.

Table 2.1. Taney County Population 2000, 2010, and 2015 by Community

Jurisdiction	2000 Population	2010 Population	2015 Population	2010-2015 # Change	2010-2015 % Change
Taney County	39,703	51,675	53,555	1,880	3.6
City of Branson	6,050	10,520	11,084	564	5.4
City of Forsyth	1,686	2,255	2,068	-187	-8.3
City of Hollister	3,867	4,426	4,441	15	0.3
City of Merriam Woods	1,142	1,761	1,668	-93	-5.3
City of Rockaway Beach	577	841	832	-9	-1.1
Village of Bull Creek	225	603	522	-81	-13.4
Village of Kirbyville*	n/a	207	244	37	17.9
Village of Saddlebrooke*	n/a	202	284	82	40.6

Source: U.S. Bureau of the Census, Decennial Census, 2011-2015 American Community Survey 5-Year Estimates.

*The Villages of Kirbyville and Saddlebrooke were incorporated after the 2000 Census

Taney County's most at-risk populations are, for the most part, on par with state and national averages. Children under 5 in the county, comprising 6.1 percent of the total population, is very close to state and national averages of 6.2 and 6.3 percent, respectively. The county has a significantly higher elderly population, or those above the age of 65, at 19.1 percent of the population, compared to 14.9 percent for Missouri and 14.1 percent for the nation. In addition, Taney County's median age is around 3 and 4 years older than the state and national medians, respectively.

Taney County contains 29,986 housing units, 8,686 of which were reported vacant, at an average household size of 2.43, which is lower than the national average and about the same as the state average. **Table 2.2** provides the number of Taney County residents within specific age groups and a comparison of percentages with the state of Missouri and the United States.

Table 2.2. Taney County Population Age Composition, Missouri, United States Comparison

Age Group	# of People	Percent	Missouri Percent	United States Percent
Persons under 5 years old	3,286	6.1%	6.2%	6.3%
Persons 5 to 9 years old	2,823	5.3%	6.5%	6.5%
Persons 10 to 14 years old	3,286	6.1%	6.5%	6.5%
Persons 15 to 19 years old	3,586	6.7%	6.7%	6.7%
Persons 20 to 24 years old	3,797	7.1%	7.1%	7.1%
Persons 25 to 34 years old	6,259	11.7%	13.2%	13.5%
Persons 35 to 44 years old	6,010	11.2%	12.1%	12.8%
Persons 45 to 54 years old	7,073	13.2%	13.9%	13.9%
Persons 55 to 59 years old	3,433	6.4%	6.9%	6.6%
Persons 60 to 64 years old	3,753	7.0%	6.0%	5.8%
Persons 65 to 74 years old	6,116	11.4%	8.3%	7.9%
Persons 75 to 84 years old	2,962	5.5%	4.6%	4.3%
Persons 85 and older	1,171	2.2%	2.0%	1.9%
Total	53,555	-	-	-
Median Age	41.5	-	38.2	37.6

Source: U.S. Bureau of the Census, 2011-2015 American Community Survey 5-Year Estimates.

The University of South Carolina developed an index to evaluate and rank the ability to respond to, cope with, recover from, and adapt to disasters. The index synthesizes 29 socioeconomic variables which research literature suggests contribute to reduction in a community's ability to prepare for, respond to, and recover from hazards. SoVI® data sources include primarily those from the United States Census Bureau.

The index is a comparative metric that facilitates the examination of the differences in social vulnerability among counties. SoVI® is a valuable tool for policy makers and practitioners. It graphically illustrates the geographic variation in social vulnerability. It shows where there is uneven capacity for preparedness and response and where resources might be used most effectively to reduce the pre-existing vulnerability. SoVI® also is useful as an indicator in determining the differential recovery from disasters.

Taney County's SoVI® score is 4.659999847, placing it in the 95.2nd percentile when compared to the rest of the nation. This score means that 95.2 percent of the nation is more resilient to hazards and disasters. The main determinants of the score are qualities of the population based on race and class, wealth, elderly residents, Hispanic ethnicity, special needs individuals, Native American ethnicity, and the service industry employment.

Table 2.3 provides additional demographic and economic indicators for Taney County and incorporated communities compared to the state of Missouri and the United States. The county as a whole had slightly higher percentage of unemployed and families living below the poverty level than the state of Missouri or the United States. In terms of education, the percentage of population in the county that were high school graduates was less than Missouri but slightly higher than the United States. Although the percentage of the county population that spoke a language other than English in the home was only slightly lower than Missouri, it was considerably lower than the United States.

Table 2.3. Unemployment, Poverty, Education, and Language Percentage Demographics, Taney County, Missouri

Jurisdiction	Total in Labor Force	Percent of Population Unemployed	Percent of Families Below the Poverty Level	Percentage of Population (High School graduate)	Percentage of Population (Bachelor's degree or higher)	Percentage of population (spoken language other than English)
Taney County	25,742	9	13.2	86.9	18.3	5.8
Branson	5,398	6.8	13.3	90.2	25.1	9.9
Forsyth	828	12.9	7.0	86.9	18.0	4.6
Hollister	2,092	14.5	25.9	84.7	14.6	4.7
Merriam Woods	741	18.5	17.9	77.2	9.5	4.8
Rockaway Beach	403	12.2	22.4	85.7	14.4	3.6
Bull Creek	179	21.2	46.9	78.8	1.2	14.6
Kirbyville	108	11.1	32.9	75.8	13.7	0
Saddlebrooke	143	0.8	2.9	92.7	33.3	13.7
Missouri	3,034,524	7.5	11.1	88.4	27.1	6
United States	158,897,824	8.3	11.3	86.7	29.8	21

Source: U.S. Census, 2011-2015 American Community Survey, 5-year Estimates.

2.1.5 History

Taney County was officially organized on January 4, 1837, and was named in honor of Roger Brooke Taney, the fifth Chief Justice of the U.S. Supreme Court.

In 1845, Forsyth, at the mouth of Swan Creek, was chosen as the county seat. A brick courthouse was built in 1855, but burned during the Civil War. Soon after the war, it was repaired, but in 1865 fire again destroyed the building and most county records were lost. The next courthouse was destroyed by fire on December 19, 1885, with the majority of records lost once again. When the town of Forsyth was relocated to its current location in the 1950's due to the development of Bull Shoals Lake, the present courthouse was built and occupied in 1952. It was a one-story, four-sided structure with an open courtyard in the center. In 1991, a new addition to the courthouse was added that added a second story and enclosed the courtyard. In 2008, the nearby Judicial Center was completed.

Historically a rural, agrarian-based community, many changes have occurred since Taney County's organization as a Missouri county in 1837. The county has seen its primary economy change from one of labor intensive agricultural production of fruits, vegetables and other cash crops, lumbering, and manufacturing of goods from the area's natural resources to one heavily dependent on service and retail sector jobs created by the tourism industry.

The county includes the popular tourist destination city of Branson and is part of the Branson Micropolitan Statistical Area. Taney County is also the home of Table Rock, Taneycomo and Bull Shoals Lakes, formed from the White River.

2.1.6 Occupations

Occupation information for the Taney County labor force comes from the American Community Survey 5-year estimates 2011 - 2015. Management, Business, Science, and Arts Occupations includes education and healthcare practitioner and technician occupations among others. Service Occupation includes healthcare support and protective services, such as firefighters and law enforcement in addition to food preparation and personal care services. The other occupation classifications are well defined. **Table 2.4** contains occupation statistics for the incorporated cities and the county as a whole.

Forsyth and Taneyville have the highest percentages of management, business, science, and arts occupations while Kirbyville has the highest percentage of service occupations. Percentages of sales and office occupations are highest in Forsyth and Hollister while Kirbyville and Merriam Woods have the highest in natural resources, construction, and maintenance occupations. Production, transportation, and material moving occupations account for the fewest occupations in Taney County overall, and the lowest in most of the municipalities. Only 2.8% of occupations in Hollister are in this category.

Table 2.4. Occupation Statistics, Taney County, Missouri

Place	Management, Business, Science, and Arts Occupations	Service Occupations	Sales and Office Occupations	Natural Resources, Construction, and Maintenance Occupations	Production, Transportation, and Material Moving Occupations
Taney County	24.6%	28.1%	30.2%	8.8%	8.3%
Branson	28.4%	33.0%	28.3%	4.5%	5.7%
Forsyth	37.6%	17.1%	32.0%	8.3%	5.0%
Hollister	18.9%	39.7%	33.3%	5.3%	2.8%
Merriam Woods	20.0%	34.6%	20.7%	12.4%	12.3%
Rockaway Beach	24.3%	32.8%	30.5%	5.9%	6.5%
Bull Creek	19.9%	39.7%	24.1%	9.2%	7.1%
Kirbyville	17.7%	46.9%	15.6%	11.5%	8.3%
Saddlebrooke	28.4%	10.6%	34%	19.1%	7.8%
Taneyville	33.3%	19.6%	26.5%	2.9%	17.6%

Source: U.S. Census, 2011-2015 American Community Survey, 5-year Estimates.

2.1.7 Agriculture

According to the United States Department of Agriculture (USDA) 2012 Agricultural Census, there were 414 farms covering 115,895 acres in Taney County. The average farm size was 280 acres, which was just under the average farm size in Missouri at 285 acres, with an average market value of \$28,258,000 of agricultural products sold. Of the total, about 11% was from crop sales while the other 89% came from livestock, poultry, and their products. Cattle and cows inventory were the largest type of farm activity with 14,253 head of cattle and cows. Taney County is ranked 108 in Missouri for total value of agricultural products sold. In addition, 52% of principal operators reported a primary occupation of something other than farming. In a 2016 USDA study, 16.5% of the workforce worked in agriculture-related and agribusiness jobs.

2.1.8 FEMA Hazard Mitigation Assistance Grants in Planning Area

Give total dollar figure for previous FEMA Hazard Mitigation Assistance Grants in the planning area. Insert a table organized by project type. For information see <https://www.fema.gov/openfema-dataset-hazard-mitigation-grants-v1>. Go to heading titled "Full Data" and double click the csv file. This will open in Microsoft Excel and can be filtered to show only Missouri grants and then further refined to show only the grants in specific counties. This is raw, unedited data from NEMIS and is subject to a small percentage of human error. This information should be validated by MPC participants and/or the State Hazard Mitigation Officer.

From 1998-2011, jurisdictions in Taney County have been awarded \$9,074,883, in Hazard Mitigation Assistance grants. Hazard Mitigation Assistance in the county has been used to fund the construction of safe rooms in communities and schools as well as mitigation buyouts. **Table 2.5** lists information on Hazard Mitigation Assistance projects in the county.

Table 2.5. FEMA HMA Grants in County from 1993-2017

Project Type	Sub applicant	Status/Date	Project Total
Weather Transmitter	Agency	Closed	\$35,248
Weather Transmitter	Agency	Closed	\$109,952
Acquisition and Demolition	Village of Bull Creek	Approved	\$217,108
Community Safe Room	Branson R-IV School District	Withdrawn	\$2,007,723
Community Safe Room	Hollister R-V School District	Approved	\$1,736,102
Mitigation Buyout	Taney County	Approved	\$3,782,150
Mitigation Buyout	City of Branson	Approved	\$1,186,600
Total			\$9,074,883

Source: Missouri State Emergency Management Agency. <https://www.fema.gov/openfema-dataset-hazard-mitigation-grants-v1>

2.2 Jurisdictional Profiles and Mitigation Capabilities

This section will include individual profiles for each participating jurisdiction. It will also include a discussion of previous mitigation initiatives in the planning area. There will be a summary table indicating specific capabilities of each jurisdiction that relate to their ability to implement mitigation opportunities. The unincorporated county is profiled first, followed by the incorporated communities, the special districts, and the public school districts.

2.2.1 Unincorporated Taney County

Taney County's jurisdiction includes all unincorporated areas within the county boundaries. Taney County is classified as a Class I county in Missouri. The governing body of Taney County is the county commission. The Commission consists of a presiding commissioner, a western commissioner, and an eastern commissioner.

The County's elected governing body; the Board of County Commissioners directs the general administration of County Government. The Commission sets broad operating policies, enacts ordinances and establishes budgets as mandated by State law. The County enters into contracts with other public agencies to ensure the smooth flow of services including law enforcement, construction and maintenance of public roads and bridges, and the operations of county offices, equipment and services. The departments/staff of the County government include:

- Board of Commissioners
- County Assessor
- County Recorder
- County Treasurer
- Planning and Zoning
- Mapping/GIS Specialist
- Emergency Management
- NFIP Floodplain Administrator
- Local Emergency Planning Committee

Mitigation Initiatives/Capabilities include:

- National Flood Insurance Program
- Zoning/Land Use Restrictions

The county Planning and Zoning Administrator also acts as the NFIP Floodplain Administrator. They accept, evaluate, and monitor land use proposals and enforce NFIP floodplain regulations.

The County Emergency Management Department (EMD) coordinates with local government officials and cooperating private organizations to: 1) prevent avoidable disasters and reduce the vulnerability of the residents to any disaster that may strike; 2) establish capabilities for protecting citizens from the effects of disasters; 3) respond effectively to the actual occurrence of disasters; and 4) provide for recovery in the aftermath of any emergency involving extensive damage within the county. The EMD is responsible for the development and maintenance of the Local Emergency Operations Plan.

Table 2.6 provides information on the County's mitigation capabilities based on the Data Collection Questionnaire.

Table 2.6. Unincorporated Taney County Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: December, 1999
Builder's Plan	N/A
Capital Improvement Plan	N/A
Local Emergency Plan	N/A
County Emergency Operations Plan	Yes: 2017; updated and reviewed annually
Local Recovery Plan	N/A
County Recovery Plan	N/A
Local Mitigation Plan	N/A
County Mitigation Plan	Yes
Local Mitigation Plan (PDM)	N/A
County Mitigation Plan (PDM)	N/A
Economic Development Plan	N/A
Transportation Plan	N/A
Land-use Plan	N/A
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A
Firewise or other fire mitigation plan	N/A
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recovery)	N/A
Policies/Ordinance	
Zoning Ordinance	Yes: 1984
Building Code	No
Floodplain Ordinance	Yes: 2006
Subdivision Ordinance	Yes: 2012
Tree Trimming Ordinance	N/A
Nuisance Ordinance	No
Storm Water Ordinance	Yes (in Guidance Code)
Drainage Ordinance	N/A
Site Plan Review Requirements	N/A
Historic Preservation Ordinance	N/A
Landscape Ordinance	N/A
Iowa Wetlands and Riparian Areas Conservation Plan	N/A
Debris Management Plan	N/A

Program	
Zoning/Land Use Restrictions	Yes: 1984
Codes Building Site/Design	No
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	N/A
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	N/A
Building Code Effectiveness Grading (BCEGs)	No
Capabilities	Status Including Date of Document or Policy
ISO Fire Rating	N/A
Economic Development Program	N/A
Land Use Program	N/A
Public Education/Awareness	N/A
Property Acquisition	N/A
Planning/Zoning Boards	Yes
Stream Maintenance Program	N/A
Tree Trimming Program	N/A
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	N/A
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	Yes
FEMA Flood Insurance Study (Detailed)	Yes
Evacuation Route Map	N/A
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	N/A
Land Use Map	N/A
Staff/Department	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	Yes
Engineer	N/A
Development Planner	No
Public Works Official	N/A
Emergency Management Director	Yes
NFIP Floodplain Administrator	Yes – Planning Administrator
Bomb and/or Arson Squad	N/A
Emergency Response Team	N/A
Hazardous Materials Expert	N/A
Local Emergency Planning Committee	Yes
County Emergency Management Commission	N/A
Sanitation Department	N/A
Transportation Department	N/A
Economic Development Department	N/A
Housing Department	N/A
Planning Consultant	N/A
Regional Planning Agencies	Yes: Southwest Missouri Council of Governments
Historic Preservation	N/A
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	N/A

Environmental Organization	N/A
Homeowner Associations	Yes
Neighborhood Associations	N/A
Chamber of Commerce	N/A
Community Organizations (Lions, Kiwanis, etc.	Yes
Local Funding Availability	
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	No
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	No
Ability to withhold spending in hazard prone areas	N/A

Source: Data Collection Questionnaire, 2017

2.2.2 City of Branson

The City of Branson is located in western Taney County on Highway 65. It is a Class 4 City with a Mayor/Council form of government. The council has six Aldermen representing three wards. In 2000, the population was 6,050 and grew 23.2% to 11,084 by 2015. City departments/staff include:

- Mayor/City Council
- Building Code Official
- Building Inspector
- Mapping/GIS Specialist
- Engineer
- Development Planner
- Public Works Official
- Emergency Management Coordinator
- NFIP Floodplain Administrator
- Emergency Response Team
- Hazardous Materials Expert
- Local Emergency Planning Committee
- Economic Development Department
- Housing Department
- Historic Preservation

Mitigation capabilities include:

- Twenty three (23) outdoor warning sirens
- Fire Safety/Prevention Program
- Police Safety Programs
- Recycling and Storm Water Programs
- Everbridge - BransonALERTS

Table 2.7 provides information on Branson's mitigation capabilities based on the Data Collection Questionnaire.

Table 2.7. City of Branson Mitigation Capabilities

Capability	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: 2012
Builder's Plan	N/A
Capital Improvement Plan	Yes: Annually
Local Emergency Plan	Yes: 2017
County Emergency Plan	Yes: 2017
Local Recovery Plan	Yes
County Recovery Plan	N/A
Local Mitigation Plan	Yes
County Mitigation Plan	Yes
Local Mitigation Plan (PDM)	N/A
County Mitigation Plan (PDM)	N/A
Economic Development Plan	N/A
Transportation Plan	N/A
Land-use Plan	Yes: 2017
Flood Mitigation Assistance (FMA) Plan	Yes: 2017
Watershed Plan	N/A
Firewise or other fire mitigation plan	N/A
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recovery)	N/A
Policies/Ordinance	Status Including Date of Document or Policy
Zoning Ordinance	Yes
Building Code	Yes: ICC 2015
Floodplain Ordinance	Yes
Subdivision Ordinance	Yes
Tree Trimming Ordinance	Yes
Nuisance Ordinance	N/A
Storm Water Ordinance	Yes
Drainage Ordinance	Yes
Capability	Status Including Date of Document or Policy
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	N/A
Landscape Ordinance	Yes
Iowa Wetlands and Riparian Areas Conservation Plan	N/A
Debris Management Plan	Yes
Program	Status Including Date of Document or Policy
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	N/A
Hazard Awareness Program	Yes
National Weather Service (NWS) Storm Ready	Yes
Building Code Effectiveness Grading (BCEGs)	Yes
ISO Fire Rating	Yes: Rating 3
Economic Development Program	Yes
Land Use Program	Yes
Public Education/Awareness	Yes
Property Acquisition	Yes
Planning/Zoning Boards	Yes
Stream Maintenance Program	No
Tree Trimming Program	Yes
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	Yes
Studies/Reports/Maps	Status Including Date of Document or Policy
Hazard Analysis/Risk Assessment (Local)	Yes
Hazard Analysis/Risk Assessment (County)	N/A

Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	N/A
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	N/A
Land Use Map	Yes
Staff/Department	Status Including Date of Document or Policy
Building Code Official	Yes
Building Inspector	Yes
Mapping Specialist (GIS)	Yes
Engineer	Yes
Development Planner	Yes
Public Works Official	Yes
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	Yes
Bomb and/or Arson Squad	No
Emergency Response Team	Yes
Hazardous Materials Expert	Yes
Local Emergency Planning Committee	Yes
County Emergency Management Commission	N/A
Sanitation Department	N/A
Transportation Department	N/A
Economic Development Department	Yes
Housing Department	Yes
Planning Consultant	Yes
Regional Planning Agencies	Yes: Southwest Missouri Council of Governments
Historic Preservation	N/A
Non-Governmental Organizations (NGOs)	Status Including Date of Document or Policy
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	Yes
Environmental Organization	Yes
Homeowner Associations	Yes
Neighborhood Associations	Yes
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	Status Including Date of Document or Policy
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes – water/sewer
Ability to incur dept through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	No
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire

2.2.3 City of Forsyth

The City of Forsyth is located in central Taney County on Highway 160. It is a Class 4 City with a Mayor/Council form of government. The council has four Aldermen representing two wards. In 2000, the population was 1,686 and grew 22.7% to 2,068 by 2015. City departments/staff include:

- Mayor/City Council
- Building Code Official
- Building Inspector
- Public Works Official
- Emergency Management Coordinator

- Emergency Response Team

Mitigation capabilities include:

- Four (4) outdoor warning sirens
- Fire Safety/Prevention Program
- Residential Smoke Alarm Program
- Senior Weather Radio Program

Table 2.8 provides information on Forsyth's mitigation capabilities based on the Data Collection Questionnaire.

Table 2.8. City of Forsyth Mitigation Capabilities

Capability	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: 2010-2011
Builder's Plan	No
Capital Improvement Plan	No
Local Emergency Plan	Yes: 2009
County Emergency Plan	Yes: 2009
Local Recovery Plan	No
County Recovery Plan	N/A
Local Mitigation Plan	Yes
County Mitigation Plan	N/A
Local Mitigation Plan (PDM)	N/A
County Mitigation Plan (PDM)	N/A
Economic Development Plan	Yes: 2010-2011
Transportation Plan	Yes: 2010-2011
Land-use Plan	Yes: 2010-2011
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	Status Including Date of Document or Policy
Zoning Ordinance	No
Building Code	Yes: IBC 2016, IFC 2016
Floodplain Ordinance	No
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes: City Ord 503
Storm Water Ordinance	No
Drainage Ordinance	Yes: City Ord 530
Capability	Status Including Date of Document or Policy
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	No
Landscape Ordinance	Yes: City Ord 530
Iowa Wetlands and Riparian Areas Conservation Plan	N/A
Debris Management Plan	No
Program	Status Including Date of Document or Policy
Zoning/Land Use Restrictions	No
Codes Building Site/Design	Yes
National Flood Insurance Program (NFIP) Participant	No
NFIP Community Rating System (CRS) Participating Community	N/A
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	Yes
Building Code Effectiveness Grading (BCEGs)	Yes

ISO Fire Rating	4: City Ord 496 (1/11/16)
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	Yes: Fire Prevention, Storm Ready
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	Yes: Fire, County, MDC, Law
Studies/Reports/Maps	Status Including Date of Document or Policy
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	Yes
Staff/Department	Status Including Date of Document or Policy
Building Code Official	Yes: Larry Smith
Building Inspector	Yes: Larry Smith
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes: Chris Robertson
Emergency Management Coordinator	Yes: Nathan Bower
NFIP Floodplain Administrator	No
Bomb and/or Arson Squad	No
Emergency Response Team	Yes: Forsyth Fire Department
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	N/A
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Planning Consultant	N/A
Regional Planning Agencies	Yes: Southwest Missouri Council of Governments
Historic Preservation	No
Non-Governmental Organizations (NGOs)	Status Including Date of Document or Policy
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Environmental Organization	No
Homeowner Associations	Yes
Neighborhood Associations	Yes
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	Status Including Date of Document or Policy
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur dept through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	No
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire

2.2.4 City of Hollister

The City of Hollister is located in western Taney County on Highway 65. It is a Class 4 City with a Mayor/Board of Aldermen form of government. The council has four Aldermen representing two wards. In 2000, the population was 3,867 and 14.8% to 4,441 by 2015. City departments/staff include:

- Mayor/City Council
- Building Code Official
- Building Inspector
- Mapping Specialist
- Public Works Official
- Emergency Management Coordinator
- NFIP Floodplain Administrator
- Local Emergency Planning Committee
- Economic Development Department/City Administrator

Mitigation capabilities include:

- Mobile Communications Emergency Alert System - NIXLE
- FEMA Safe Rooms at schools (2)

Table 2.9 provides information on Hollister's mitigation capabilities based on the Data Collection Questionnaire.

Table 2.9. City of Hollister Mitigation Capabilities

Capability	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: Adopted May 2002, amended August 2016
Builder's Plan	N/A
Capital Improvement Plan	N/A
Local Emergency Plan	N/A
County Emergency Plan	N/A
Local Recovery Plan	N/A
County Recovery Plan	N/A
Local Mitigation Plan	N/A
County Mitigation Plan	Yes: August 2012
Local Mitigation Plan (PDM)	N/A
County Mitigation Plan (PDM)	N/A
Economic Development Plan	Yes: August 2016
Transportation Plan	Yes: March 2017
Land-use Plan	Yes: June 2015
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A
Firewise or other fire mitigation plan	N/A
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recovery)	Yes: August 2017
Policies/Ordinance	Status Including Date of Document or Policy
Zoning Ordinance	Yes
Building Code	Yes: 2012 IBC/IRC
Floodplain Ordinance	Yes: January 2012
Subdivision Ordinance	Yes
Tree Trimming Ordinance	Yes
Nuisance Ordinance	Yes
Storm Water Ordinance	Yes
Drainage Ordinance	Yes

Capability	Status Including Date of Document or Policy
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	No
Landscape Ordinance	Yes
Iowa Wetlands and Riparian Areas Conservation Plan	N/A
Debris Management Plan	N/A
Program	Status Including Date of Document or Policy
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	N/A
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	5
Economic Development Program	Yes
Land Use Program	Yes
Public Education/Awareness	No
Property Acquisition	Yes
Planning/Zoning Boards	Yes
Stream Maintenance Program	Yes
Tree Trimming Program	Yes
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	Yes
Studies/Reports/Maps	Status Including Date of Document or Policy
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	N/A
Critical Facilities Inventory	Yes
Vulnerable Population Inventory	No
Land Use Map	Yes
Staff/Department	Status Including Date of Document or Policy
Building Code Official	Yes
Building Inspector	Yes
Mapping Specialist (GIS)	Yes
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	Yes
Bomb and/or Arson Squad	No
Emergency Response Team	N/A
Hazardous Materials Expert	No
Local Emergency Planning Committee	Yes
County Emergency Management Commission	Yes
Sanitation Department	No
Transportation Department	No
Economic Development Department	Yes – City Administrator
Housing Department	No
Planning Consultant	N/A
Regional Planning Agencies	Yes: Southwest Missouri Council of Governments
Historic Preservation	No
Non-Governmental Organizations (NGOs)	Status Including Date of Document or Policy
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Environmental Organization	No
Homeowner Associations	Yes
Neighborhood Associations	No

Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	Status Including Date of Document or Policy
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	No
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur dept through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire

2.2.5 City of Merriam Woods

The City of Merriam Woods is located in central Taney County on Highway 160. It is a Class 4 City with a Mayor/Council form of government. The council has six city council members. In 2000, the population was 1,142 and grew 31.5% to 1,668 by 2015. City departments/staff include:

- Mayor/City Council
- Building Code Official
- Building Inspector
- Public Works Official
- Emergency Management Coordinator
- NFIP Floodplain Administrator

Mitigation capabilities include:

- One (1) outdoor warning siren
- Mutual aid agreements

Table 2.10 provides information on Merriam Wood's mitigation capabilities based on the Data Collection Questionnaire.

Table 2.10. City of Merriam Woods Mitigation Capabilities

Capability	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	No
Builder's Plan	N/A
Capital Improvement Plan	N/A
Local Emergency Plan	N/A
County Emergency Plan	N/A
Local Recovery Plan	N/A
County Recovery Plan	N/A
Local Mitigation Plan	N/A
County Mitigation Plan	Yes
Local Mitigation Plan (PDM)	N/A
County Mitigation Plan (PDM)	N/A
Economic Development Plan	N/A
Transportation Plan	N/A
Land-use Plan	N/A
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A
Firewise or other fire mitigation plan	N/A
School Mitigation Plan	N/A

Critical Facilities Plan (Mitigation/Response/Recovery)	N/A
Policies/Ordinance	Status Including Date of Document or Policy
Zoning Ordinance	Yes
Building Code	N/A
Floodplain Ordinance	N/A
Subdivision Ordinance	N/A
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes
Storm Water Ordinance	No
Drainage Ordinance	Yes
Capability	Status Including Date of Document or Policy
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	No
Landscape Ordinance	No
Iowa Wetlands and Riparian Areas Conservation Plan	N/A
Debris Management Plan	N/A
Program	Status Including Date of Document or Policy
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	N/A
Hazard Awareness Program	N/A
National Weather Service (NWS) Storm Ready	N/A
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	N/A
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	Yes
Planning/Zoning Boards	No
Stream Maintenance Program	N/A
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	Yes
Studies/Reports/Maps	Status Including Date of Document or Policy
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	Yes
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	Status Including Date of Document or Policy
Building Code Official	Yes
Building Inspector	Yes
Mapping Specialist (GIS)	N/A
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	Yes
Bomb and/or Arson Squad	N/A
Emergency Response Team	N/A
Hazardous Materials Expert	N/A
Local Emergency Planning Committee	No
County Emergency Management Commission	N/A
Sanitation Department	N/A
Transportation Department	N/A
Economic Development Department	N/A
Housing Department	N/A

Planning Consultant	N/A
Regional Planning Agencies	Yes: Southwest Missouri Council of Governments
Historic Preservation	N/A
Non-Governmental Organizations (NGOs)	Status Including Date of Document or Policy
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	No
Local Funding Availability	Status Including Date of Document or Policy
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	No
Authority to levy taxes for a specific purpose	N/A
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Ability to withhold spending in hazard prone areas	N/A

Source: Data Collection Questionnaire

2.2.6 City of Rockaway Beach

The City of Rockaway Beach is located in central Taney County on Highways EE and 176. It is a Class 4 City with a Mayor/Council form of government. The council has four Aldermen representing two wards. In 2000, the population was 577 and grew 44.2% to 832 by 2015. City departments/staff include:

- Mayor/City Council
- City Clerk
- Building Inspector
- Public Works Official
- NFIP Floodplain Administrator

Mitigation capabilities include:

- One (1) outdoor warning sirens

Table 2.11 provides information on Rockaway Beach's mitigation capabilities based on the Data Collection Questionnaire.

Table 2.11. City of Rockaway Beach Mitigation Capabilities

Capability	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: 2010
Builder's Plan	Yes
Capital Improvement Plan	Yes: 2010
Local Emergency Plan	Yes
County Emergency Plan	Yes
Local Recovery Plan	N/A
County Recovery Plan	N/A
Local Mitigation Plan	Yes
County Mitigation Plan	Yes

Local Mitigation Plan (PDM)	N/A
County Mitigation Plan (PDM)	N/A
Economic Development Plan	Yes: 2010
Transportation Plan	N/A
Land-use Plan	Yes
Flood Mitigation Assistance (FMA) Plan	Yes
Watershed Plan	Yes
Firewise or other fire mitigation plan	N/A
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recovery)	Yes
Policies/Ordinance	Status Including Date of Document or Policy
Zoning Ordinance	Yes
Building Code	200-401
Floodplain Ordinance	Yes: 2016
Subdivision Ordinance	Yes: 2016
Tree Trimming Ordinance	Yes: 2016
Nuisance Ordinance	Yes: 2016
Storm Water Ordinance	Yes: 2016
Drainage Ordinance	Yes: 2016
Capability	Status Including Date of Document or Policy
Site Plan Review Requirements	Yes: 2016
Historic Preservation Ordinance	N/A
Landscape Ordinance	Yes: 2016
Iowa Wetlands and Riparian Areas Conservation Plan	N/A
Debris Management Plan	N/A
Program	Status Including Date of Document or Policy
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	N/A
Hazard Awareness Program	Yes
National Weather Service (NWS) Storm Ready	N/A
Building Code Effectiveness Grading (BCEGs)	N/A
ISO Fire Rating	N/A
Economic Development Program	Yes: 2010
Land Use Program	Yes
Public Education/Awareness	N/A
Property Acquisition	N/A
Planning/Zoning Boards	Yes
Stream Maintenance Program	N/A
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	Yes: With Taney County
Studies/Reports/Maps	Status Including Date of Document or Policy
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	No
Critical Facilities Inventory	Yes
Vulnerable Population Inventory	N/A
Land Use Map	Yes
Staff/Department	Status Including Date of Document or Policy
Building Code Official	Yes
Building Inspector	Yes
Mapping Specialist (GIS)	N/A
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	Yes

Bomb and/or Arson Squad	N/A
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	Yes
County Emergency Management Commission	N/A
Sanitation Department	Yes
Transportation Department	No
Economic Development Department	Yes- City Clerk & Aldermen
Housing Department	Yes- City Clerk
Planning Consultant	N/A
Regional Planning Agencies	Yes: Southwest Missouri Council of Governments
Historic Preservation	Yes
Non-Governmental Organizations (NGOs)	Status Including Date of Document or Policy
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	Yes
Environmental Organization	Yes
Homeowner Associations	Yes
Neighborhood Associations	Yes
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	Status Including Date of Document or Policy
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Ability to withhold spending in hazard prone areas	Yes

Source: Data Collection Questionnaire

2.2.7 Village of Bull Creek

The Village of Bull Creek is located in central Taney County on Highway F. It is a Village with a Chair/Board of Trustees form of government. The board has 5 trustees. In 2000, the population was 225 and grew 132% to 522 by 2015. The village has few staff.

- Chair/Board of Trustees
- Building Inspector
- Public Works
- Sanitation Department

Mitigation capabilities include:

- NFIP Floodplain Administrator

Table 2.12 provides information on Bull Creek's mitigation capabilities based on the Data Collection Questionnaire.

Table 2.12. Village of Bull Creek Beach Mitigation Capabilities

Capability	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	No
Builder's Plan	No
Capital Improvement Plan	No
Local Emergency Plan	No

County Emergency Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
Local Mitigation Plan	No
County Mitigation Plan	Yes
Local Mitigation Plan (PDM)	No
County Mitigation Plan (PDM)	No
Economic Development Plan	No
Transportation Plan	No
Land-use Plan	No
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	Status Including Date of Document or Policy
Zoning Ordinance	No
Building Code	No
Floodplain Ordinance	No
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Storm Water Ordinance	No
Drainage Ordinance	No
Capability	Status Including Date of Document or Policy
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	No
Iowa Wetlands and Riparian Areas Conservation Plan	No
Debris Management Plan	No
Program	Status Including Date of Document or Policy
Zoning/Land Use Restrictions	No
Codes Building Site/Design	No
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	No
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	No
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	No
Studies/Reports/Maps	Status Including Date of Document or Policy
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	No
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	Status Including Date of Document or Policy
Building Code Official	No
Building Inspector	Yes
Mapping Specialist (GIS)	No

Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	Yes
Bomb and/or Arson Squad	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	No
Sanitation Department	Yes
Transportation Department	No
Economic Development Department	No
Housing Department	No
Planning Consultant	No
Regional Planning Agencies	Yes: Southwest Missouri Council of Governments
Historic Preservation	No
Non-Governmental Organizations (NGOs)	Status Including Date of Document or Policy
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	No
Local Funding Availability	Status Including Date of Document or Policy
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	No
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire

2.2.8 Village of Saddlebrooke

The Village of Saddlebrooke is located in Christian and Taney Counties on Highway 65. It is a village with a Chair/Board of Trustees form of government. The board has five trustees elected by village residents. In 2000, the population was 202 and grew 40.6% to 284 by 2015. As a village, Saddlebrooke has few departments:

- Chair/Board of Trustees
- Board of Adjustment
- Planning & Zoning Commission
- Floodplain Administrator – board member

Mitigation capabilities include:

- Building codes
- NFIP participation

Table 2.13 provides information on Saddlebrooke's mitigation capabilities based on the Data Collection Questionnaire.

Table 2.13. Village of Saddlebrooke Mitigation Capabilities

Capability	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes
Builder's Plan	No
Capital Improvement Plan	No
Local Emergency Plan	No
County Emergency Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
Local Mitigation Plan	No
County Mitigation Plan	Yes
Local Mitigation Plan (PDM)	No
County Mitigation Plan (PDM)	No
Economic Development Plan	No
Transportation Plan	No
Land-use Plan	Yes: Ordinance 2012-14
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	Status Including Date of Document or Policy
Zoning Ordinance	Yes: Ordinance 2012-14
Building Code	Yes: Christian County standards, Ord 2011-03
Floodplain Ordinance	Yes: June 27, 2012, Ord 2012-15
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes: Ords 2012-13, 2017-21
Storm Water Ordinance	No
Drainage Ordinance	No
Capability	Status Including Date of Document or Policy
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	Yes
Landscape Ordinance	Yes
Iowa Wetlands and Riparian Areas Conservation Plan	No
Debris Management Plan	No
Program	Status Including Date of Document or Policy
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	N/A
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	N/A
Economic Development Program	No
Land Use Program	Yes
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	Yes
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	No
Studies/Reports/Maps	Status Including Date of Document or Policy
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	Yes

Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	Yes: Ord 2012-14
Staff/Department	Status Including Date of Document or Policy
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	Yes- board member
Bomb and/or Arson Squad	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	No
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Planning Consultant	No
Regional Planning Agencies	Yes: Southwest Missouri Council of Governments
Historic Preservation	No
Non-Governmental Organizations (NGOs)	Status Including Date of Document or Policy
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	Yes
Environmental Organization	Yes
Homeowner Associations	Yes
Neighborhood Associations	Yes
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	Status Including Date of Document or Policy
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	Yes
Ability to incur dept through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	N/A
Ability to withhold spending in hazard prone areas	Yes

Source: Data Collection Questionnaire

Table 2.14. Mitigation Capabilities Summary Table

CAPABILITIES	Uninc. Taney County	City of Branson	City of Forsyth	City of Hollister	City of Merriam Woods	City of Rockaway Beach	Village of Bull Creek	Village of Saddlebrooke
Planning Capabilities								
Comprehensive Plan	N/A	Yes	Yes	Yes	Yes: 2010	Yes: 2010	No	No
Builder's Plan	N/A	N/A	No	N/A	Yes	Yes	No	No
Capital Improvement Plan	N/A	N/A	No	N/A	Yes: 2010	Yes: 2010	No	No
Local Emergency Plan	N/A	Yes	Yes	N/A	Yes	Yes	No	No
County Emergency Plan	N/A	Yes	Yes	N/A	Yes	Yes	Yes	No
Local Recovery Plan	Yes	Yes	No	N/A	N/A	N/A	No	No
County Recovery Plan	N/A	N/A	N/A	N/A	N/A	N/A	No	No
Local Mitigation Plan	N/A	Yes	No	N/A	Yes	Yes	No	No
County Mitigation Plan	N/A	N/A	N/A	Yes	Yes	Yes	Yes	No
Local Mitigation Plan (PDM)	N/A	N/A	N/A	N/A	N/A	N/A	No	No
County Mitigation Plan (PDM)	N/A	N/A	N/A	N/A	N/A	N/A	No	No
Economic Development Plan	N/A	N/A	Yes	Yes	Yes: 2010	Yes: 2010	No	No
Transportation Plan	N/A	N/A	Yes	Yes	N/A	N/A	No	No
Land-use Plan	N/A	Yes	Yes	Yes	Yes	Yes	No	Yes
Flood Mitigation Assistance (FMA) Plan	N/A	Yes	No	N/A	Yes	Yes	No	No
Watershed Plan	N/A	N/A	No	N/A	Yes	Yes	No	No
Firewise or other fire mitigation plan	N/A	N/A	No	N/A	N/A	N/A	No	No
School Mitigation Plan	N/A	N/A	N/A	N/A	N/A	N/A	No	No
Critical Facilities Plan (Mitigation/Response/Recovery)	N/A	N/A	No	Yes	Yes	Yes	No	No
Policies/Ordinance								
Zoning Ordinance	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Building Code	No	Yes	Yes	Yes	N/A	200-401	No	Yes
Floodplain Ordinance	Yes	Yes	No	Yes	N/A	Yes: 2016	No	Yes
Subdivision Ordinance	Yes	Yes	No	Yes	N/A	Yes: 2016	No	No
Tree Trimming Ordinance	N/A	Yes	No	Yes	No	Yes: 2016	No	No
Nuisance Ordinance	No	N/A	Yes	Yes	Yes	Yes: 2016	No	Yes
Storm Water Ordinance	Yes	Yes	No	Yes	No	Yes: 2016	No	No
Drainage Ordinance	N/A	Yes	Yes	Yes	Yes	Yes: 2016	No	No
Site Plan Review Requirements	N/A	Yes	Yes	Yes	Yes	Yes: 2016	No	Yes
Historic Preservation Ordinance	N/A	N/A	No	No	No	N/A	No	Yes
Landscape Ordinance	N/A	Yes	Yes	Yes	No	Yes: 2016	No	Yes

CAPABILITIES	Uninc. Taney County	City of Branson	City of Forsyth	City of Hollister	City of Merriam Woods	City of Rockaway Beach	Village of Bull Creek	Village of Saddlebrooke
Iowa Wetlands and Riparian Areas Conservation Plan	N/A	N/A	N/A	N/A	N/A	N/A	No	No
Debris Management Plan	N/A	Yes	No	N/A	N/A	N/A	No	No
Program								
Zoning/Land Use Restrictions	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Codes Building Site/Design	No	Yes	Yes	Yes	Yes	Yes	No	Yes
National Flood Insurance Program (NFIP) Participant	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
NFIP Community Rating System (CRS) Participating Community	N/A	N/A	N/A	N/A	N/A	N/A	No	N/A
Hazard Awareness Program	No	Yes	No	No	N/A	Yes	No	No
National Weather Service (NWS) Storm Ready	N/A	Yes	Yes	No	N/A	N/A	No	No
Building Code Effectiveness Grading (BCEGs)	No	Yes	Yes	No	No	N/A	No	No
ISO Fire Rating	N/A	Yes	Class 4	5	N/A	N/A	No	N/A
Economic Development Program	N/A	Yes	No	Yes	No	Yes: 2010	No	No
Land Use Program	N/A	Yes	No	Yes	No	Yes	No	Yes
Public Education/Awareness	N/A	Yes	Yes	No	No	N/A	No	No
Property Acquisition	N/A	Yes	No	Yes	Yes	N/A	No	No
Planning/Zoning Boards	Yes	Yes	No	Yes	No	Yes	No	Yes
Stream Maintenance Program	N/A	No	No	Yes	N/A	N/A	No	No
Tree Trimming Program	N/A	Yes	No	Yes	No	No	No	No
Engineering Studies for Streams (Local/County/Regional)	N/A	No	No	N/A	N/A	No	No	No
Mutual Aid Agreements	N/A	Yes	Yes	Yes	Yes	Yes: With Taney County	No	No
Studies/Reports/Maps								
Hazard Analysis/Risk Assessment (Local)	N/A	Yes	No	No	N/A	N/A	No	No
Hazard Analysis/Risk Assessment (County)	N/A	N/A	N/A	N/A	Yes	N/A	No	Yes
Flood Insurance Maps	N/A	N/A	N/A	N/A	N/A	N/A	No	No
FEMA Flood Insurance Study (Detailed)	N/A	N/A	N/A	N/A	N/A	N/A	No	No
Evacuation Route Map	N/A	N/A	No	N/A	No	No	No	No
Critical Facilities Inventory	N/A	N/A	No	Yes	No	Yes	No	No
Vulnerable Population Inventory	N/A	N/A	No	No	No	N/A	No	No
Land Use Map	N/A	Yes	Yes	Yes	No	Yes	No	Yes
Staff/Department								

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CAPABILITIES	Uninc. Taney County	City of Branson	City of Forsyth	City of Hollister	City of Merriam Woods	City of Rockaway Beach	Village of Bull Creek	Village of Saddlebrooke
Ability to fund projects through Capital Improvements funding	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Authority to levy taxes for a specific purpose	Yes	Yes	Yes	No	N/A	Yes	Yes	Yes
Fees for water, sewer, gas, or electric services	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Impact fees for new development	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Ability to incur debt through general obligation bonds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ability to incur debt through special tax bonds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ability to incur debt through private activities	No	No	No	Yes	Yes	Yes	No	N/A
Ability to withhold spending in hazard prone areas	N/A	No	No	No	N/A	Yes	No	Yes

Source: Data Collection Questionnaires

2.2.9 Taney County Regional Sewer District

The Taney County Regional Sewer District was formed to establish rules and regulations governing the installation, management, and operation of sanitary sewer systems serving residential and commercial structures within the boundaries of the District. The boundaries of the District are Taney County. The District has a Board of Trustees, established by the County Commission. The District is funded through the Taney County Sewer Sales Tax, sewer fees, and connection and impact fees. The District has a few departments:

- Administration
- Billing
- Field Technician
- Mapping Specialist (GIS)
- Engineer

Past or ongoing projects or programs designed to reduce disaster losses include:

- Capital Improvement Plan
- Sewer Use Regulations
- Letters sent to customers with sewer information
- Property acquisition and easements
- Critical Facilities Inventory
- Improvements to duplex lift stations to mitigation flooding impact
- Mobile communication notification capacity
- Turkey Creek Sanitary Sewer Improvement Project

2.2.10 Western Taney County Fire District

The Western Taney County Fire District was initially formed in 1978 as the Branson-Rockaway Fire District. Over the years, and as need increased, the district has grown and most recently merged with the Hollister Fire Department in 2003. The Western Taney Fire District now covers 212 square miles in the western portion of Taney County, completely surrounding Branson, and responding from twelve fire/rescue stations strategically spaced throughout the district. It covers a resident population of more than 25,000 with over seven million tourists in the area every. The District protects a diverse area of hills and lakes. Unique protection and response challenges are posed in this area along with regular fire responses, including protecting densely populated areas with condos, water emergencies on one of the three lakes, wildland interface issues and very rural coverage areas.

The District has a three member elected Board of Trustees with a mission to proudly protect the lives and property by providing prompt, skillful, cost-effective fire protection and life safety services to the citizens and visitors within the boundaries of the district. The District has a few departments:

- Administration
- Building Codes and Inspector
- Fire and emergency response personnel

Past or ongoing projects or programs designed to reduce disaster losses include:

- Fire portion of 2012 IBC

-
- Firewise Community Certification as of June, 2015
 - Mutual aid agreements with all area fire departments
 - Annual Fire Safety programs

2.2.11 Central Taney Fire Protection District

The Central Taney County Fire Protection District started as a subscription-only service, but eventually grew into a tax-based fire department with 5 stations in the County. The District has a Board of Trustees with three members. The District has few departments:

- Administration
- Building Code Official
- Fire and emergency response personnel

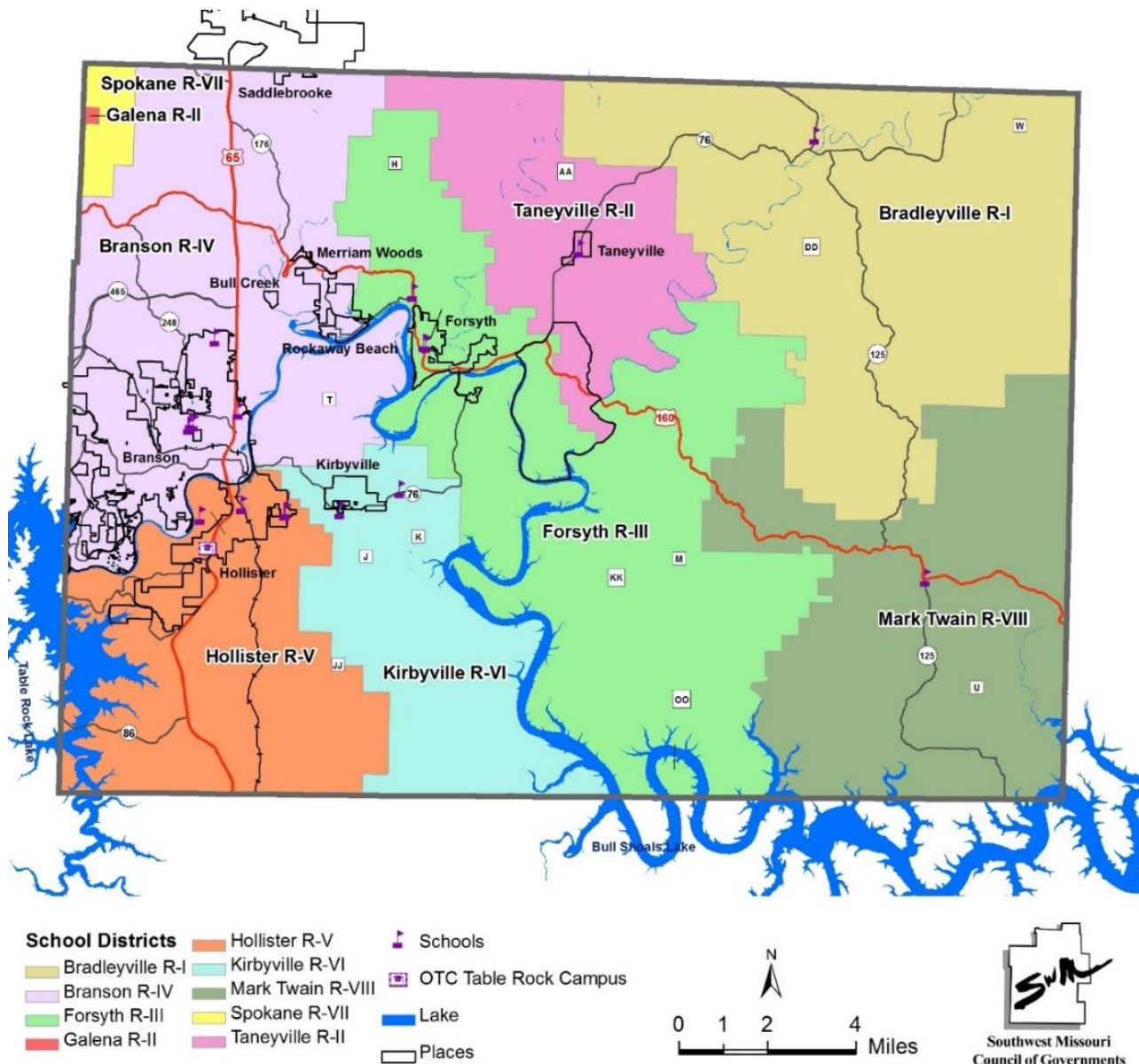
Past or ongoing projects or programs designed to reduce disaster losses include:

- Social Media Education
- Fire Safety Week
- Firewise Program
- Smoke Alarm Program
- Fire Extinguisher Safety Program

2.2.12 Public School District Profiles and Mitigation Capabilities

This section provides general information about participating school districts in the plan. There are seven school districts with facilities in Taney County. The Spokane and Galena schools districts extend into Taney County from Stone County, but no facilities are located in Taney County. **Figure 2.4** is a map of school district boundaries in Taney County.

Figure 2.4. Taney County School Districts



Source: Missouri GIS Database

Table 2.15. Taney County School Buildings and Enrollment Data, 2017

District Name	Building Name	Building Enrolment
Bradleyville R-I	Bradleyville High	143
Bradleyville R-I	Bradleyville Elementary	105
Taneyville R-II	Taneyville Elementary	162
Forsyth R-III	Forsyth High	405
Forsyth R-III	Forsyth Middle	330
Forsyth R-III	Forsyth Elementary	454
Branson R-IV	Branson High	1423
Branson R-IV	Branson Jr. High	677
Branson R-IV	Cedar Ridge Elementary	626
Branson R-IV	Buchanan Intermediate	498
Branson R-IV	Cedar Ridge Primary	330
Branson R-IV	Buchanan Elementary	668
Branson R-IV	Cedar Ridge Intermediate	564
Hollister R-V	Hollister High	454
Hollister R-V	Hollister Middle	321
Hollister R-V	Hollister Early Childhood Center	224
Hollister R-V	Hollister Elementary	350
Kirbyville R-VI	Kirbyville Middle	149
Kirbyville R-VI	Kirbyville Elementary	116
Mark Twain R-VIII	Mark Twain Elementary	44
OTC	Ozarks Technical Community College- Table Rock	465

Source: Missouri Department of Elementary and Secondary Education, 2017 Building Enrollment
<http://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx>; OTC Table Rock Campus Staff

Ozarks Technical Community College (OTC) - Table Rock Campus

This Ozarks Technical Community College (OTC) was established in 1990 to primary serve the Springfield area. In August 2013, the OTC Table Rock Campus opened on Highway 165 in Hollister. The campus is contained in a single building, the four-story Robert W. Plaster Free Enterprise Center, which features both general education classrooms and state-of-the-art computer, science and nursing labs.



Source: [OTC Table Rock website](#)

Table 2.16. Summary of Mitigation Capabilities – Taney County School Districts

Capability	Bradleyville R-I	Taneyville R-II	Forsyth R-III	Branson R-IV	Hollister R-V	Kirbyville R-VI	OTC Table Rock
Planning Elements							
Master Plan/ Date	Yes: 2012	Yes	Yes	Yes: 2016	Yes: 2013	Yes	N/A
Capital Improvement Plan/Date	Yes: 2012	Yes	Yes	Yes: 2017	Yes: 2017	Yes	Yes
School Emergency Plan / Date	Yes: 2017	Yes: 2014	Yes	Yes: 2017	Yes	Yes	Yes: 2016
Weapons Policy/Date	Yes: 2017	Yes	Yes	Yes	Yes	Yes	Yes: 2016
Personnel Resources							
Full-Time Building Official (Principal)	Yes: Superintendent	Yes: Principal	Yes: Assistant Superintendent	Yes	Yes: Principal	Yes: Principal	Yes: President
Emergency Manager	No	Yes	Yes: Administration	No	Yes	Yes: Administration	Yes
Grant Writer	No	No	No	No	Yes	No	Yes
Public Information Officer	No	No	No: Superintendent	Yes	Yes	No	Yes
Financial Resources							
Capital Improvements Project Funding	Yes	Yes	Yes	No	Yes	Yes	N/A
Local Funds	Yes	Yes	Yes	Yes	Yes	Yes	N/A
General Obligation Bonds	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Special Tax Bonds	Yes	No	No	No	Yes	No	N/A
Private Activities/Donations	Yes	Yes	Yes	No	Yes	Yes	Yes
State And Federal Funds/Grants	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other							
Public Education Programs	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Privately Or Self- Insured?	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fire Evacuation Training	N/A	Yes	N/A	N/A	N/A	Yes	N/A
Tornado Sheltering Exercises	N/A	Yes	N/A	N/A	N/A	Yes	N/A

Capability	Bradleyville R-I	Taneyville R-II	Forsyth R-III	Branson R-IV	Hollister R-V	Kirbyville R-VI	OTC Table Rock
Public Address/Emergency Alert System	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NOAA Weather Radios	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lock-Down Security Training	N/A	Yes	N/A	N/A	N/A	Yes	N/A
Mitigation Programs	No	Yes	N/A	N/A	N/A	Yes	Yes
Tornado Shelter/Saferoom	No	No	Yes	No	Yes	Yes	No
Campus Police	Yes	No	Yes	Yes	Yes	No	Yes

Data Collection Questionnaires, 2017

3 RISK ASSESSMENT

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44 CFR Requirement §201.6(c)(2): [The plan shall include] A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

The goal of the risk assessment is to estimate the potential loss in Taney County, including loss of life, personal injury, property damage, and economic loss, from a hazard event. The risk assessment process allows communities and school/special districts in Taney County to better understand their potential risk to the identified hazards. It will provide a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

This is an update of the previous Taney County Hazard Mitigation Plan adopted in January of 2013. According to the U.S. Census Bureau July 1, 2016 population estimate, the population of Taney County grew to 54,735 from 51,675 at the time of the 2010 decennial census. The population has increased by approximately 3,139 people since the Taney County Hazard Mitigation Plan was adopted in 2013. According to the building permit data from the U.S. Census Bureau, 632 single family residences and 53 multi-family structures with 317 units were added to the building stock from 2011 to 2016. The reported construction cost of these new structures was \$143,981,163.

Taney County is a first class county in Missouri. According to the Missouri Revised Statutes (MORS 48.020), "All counties having an assessed valuation of nine hundred million dollars and over shall automatically be in the first classification after that county has maintained such valuation for the time period required by section 48.030."

This chapter is divided into four main parts:

- **Section 3.1 Hazard Identification** identifies the hazards that threaten Taney County and provides a factual basis for elimination of hazards from further consideration;
- **Section 3.2 Assets at Risk** provides Taney County's total exposure to natural hazards, considering critical facilities and other community assets at risk;
- **Section 3.3 Future Land Use and Development** discusses areas of planned future development
- **Section 3.4 Hazard Profiles and Vulnerability Analysis** provides more detailed information about the hazards impacting Taney County. For each hazard, there are three sections: 1) Hazard Profile provides a general description and discusses the threat to Taney County, the geographic location at risk, potential severity/magnitude/extent, previous occurrences of hazard events, probability of future occurrence, risk summary by jurisdiction, impact of future development on the risk; 2) Vulnerability Assessment further defines and quantifies populations, buildings, critical facilities, and other community/school or special district assets at risk to natural hazards; and 3) Problem Statement briefly summarizes the problem and develops possible solutions.

3.1 Hazard Identification

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the type...of all natural hazards that can affect the jurisdiction.

The Plan profiles all natural hazards that can affect Taney County. The natural hazards that can affect the county have been identified in the 2013 Taney County Plan and the 2013 Missouri State Plan. Natural hazards are naturally occurring climatological, hydrological or geologic events that have a negative effect on people and the built environment. Natural hazards identified include:

- Dam Failure
- Drought
- Earthquake
- Extreme Heat
- Wildfire
- Riverine and Flash Flood
- Land Subsidence/Sinkholes
- Severe Thunderstorm/ High Winds/ Lightning/ Hail
- Tornado
- Winter Weather/ Snow/ Ice/ Severe Cold

No new natural hazards have been identified since the adoption of the previous plan. The 2013 Missouri State Plan also addresses human-caused, and technological hazards; however, these will not be included in this plan update.

3.1.1 Review of Existing Mitigation Plans

The MPC reviewed the hazards identified in the previously approved plan, as well as the hazards identified in the state plan at the July 25, 2017 meeting. The hazards identified in the 2013 Taney County Plan are identified in the 2013 Missouri State Plan. The State Plan also includes levee failure as well as structural and urban fire in addition to wildfire. Human-caused and technological hazards identified in the State Plan include:

- CBRNE Attack
- Civil Disorder
- Cyber Disruption
- Hazardous Materials
- Mass Transportation Accidents
- Nuclear Power Plants
- Public Health Emergencies/Environmental Issues
- Special Events
- Terrorism
- Utility Interruptions and System Failures

In Missouri, local plans customarily include only natural hazards, as only natural hazards are required by federal regulations to be included. It was determined to include only natural hazards. The MPC agreed that human-caused and technological hazards are addressed in a Regional Homeland Security Oversight Committee (RHSOC) Threat and Hazard Identification Risk Assessment (THIRA)

and that including only natural hazards would meet the needs of local entities participating in the plan update.

Levee failure was omitted due to the fact that the National Levee Database, maintained by the U.S. Army Corps of Engineers (USACE), shows no federal levees located in the Taney County and planning committee research revealed no records of levees within Taney County. Although it is likely that levees exist, such as low-head agricultural levees, no records indicate that a breach or overtopping of these levees would impact property other than that of the levee owner. Damage to residential structures is unlikely. Therefore, these hazards are not included in this risk assessment for Taney County. Landslides occur in all 50 states; however, this hazard is not likely to have much of a notable impact on Taney County due to soil profile, geology, and climate factors. In addition, the risk of coastal storms, hurricanes, tsunamis, avalanche, and volcanic activity does not exist in Taney County due to the county's location in the central United States.

3.1.2 Review Disaster Declaration History

From 1990 to present, Taney County has experienced severe storms, tornadoes, flooding, straight-line winds, and severe winter storms. All of these natural hazard events triggered federal disaster declarations. Federal and/or state declarations may be granted when the severity and magnitude of an event surpasses the ability of the local government to respond and recover. Disaster assistance is supplemental and sequential. When the local government's capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. If the disaster is so severe that both the local and state governments' capacities are exceeded; a federal emergency or disaster declaration may be issued allowing for the provision of federal assistance.

FEMA also issues emergency declarations, which are more limited in scope and do not include the long-term federal recovery programs of major disaster declarations. Determinations for declaration type are based on scale and type of damages and institutions or industrial sectors affected. The Robert T. Stafford Disaster Relief and Emergency Assistance Act, (PL 100-707) requires that all requests for a declaration by the President must be made by the governor of the affected state. State and federal officials conduct a Preliminary Damage Assessment (PDA) to show that the disaster is of such severity and magnitude that effective response is beyond state and local capabilities. Based on the governor's request, the president may declare that a major disaster or emergency exists, thus activating federal programs to assist in the response and recovery effort. Not all programs are activated for every disaster. Some declarations will provide only individual assistance or public assistance, while others provide both. FEMA also issues emergency declarations, which are more limited in scope and do not include the long-term federal recovery programs of major disaster declarations. Determinations for declaration type are based on scale and type of damages and institutions or industrial sectors affected. (<https://www.fema.gov/disaster-declaration-process>)

Since 1990, Taney County has experienced thirteen (13) hazard events that triggered federal disaster declarations. The most recent was declared on June 2, 2017. Flooding was included in 11 out of 13 events that triggered a FEMA disaster declaration. Eight declarations also included tornados. Seven of these declarations triggered both individual and public assistance.

Table 3.1 lists the federal FEMA disaster declarations that included Taney County from 1990 to present.

Table 3.1. FEMA Disaster Declarations that included Taney County, Missouri, 1990-Present

Disaster Number	Description	Declaration Date	Individual Assistance (IA) Public Assistance (PA)
4317	Severe Storms, Straight-line Winds, Flooding, Tornadoes	June 2, 2017	Individual & Public Assistance
4250	Severe Storms, Straight-line Winds, Flooding, Tornadoes	January 21, 2016	Individual & Public Assistance
4238	Severe Storms, Straight-line Winds, Flooding, Tornadoes	August 07, 2015	Public Assistance
4144	Severe Storms, Straight-line Winds, Flooding	September 06, 2013	Public Assistance
1980	Severe Storms, Tornadoes, Flooding	May 09, 2011	Individual & Public Assistance
1822	Severe Winter Storm	February 17, 2009	Public Assistance
1809	Severe Storms, Flooding, Tornado	November 13, 2008	Individual & Public Assistance
1773	Severe Storms, Flooding	June 25, 2008	Individual & Public Assistance
1749	Severe Storms, Flooding	March 19, 2008	Individual & Public Assistance
1631	Severe Storms, Tornadoes, Flooding	March 16, 2006	Individual Assistance
1463	Severe Storms, Tornadoes, Flooding	May 06, 2003	Individual Assistance
1412	Severe Storms, Tornadoes	May 06, 2002	Individual & Public Assistance
955	Flooding, Severe Storm	July 09, 1993	Individual Assistance

Source: Federal Emergency Management Agency <http://www.fema.gov/disasters>

3.1.3 Research Additional Sources

A variety of sources were researched for data on natural hazards. Primary sources included FEMA, SEMA, National Climate Data Center (NCDC) and National Oceanic and Atmospheric Administration (NOAA). The U.S. Geological Survey (USGS) and the Center for Earthquake Research and Information (CERI) were major sources for earthquake information. The Missouri Department of Natural Resources (MDNR) Dam Safety Division provided information concerning dams and the Missouri Department of Conservation (MDC). Other information sources included county officials; existing city, county, regional and state plans; and information from local officials. The additional sources of data on locations and past impacts of hazards in Taney County include:

- Missouri Hazard Mitigation Plans (2010 and 2013)
- Taney County Multi-Jurisdictional Natural Hazard Mitigation Plan (2013)
- Federal Emergency Management Agency (FEMA)
- Missouri Department of Natural Resources (MDNR)
- National Drought Mitigation Center Drought Reporter
- US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics
- National Agricultural Statistics Service (Agriculture production/losses)
- Data Collection Questionnaires completed by each jurisdiction

-
- State of Missouri GIS data
 - Environmental Protection Agency
 - Flood Insurance Administration
 - Hazards US (HAZUS)
 - Missouri Department of Transportation
 - National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC);
 - County and local Comprehensive Plans to the extent available
 - County Emergency Management
 - County Flood Insurance Rate Map, FEMA
 - Flood Insurance Study, FEMA
 - U.S. Army Corps of Engineers
 - U.S. Department of Transportation
 - United States Geological Survey (USGS)

The only centralized source of data for many of the weather-related hazards is the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC). Although it is usually the best and most current source, there are limitations to the data which should be noted. The NCDC documents the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce. In addition, it is a partial record of other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occurs in connection with another event. Some information appearing in the NCDC may be provided by or gathered from sources outside the National Weather Service (NWS), such as the media, law enforcement and/or other government agencies, private companies, individuals, etc. An effort is made to use the best available information, but because of time and resource constraints, information from these sources may be unverified by the NWS. Those using information from NCDC should be cautious as the NWS does not guarantee the accuracy or validity of the information.

The NCDC damage amounts are estimates received from a variety of sources, including those listed above in the Data Sources section. For damage amounts, the NWS makes a best guess using all available data at the time of the publication. Property and crop damage figures should be considered as a broad estimate. Damages reported are in dollar values as they existed at the time of the storm event. They do not represent current dollar values.

The database currently contains data from January 1950 to March 2014, as entered by the NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The following timelines show the different time spans for each period of unique data collection and processing procedures.

- Tornado: From 1950 through 1954, only tornado events were recorded.
- Tornado, Thunderstorm Wind and Hail: From 1955 through 1992, only tornado, thunderstorm wind and hail events were keyed from the paper publications into digital data.
- From 1993 to 1995, only tornado, thunderstorm wind and hail events have been extracted from

the Unformatted Text Files.

- All Event Types (48 from Directive 10-1605): From 1996 to present, 48 event types are recorded as defined in NWS Directive 10-1605.

It should be noted that injuries and deaths caused by a storm event are reported on an area-wide basis. When reviewing a table resulting from an NCDC search by county, the death or injury listed in connection with that county search did not necessarily occur in that county.

3.1.4 Hazards Identified

The natural hazards that can possibly, or have affected Taney County, are profiled in alphabetical order. All hazards do not affect every jurisdiction participating in the Plan. **Table 3.2** provides a summary of the jurisdictions that may be affected by each hazard. An “x” in the table indicates that jurisdictions are affected by the hazard, and a “-” indicates the hazard is not applicable to that jurisdiction.

Table 3.2. Hazards Identified for Each Jurisdiction

Jurisdiction	Dam Failure	Drought	Earthquake	Extreme Heat	Wildfire	Flooding (River and Flash)	Land Subsidence/Sinkholes	Winter Weather/ Snow/ Ice/ Severe Cold	Thunderstorm/Lightning/ Hail/High Wind	Tornado
Taney County	x	x	x	x	x	x	x	x	x	x
Branson	x	x	x	x	x	x	x	x	x	x
Forsyth	x	x	x	x	x	x	-	x	x	x
Hollister	x	x	x	x	x	x	x	x	x	x
Merriam Woods	x	x	x	x	x	x	-	x	x	x
Rockaway Beach	x	x	x	x	x	x	-	x	x	x
Bull Creek	x	x	x	x	x	x	-	x	x	x
Saddlebrooke	x	x	x	x	x	x	-	x	x	x
Schools and Special Districts										
Bradleyville R-I School District	-	-	x	x	-	-	-	x	x	x
Branson R-IV School District	-	-	x	x	x	-	-	x	x	x
Forsyth R-III School District	-	-	x	x	x	-	-	x	x	x
Hollister R-V School District	-	-	x	x	x	-	-	x	x	x
Kirbyville R-VI School District	-	-	x	x	x	-	-	x	x	x
Taneyville R-II School District	-	-	x	x	x	-	x	x	x	x
Ozarks Technical College –Table Rock Campus	x	-	x	x	x	-	-	x	x	x
Central Taney County Fire District	x	x	x	x	x	x	x	x	x	x
Taney County Regional Sewer District	x	x	x	x	x	x	x	x	x	x
Western Taney County Fire District	x	x	x	x	x	x	x	x	x	x

3.1.5 Multi-Jurisdictional Risk Assessment

The risk assessment assesses each participating jurisdiction's vulnerability to each hazard that can affect Taney County. Many of the hazards identified in the risk assessment have the same probability of occurrence throughout Taney County. The hazards that vary across Taney County in terms of risk include dam failure, flash flood, grass or wildland fire, river flood, flash flood, and sinkholes/land subsidence. These differences are detailed in each hazard profile under geographic location and vulnerability.

Taney County's climate is mostly uniform, with the west portion generally being slightly warmer on average. The Cities of Branson, Forsyth, and Hollister are the most urbanized, experiencing more construction and development than most other portions of the county. Naturally, the urbanized areas of Taney County have a greater density of important assets, which are more vulnerable to weather-related hazards. These communities plan to continue to grow and expand City boundaries, which will increase vulnerability to natural hazards. This increase in vulnerability, however, can be mitigated through updated building codes and code enforcement as well as land use planning.

Agricultural uses are primarily located in rural, unincorporated Taney County. These areas are especially vulnerable to hail damages or drought.

These capabilities and resources to mitigate the impact of natural hazards vary across jurisdictions in Taney County. These differences will be discussed in greater detail in the vulnerability sections of each hazard.

3.2 Assets at Risk

This section assesses Taney County population, structures, critical facilities and infrastructure, and other important assets that may be at risk to hazards. The inventory of assets for each jurisdiction were derived from parcel data from the Taney County Assessor, the Taney County Structures dataset downloaded from Missouri Spatial Data information Service (MSDIS), and local jurisdiction data collection questionnaires. It should be noted that the planning area has expanded since the previously approved plan, due to the incorporation of the Village of Saddlebrooke for this plan update.

3.2.1 Total Exposure of Population and Structures

Unincorporated County and Incorporated Cities

In the following three tables, population data is based on 2011-2015 American Community Survey 5-year estimates. Building counts and building exposure values are based on parcel data provided by the county and structure data from the Missouri Spatial Data Information Service database which can be found at the following website:

<http://www.msdis.missouri.edu/data/datalist.html>.

Contents exposure values were calculated by factoring a multiplier to the building exposure values based on usage type. The multipliers were derived from the HAZUS MH 2.2 and are defined below in **Table 3.3**. Land values have been purposely excluded from consideration because land remains

following disasters, and subsequent market devaluations are frequently short term and difficult to quantify. Another reason for excluding land values is that state and federal disaster assistance programs generally do not address loss of land (other than crop insurance). It should be noted that the total valuation of buildings is based on county assessors' data which may not be current. In addition, government-owned properties are usually taxed differently or not at all, and so may not be an accurate representation of true value. Note that public school district assets and special districts assets are included in the total exposure tables assets by community and county.

Table 3.3 shows the total population, building count, estimated value of buildings, estimated value of contents and estimated total exposure to parcels for the unincorporated county and each incorporated city. For multi-county communities, such as Saddlebrooke, the population and building data may include data on assets located outside Taney County. **Table 3.4** that follows provides the building value exposures for the county and each city in Taney County broken down by usage type. Finally, **Table 3.5** provides the building count total for the county and each city in Taney County broken out by building usage types (residential, commercial, industrial, and agricultural).

Table 3.3. Maximum Population and Building Exposure by Jurisdiction

Jurisdiction	2015 Population	Building Count	Building Exposure	Contents Exposure	Total Exposure
Branson	11,084	6,011	\$497,833,834	\$412,182,117	\$910,015,951
Forsyth	2,068	1,363	\$24,473,210	\$15,538,465	\$40,011,675
Hollister	4,441	2,136	\$35,624,043	\$28,010,173	\$63,634,216
Merriam Woods	1,668	1,088	\$4,852,740	\$2,507,305	\$7,360,045
Rockaway Beach	832	571	\$6,038,070	\$3,468,025	\$9,506,095
Bull Creek	522	131	\$1,159,990	\$617,855	\$1,777,845
Saddlebrooke	284	125	\$6,774,780	\$3,555,420	\$10,330,200
Unincorporated	32,369	31,162	\$887,370,844	\$633,546,068	\$1,520,916,912
Totals	53,555	43,216	\$1,465,562,791	\$1,100,404,498	\$2,565,967,289

Sources: Population, 2015 American Community Survey; Building Count and Building Exposure, Missouri GIS Database; Taney County GIS Data: <http://www.msdis.missouri.edu/data/datalist.htm>; Contents Exposure derived by applying multiplier to Building Exposure based on standard contents multipliers per usage type as follows: Residential (50%), Commercial (100%), Agricultural (100%).

Table 3.4. Building Values/Exposure by Usage Type

Jurisdiction	Residential	Agricultural	Commercial	Total
Branson	\$171,303,434	\$1,475,410	\$325,054,990	\$497,833,834
Forsyth	\$17,869,490	\$42,070	\$6,561,650	\$24,473,210
Hollister	\$15,227,740	\$86,973	\$20,309,330	\$35,624,043
Merriam Woods	\$4,690,870	\$4,530	\$157,340	\$4,852,740
Rockaway Beach	\$5,140,090	\$5,160	\$892,820	\$6,038,070
Bull Creek	\$1,084,270	\$5,100	\$70,620	\$1,159,990
Saddlebrooke*	\$6,438,720	\$24,020	\$312,040	\$6,774,780
Unincorporated	\$507,649,553.00	\$6,534,141.00	\$373,187,150.00	\$887,370,844.00
Totals	\$730,316,587	\$8,196,044	\$727,050,160	\$1,465,562,791

Source: Taney County GIS Data; * = Saddlebrooke lies mostly in Christian County, and the assessment data for Christian County was presented differently than the data for Taney County. Necessary adjustments and estimates were made to equalize the values of the Saddlebrooke parcels compared to those of Taney County.

Table 3.5. Building Counts by Usage Type

Jurisdiction	Residential Counts	Commercial Counts	Agricultural Counts	Total
Branson	3,091	1,170	27	4,288
Forsyth	749	113	2	864
Hollister	1,426	161	23	1,610
Merriam Woods	705	15	11	731
Rockaway Beach	279	76	0	355
Bull Creek	95	2	0	97
Saddlebrooke	98	4	4	106
Unincorporated	11,448	802	4,130	16,380
Totals	18,136	2,365	4,209	24,710

Source: Missouri GIS Database

Even though schools and special districts' total assets are included in the tables above, additional discussion is needed, based on the data that is available from the districts' completion of the Data Collection Questionnaire and district maintained websites. The number of enrolled students at the participating public school districts is provided in Table 3.6 below. Additional information includes the number of buildings, building values (building exposure) and contents value (contents exposure). These numbers will represent the total enrollment and building count for the public school districts regardless of the county in which they are located.

Table 3.6. Population and Building Exposure by Jurisdiction-Public School Districts

Public School District	Enrollment	Building Count	Building Exposure	Contents Exposure	Total Exposure
Bradleyville R-I	248	2	\$6,952,033	\$2,267,115	\$9,219,148
Branson R-IV	4786	7	\$135,920,336	\$30,000,000	\$165,920,336
Forsyth R-III	1189	3	\$29,019,518	\$4,702,107	\$33,721,625
Hollister R-V	1349	4	\$50,000,000	\$50,000,000	\$100,000,000
Kirbyville R-VI	265	2	\$10,668,146	\$2,246,397	\$12,914,543
Mark Twain R-VIII	44	1	N/A	N/A	N/A
Taneyville R-II	162	1	\$5,524,609	\$538,489	\$6,063,098

Source: <http://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx>.

3.2.2 Critical and Essential Facilities and Infrastructure

This section will include information from the Data Collection Questionnaire and other sources concerning the vulnerability of participating jurisdictions' critical, essential, high potential loss, and transportation/lifeline facilities to identified hazards. Definitions of each of these types of facilities are provided below.

- Critical Facility: Those facilities essential in providing utility or direction either during the response to an emergency or during the recovery operation.
- Essential Facility: Those facilities that if damaged, would have devastating impacts on disaster response and/or recovery.

-
- High Potential Loss Facilities: Those facilities that would have a high loss or impact on the community.
 - Transportation and lifeline facilities: Those facilities and infrastructure critical to transportation, communications, and necessary utilities.

Table 3.7 includes a summary of the inventory of critical and essential facilities and infrastructure in Taney County. The list was compiled from the Data Collection Questionnaire as well as the following source:

- HAZUS contains an inventory of critical facilities

Table 3.7. Inventory of Critical/Essential Facilities and Infrastructure by Jurisdiction

Jurisdiction	Airport Facility	Bus Facility	Childcare Facility	Communications Tower	Electric Power Facility	Emergency Operations	Fire Service/EMS	Government	Housing	Shelters	Highway Bridge	Hospital/Health Care	Military	Natural Gas Facility	Nursing Homes	Police Station	Potable Water Facility	Rail	Sanitary Pump Stations	School Facilities	Stormwater Pump Stations	Tier II Chemical Facility	Wastewater Facility	Total
Branson		1		1	19	1	2	15				8					37			13			2	99
Forsyth			2				2	10			2				2	2			10	5	4		1	40
Hollister			5			2	2	5				3			1	1					4		1	24
Merriam Woods								1								1								2
Rockaway Beach								7								1	2		2				1	13
Bull Creek								1																1
Saddlebrooke				1			1																	2
Unincorporated Taney County					2			2																4
Central Taney County Fire District					2		5	1			2					1								11
Western Taney County Fire District							12																	12
Taney County Regional Sewer District								1											30				1	32
Totals																								62

Source: Data Collection Questionnaires; HAZUS.

Figure 3.1 is a map that shows the locations of bridges in Taney County included in the National Bridge Inventory data set. This data was extracted from the National Bridge Inventory. The HAZUS data contains a “scour index”, which is a number indicating the vulnerability of a bridge to scour during a flood. Bridges with a scour index between 1 and 3 are considered “scour critical”, or a bridge with a foundation determined to be unstable for the observed or evaluated scour condition. According to this information, there are no scour critical bridges identified in Taney County. Included on the map is local low water crossing locations within the county.

Figure 3.1. Taney County Bridges and Low Water Crossings

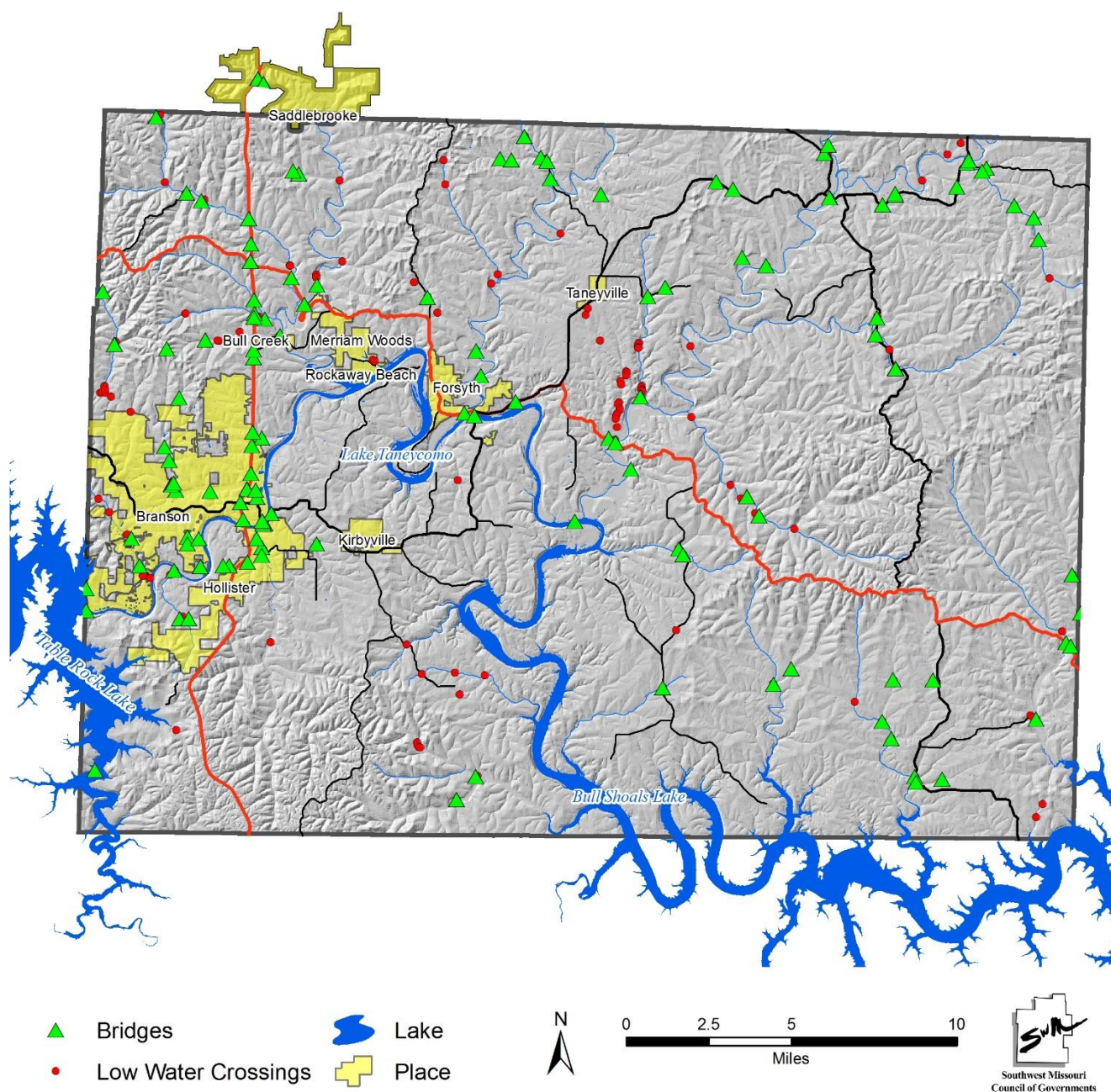
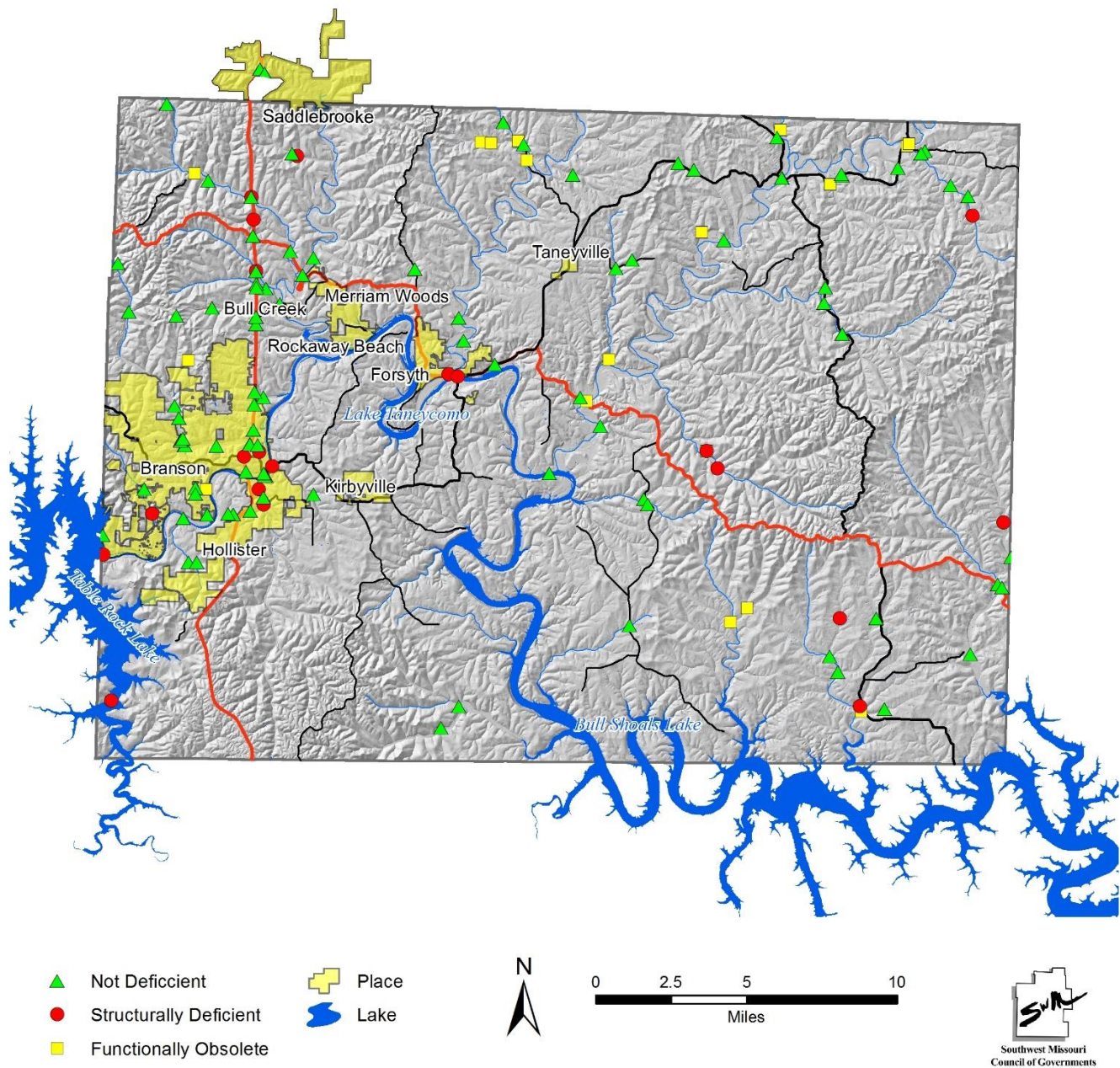


Figure 3.2. Structurally Deficient Bridges



Source: National Bridge Inventory

3.2.3 Other Assets

Assessing the vulnerability of Taney County to disaster also requires data on the natural, historic, cultural, and economic assets of the area. This information is important for many reasons.

- These types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- Knowing about these resources in advance allows for consideration immediately following a hazard event, which is when the potential for damages is higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- The presence of natural resources can reduce the impacts of future natural hazards, such as wetlands and riparian habitats which help absorb floodwaters.
- Losses to economic assets like these (e.g., major employers or primary economic sectors) could have severe impacts on a community and its ability to recover from disaster.

Threatened and Endangered Species: **Table 3.8** shows Federally Threatened, Endangered, Proposed and Candidate Species in Taney County.

Table 3.8. Threatened and Endangered Species in Taney County

Common Name	Scientific Name	Status
Gray Bat	<i>Myotis grisescens</i>	Endangered
Indiana Bat	<i>Myotis sodalis</i>	Endangered
Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	Threatened
Tumbling Creek Cavesnail	<i>Antrobia culveri</i>	Endangered and Critical Habitat Designated
Running Buffalo Clover	<i>Trifolium stoloniferum</i>	Endangered

Source: U.S. Fish and Wildlife Service, <http://www.fws.gov/midwest/Endangered/lists/missouri-cty.html>

Natural Resources: The Missouri Department of Conservation (MDC) provides a database of lands the MDC owns, leases, or manages for public use. **Table 3.9** provides the names and locations of parks and conservation areas in the Taney County.

Table 3.9. Parks in Taney County

Area Name	Address	City
Boston Ferry Conservation Area	Off Shray View Road	Branson
Cooper Creek Access	471 Cooper Creek Rd	Branson
Drury-Mincy Conservation Area	Gunnison Road	Kirbyville
Ozark Beach Recreation Area	2803 State Hwy Y	Forsyth
Ruth and Paul Henning Conservation Area	Branson, MO 65616	Branson
Hollister Towersite	Hollister, MO 65672	Hollister
The Lewis Family Memorial Conservation Area	Merriam Woods, MO 65740	Merriam Woods
Rockaway Beach Access	Beach Blvd	Rockaway Beach
Shepherd of the Hills Fish Hatchery	483 Hatchery Rd	Branson

Source: Missouri Department of Conservation

<http://mdc7.mdc.mo.gov/applications/moatlas/AreaList.aspx?txtUserID=guest&txtAreaNm=s>

Park Name	Address	City
Alexander Park	901 Hawthorn Street	Branson
Branson North Park	111 Woodridge Dr	Branson

Branson RecPlex	1500 Branson Hills Parkway	Branson
Cantwell Park	N Sunshine & Mockingbird Ln	Branson
Caudill Park	792 Caudill Way	Branson
Eiserman Park	201 Compton Drive	Branson
Epps Park	201 Long Street	Branson
John Nygard Memorial Park	500 S. Fifth Street	Branson
Lakeside Forest Wilderness Area	412 Owen Lane	Branson
Murphy Park	499 Neihardt Avenue	Branson
North Beach Park	50 N. Boardwalk	Branson
Old School Park	1515 W. State Highway 76	Branson
Parnell Park	257 Mayden Lane	Branson
Stockstill Park	625 Stockstill Lane	Branson
Sunset Park	869 Sunset Lane	Branson
Shadow Rock Park	715 Park Way	Forsyth
River Run Park	126 River Run Rd	Forsyth
Chad A. Fuqua Memorial Park	312 Esplanade Dr	Hollister
Downing View Park	Downing St	Hollister
Hulland Park	Hulland Park Rd	Hollister
Longview Park	215 Gage Dr	Hollister
Pepper Dog Park/Tiger Park	119 Myrtle Ave	Hollister
Sagers Park	154 W Elm St	Hollister

Source: County and community websites.

Historic Resources: The National Register of Historic Places is the official list of registered cultural resources worthy of preservation. It was authorized under the National Historic Preservation Act of 1966 as part of a national program. The purpose of the program is to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. The National Register is administered by the National Park Service under the Secretary of the Interior. Properties listed in the National Register include districts, sites, buildings, structures and objects that are significant in American history, architecture, archeology, engineering, and culture.

Properties in Taney County that are on the National Register of Historic Places are listed in **Table 3.10.**

Table 3.10. Taney County Properties on the National Register of Historic Places

Property	Address	City	Date Listed
Bonniebrook Homestead	North of Branson	Branson	4/20/84
Branson City Park Historic District	Junction of St. Limas and Oklahoma Streets	Branson	8/31/93
Downing Street Historic District	Downing St. between 3rd and 4th Streets	Hollister	12/29/78
Parnell, Samuel T. and Mary B., House	220 Angels Trail	Branson	4/25/08
Ross, John, House	West of Branson on MO 76	Branson	7/21/83
Sammy Lane Resort Historic District	320 E Main St.	Branson	8/31/93
Southwest Missouri Prehistoric Rock Shelter and Cave Sites Discontiguous Archaeological District	Restricted	n/a	10/24/91
Swan Creek Bridge	North of Forsyth	Forsyth	9/08/83

Source: Missouri Department of natural Resources – Missouri National Register Listings by County <http://dnr.mo.gov/shpo/mnrlist.htm>

Economic Resources: **Table 3.11** shows major non-government employers in Taney County.

Table 3.11. Major Non-Government Employers in Taney County

Employer Name	Main Locations	Product or Service	Employees
Herschend Entertainment	Branson	Entertainment	1,800
Cox Branson Medical Center	Branson	Healthcare	1,650
Kanakuk Camps	Branson	Summer Camp	1,000
Big Cedar Lodge	Branson	Hospitality	550
Tanger Factory Outlet	Branson	Retail	550
Wyndham Vacation Ownership	Branson	Real Estate/Hospitality	500
College of the Ozarks	Point Lookout	Higher Education	300
Menards	Hollister	Retail - Home Improvement	150
Lowes	Hollister	Retail - Home Improvement	135
National Enzyme Company	Forsyth	Manufacturing- Health and wellness	138
Country Mart	Forsyth	Retail- Grocer	57
Save A Lot	Forsyth	Retail- Grocer	25

Source: Data Collection Questionnaires; local Economic Development Commissions

Table 3.12 provides a summary of agriculture in Taney County.

Table 3.12. Agriculture in Taney County

Category	2007	2012	Percent Change
Number of Farms	434	414	-5%
Land in Farms	106,536 acres	115,895 acres	+9%
Average Size of Farms	245 acres	280 acres	+14%
Market Value of Products Sold			
Crop Sales	N/A	\$1,269,000 (11%)	N/A
Livestock Sales	N/A	\$10,431,000 (89%)	N/A
Total	\$7,183,000	\$11,699,000	+8%
Average Per Farm	\$16,552	\$28,260	+71%
Government Payments	\$55,000	\$209,000	+280%

Source: USDA Census of Agriculture: https://www.agcensus.usda.gov/Publications/2012/Online_Resources/County_Profiles/Missouri

3.3 Land Use and Development

3.3.1 Development Since Previous Plan Update

Taney County has experienced significant growth since 2000, with an increase of approximately 34.9% from 2000 to 2015 for the county as a whole, and 3.6% from 2010 to 2015.

Table 3.13 provides the population growth statistics for all cities in Taney County based on 2000 census, the 2010 census, and 2015 U.S. Census American Community Survey population estimates.

Table 3.13. County Population Growth, 2000, 2010, and 2015

Jurisdiction	2000 Population	2010 Population	2015 Population	2010-2015 # Change	2010-2015 % Change
Taney County	39,703	51,675	53,555	1,880	3.6
City of Branson	6,050	10,520	11,084	564	5.4
City of Forsyth	1,686	2,255	2,068	-187	-8.3
City of Hollister	3,867	4,426	4,441	15	0.3
City of Merriam Woods	1,142	1,761	1,668	-93	-5.3
City of Rockaway Beach	577	841	832	-9	-1.1
Village of Bull Creek	225	603	522	-81	-13.4
Village of Kirbyville*	n/a	207	244	37	17.9
Village of Saddlebrooke*	n/a	202	284	82	40.6
Village of Taneyville	359	396	327	-69	-17.4

Source: U.S. Bureau of the Census, Decennial Census, 2011-2015 American Community Survey 5-Year Estimates.

*The Villages of Kirbyville and Saddlebrooke were incorporated after the 2000 Census

Population growth or decline is generally accompanied by increases or decreases in the number of housing units. Increases in population add to the built environment and increase risk and exposure to hazard events.

Table 3.14 provides the change in numbers of housing units in Taney County in 2000, 2010, and 2015. The totals for 2015 were taken from the American Community Survey 2011-2015 five year estimates. It should be noted that there is a margin of error associated with these values.

Table 3.14. Change in Housing Units, 2000, 2010, and 2015

Jurisdiction	Housing Units 2000	Housing Units 2010	Housing Units 2015	2000-2015 % change	2010-2015 % Change
Taney County	19,688	29,255	29,986	52.3%	2.5%
City of Branson	3,366	8,599	8,982	166.8%	4.5%
City of Forsyth	918	1,164	1,057	15.1%	-9.2%
City of Hollister	1,931	2,199	2,219	14.9%	0.9%
City of Merriam Woods	586	842	811	38.4%	-3.7%
City of Rockaway Beach	366	528	511	39.6%	-3.2%
Village of Bull Creek	104	235	257	147.1%	9.4%
Village of Kirbyville*	n/a	87	99	n/a	13.8%
Village of Saddlebrooke*	n/a	87	108	n/a	24.1%
Village of Taneyville	155	173	162	4.5%	-6.4%

Source: U.S. Bureau of the Census, Decennial Census, 2011-2015 American Community Survey 5-Year Estimates.

*The Villages of Kirbyville and Saddlebrooke were incorporated after the 2000 Census

Since the 2010 US Census, Taney County has seen a small amount of growth. The population has grown about 3.6% since 2010, and the rate of growth is not expected to change in the near future. The number of housing units in the county has increased by 2.5% in the same time period. However, American Community Survey estimates for 2015 show a decrease in housing units and population for some jurisdictions since the 2010 census. Much development occurred in the unincorporated parts of the county, and a significant amount of development was in Branson. **Figures 3.3** and **3.4** are population density maps depicting census block population at the time of the 2000 and 2010 census,

respectively. Each dot on the maps represents 60 people. The maps display much of the population as small groups of people.

Figure 3.3. Taney County Dot Density by Census Block, 2000

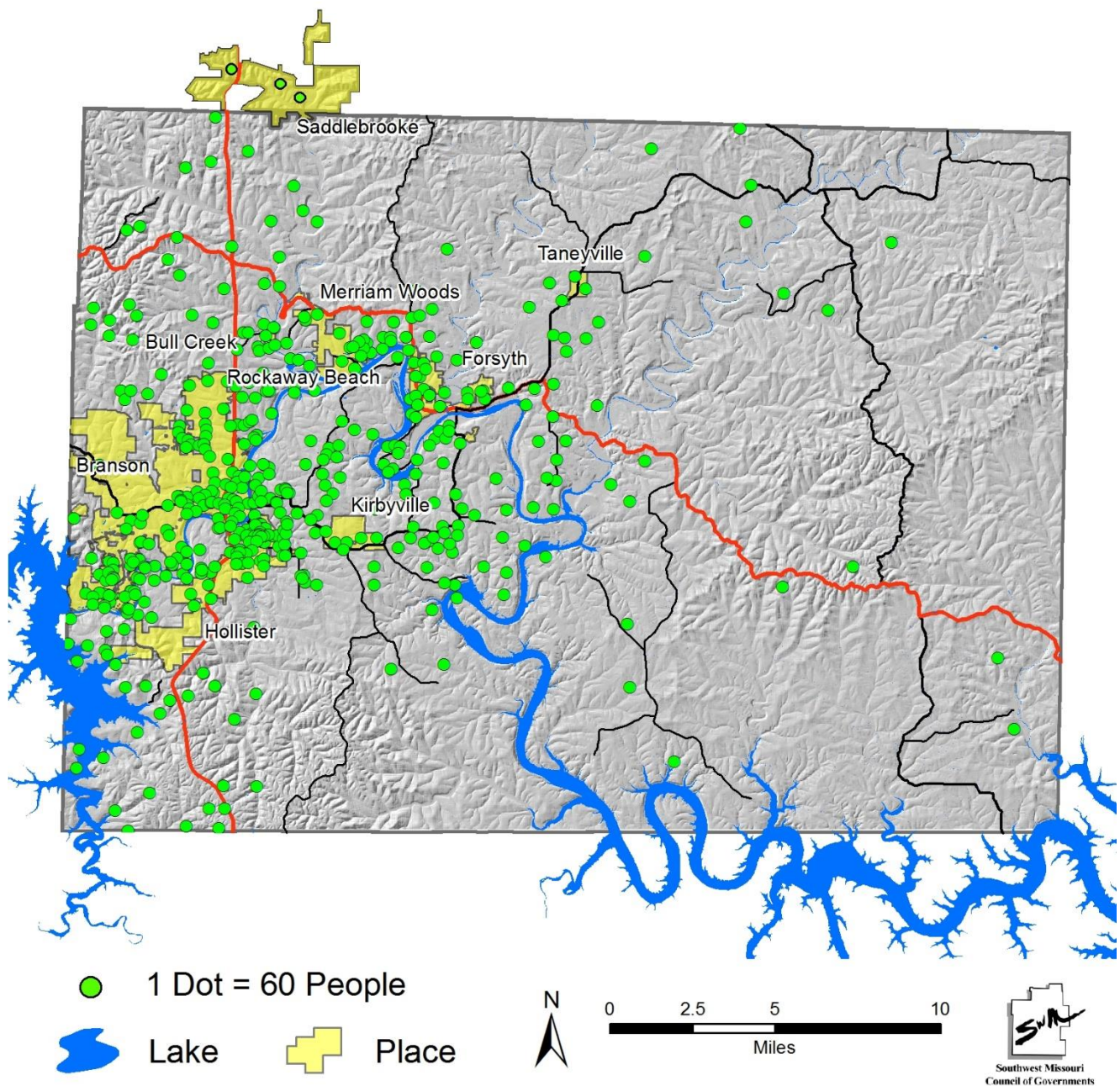
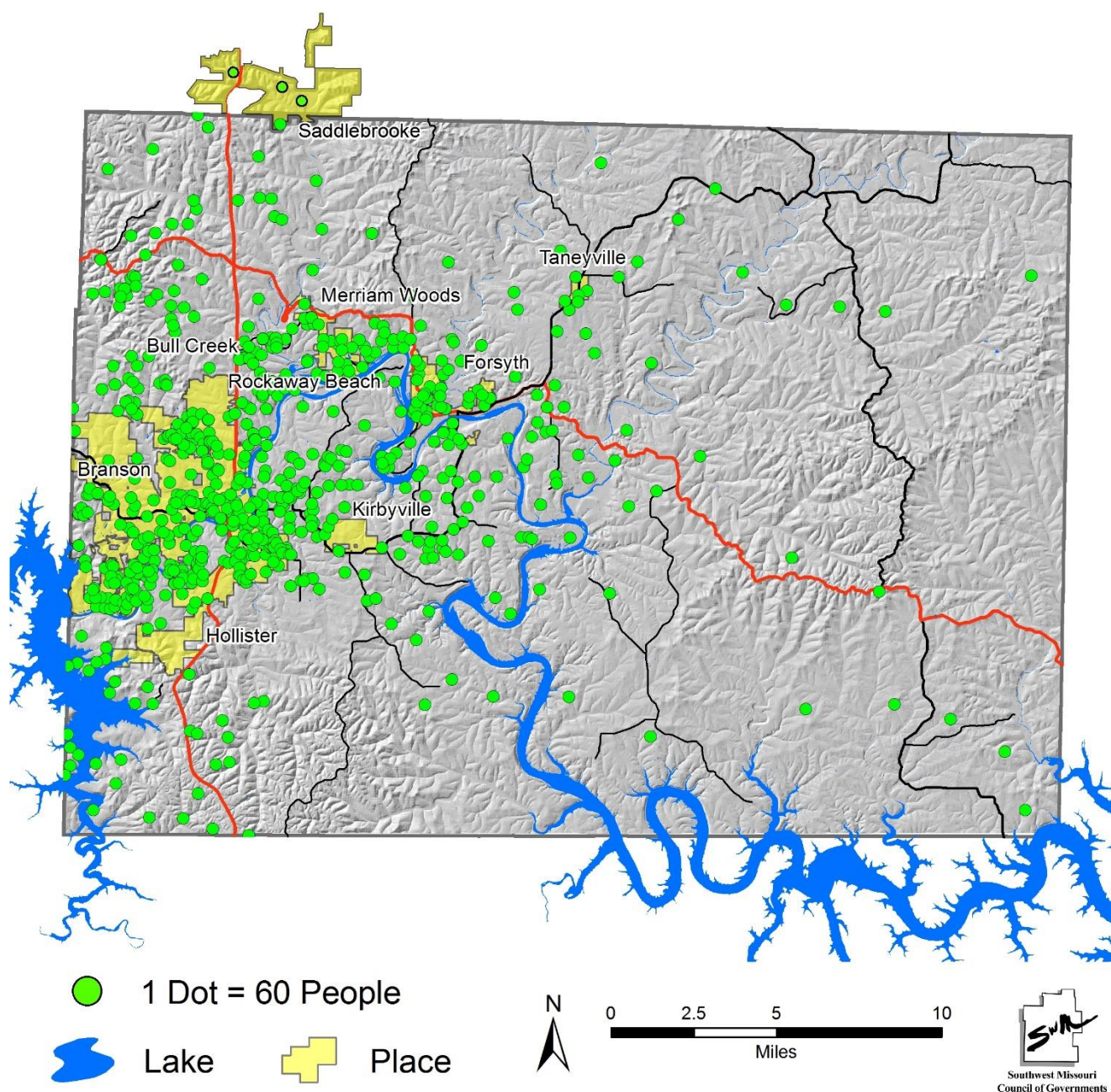


Figure 3.4. Taney County Dot Density by Census Block, 2010



Taney County communities have, overall, experienced some growth since the previous plan update. The City of Branson has seen substantial growth, and many of the smaller communities and unincorporated county has seen an increase in housing units and population. Below is a summary of each jurisdiction:

City of Branson

The city of Branson has seen much of the growth in Taney County, both in population and in construction. Branson has additional housing and commercial uses since the previous plan, but development has followed the city's comprehensive plan and focused on infill development. The City

has been conscious to keep new development out of the floodplain or mitigate those that are located in the floodplain.

City of Forsyth

Forsyth has likely seen some population and housing unit decrease since the previous plan update. A very small number of additional housing units were constructed since 2000, but the 2015 estimates would allude to a reduction in units since the previous plan. Recreational amenities have been added or renovated, including Shoals Bend Park, the Taney County Fair Grounds, and Forsyth Schools' football field. Any new residential construction has been kept out of the floodplain.

City of Hollister

Hollister has experienced some growth since the previous plan. A minimal number of housing units and limited commercial growth has occurred in the past five years, with none being in high vulnerability areas. The City has continued to use its comprehensive plan to keep growth out of the flood zone.

City of Merriam Woods

Merriam Woods has experienced no growth since the previous plan. The 2015 ACS data estimates a reduction in the population and number of housing units since 2010. Merriam Woods participated in the previous plan as a village, but a 2016 voter approved ballot measure incorporated Merriam Woods as a city.

City of Rockaway Beach

Rockaway Beach has had no growth, and perhaps some reduced population, since the previous plan update. The community has remained rather stagnant in development and growth, but does have a comprehensive plan to help guide new development.

Village of Bull Creek

Bull Creek has not had any significant growth since the previous plan. Census data shows a likely population decrease, but a housing unit increase between 2010 and 2015.

Village of Saddlebrooke

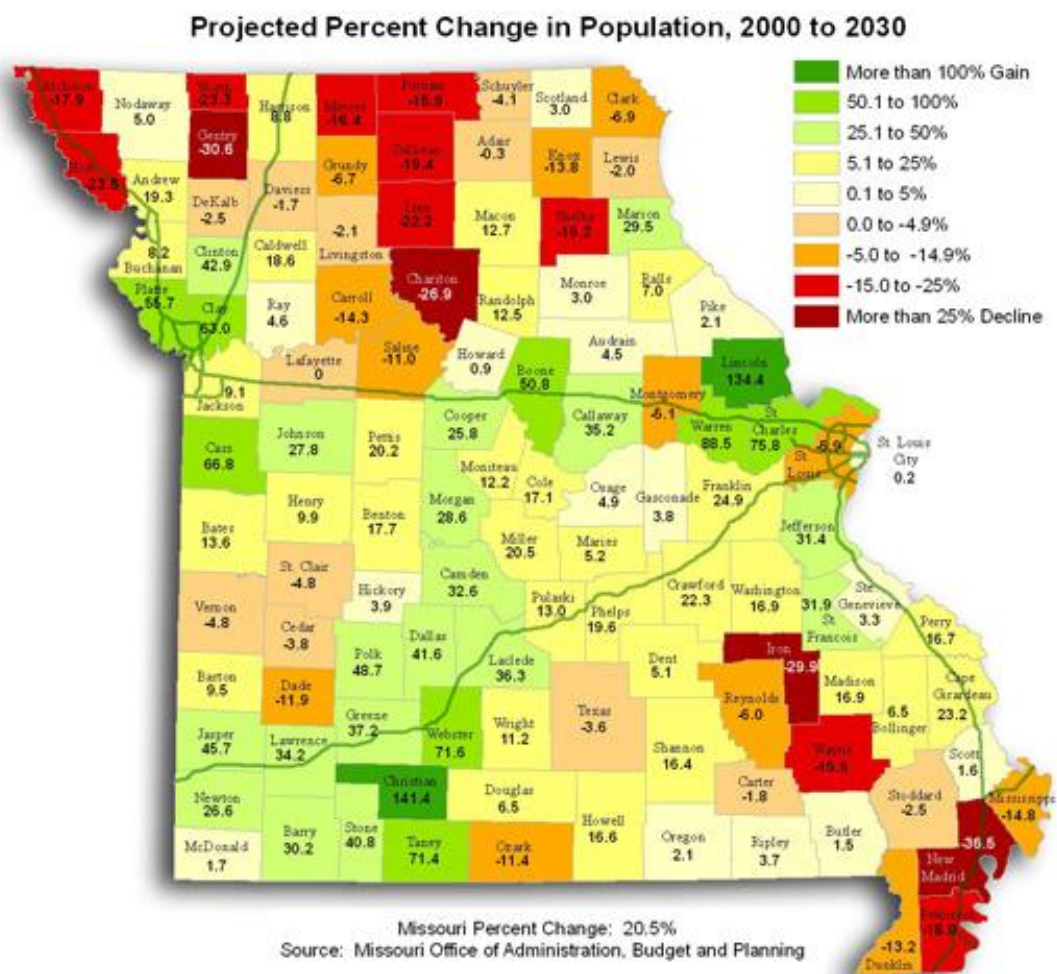
The Village of Saddlebrooke had not participated in the previous plan update. However, the Village has had some new development in the past five years.

3.3.2 Future Land Use and Development

Taney County is expected to see continued development. The Missouri Office of Administration, Budget and Planning has projected that Taney County will see a 71.4% population increase by 2030. Figure 3.5 shows the expected population change for each county in the state of Missouri. Taney County, as well as three of the four surrounding Missouri counties expect to see increased population. Taney County does have a master plan, but it has not been updated since 1999, so it is uncertain of where expected future development will be focused.

The remaining discussion in this section provides future growth and development information, where available, relative to each participating jurisdiction. Much of the information included is from the community data collection questionnaires, or where incomplete questionnaires were returned presumptions were made for future development based on past development trends.

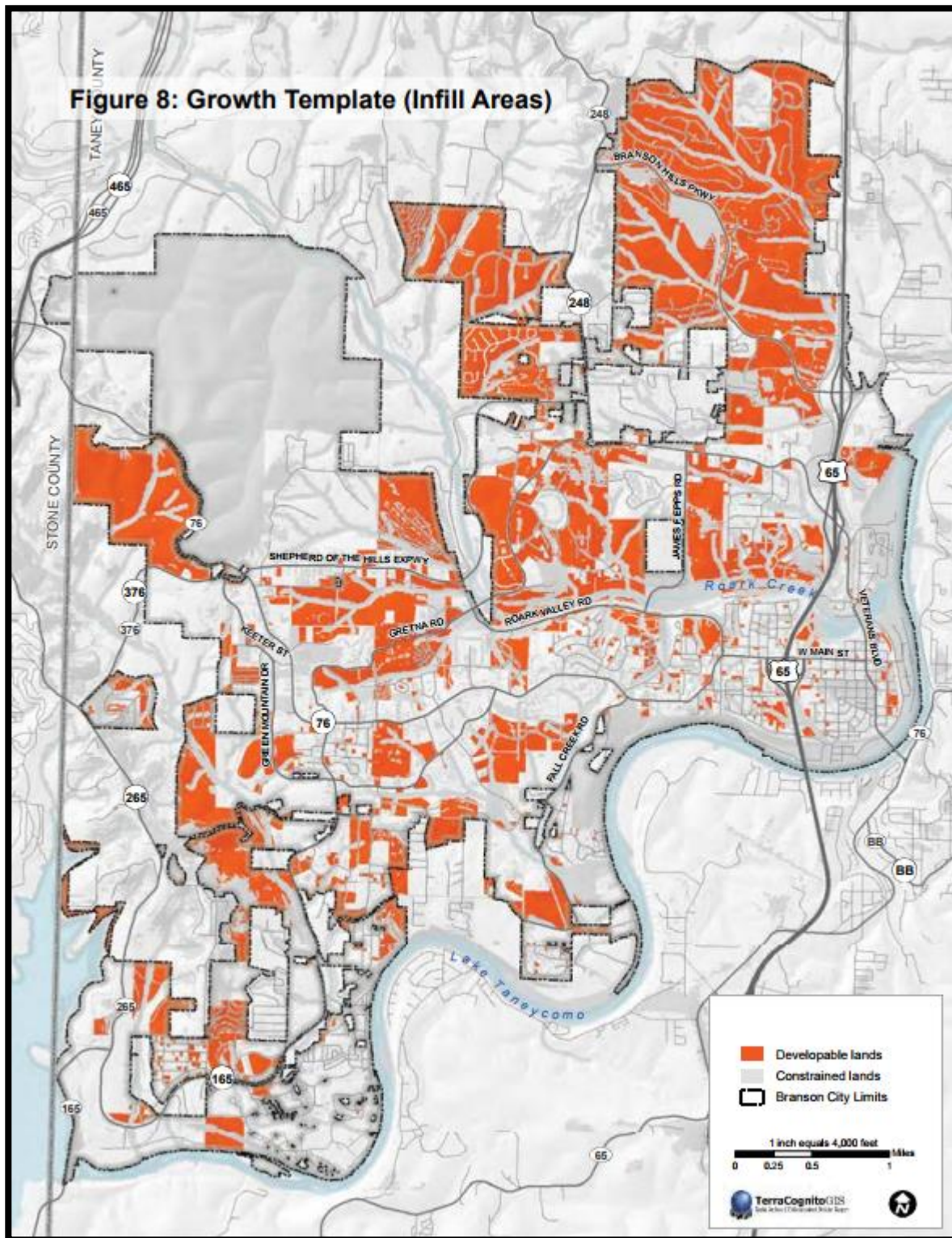
Figure 3.5. Projected Percent Change in Population, 2000 to 2030



City of Branson

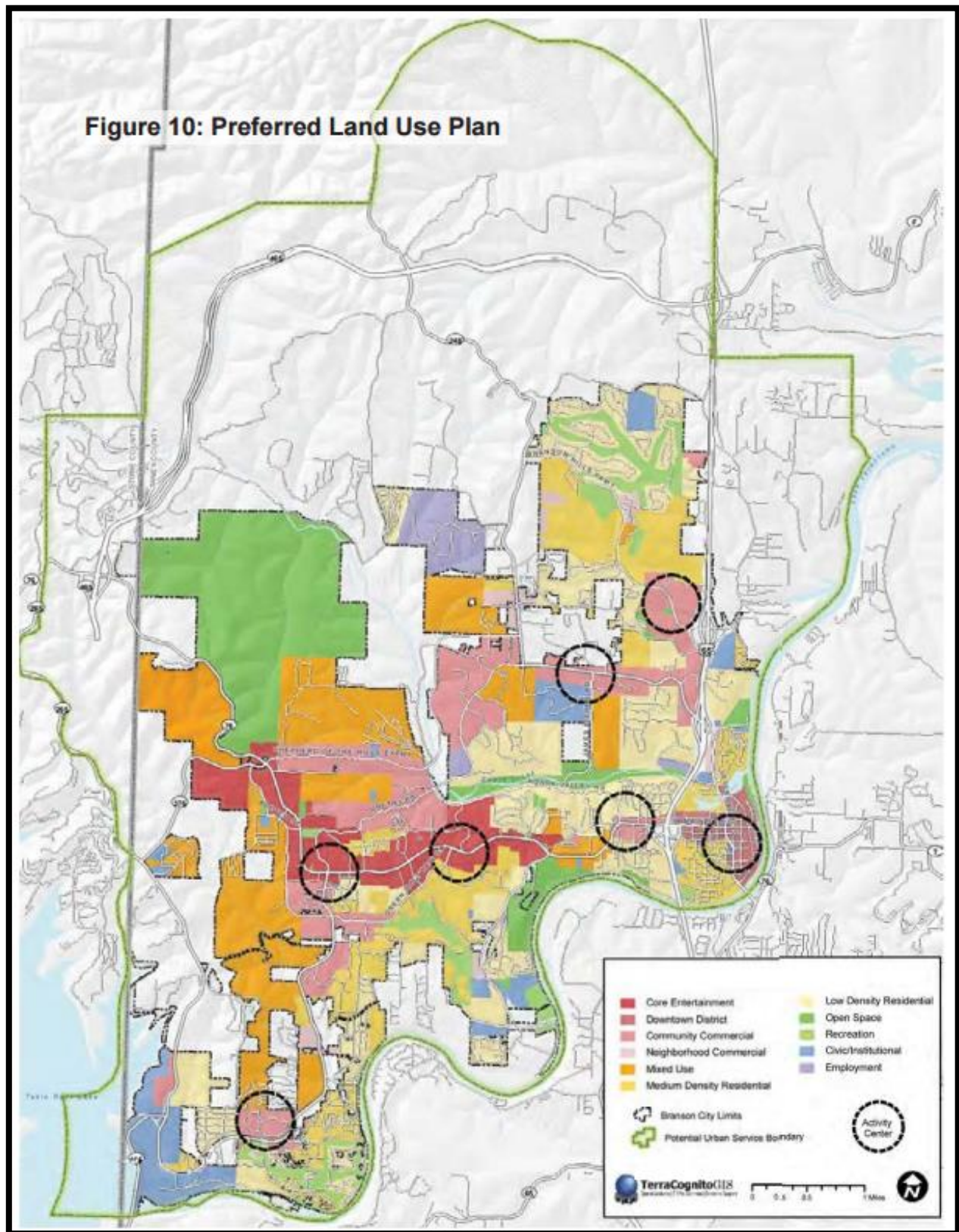
Branson is expected to continue to see substantial growth, with a projected population of 14,500 by the year 2020. According to Branson's comprehensive plan, Community Plan 2030, there are 2,922 acres of available vacant land inside the City limits, with 2,223 platted, approved, and planned residential units. Branson has determined what land is constrained due to floodplain, waterways or wetlands and removed that land from developable lands. Figure 3.6 shows the growth template identified in the City's comprehensive plan. Branson has identified regulations and criteria for sensitive land classification and preservation as an important focus as the community continues to grow.

Branson does anticipate adding new facilities in the future. These include a sign shop addition to the existing building at the Meadows Waste Water Plant, a service center/garage in a location to be determined, and a maintenance facility at a location to be determined.



Source: Branson Community Plan 2030. <http://bransonmo.gov/DocumentCenter/View/261>

Figure 3.7. Branson Preferred Land Use Map



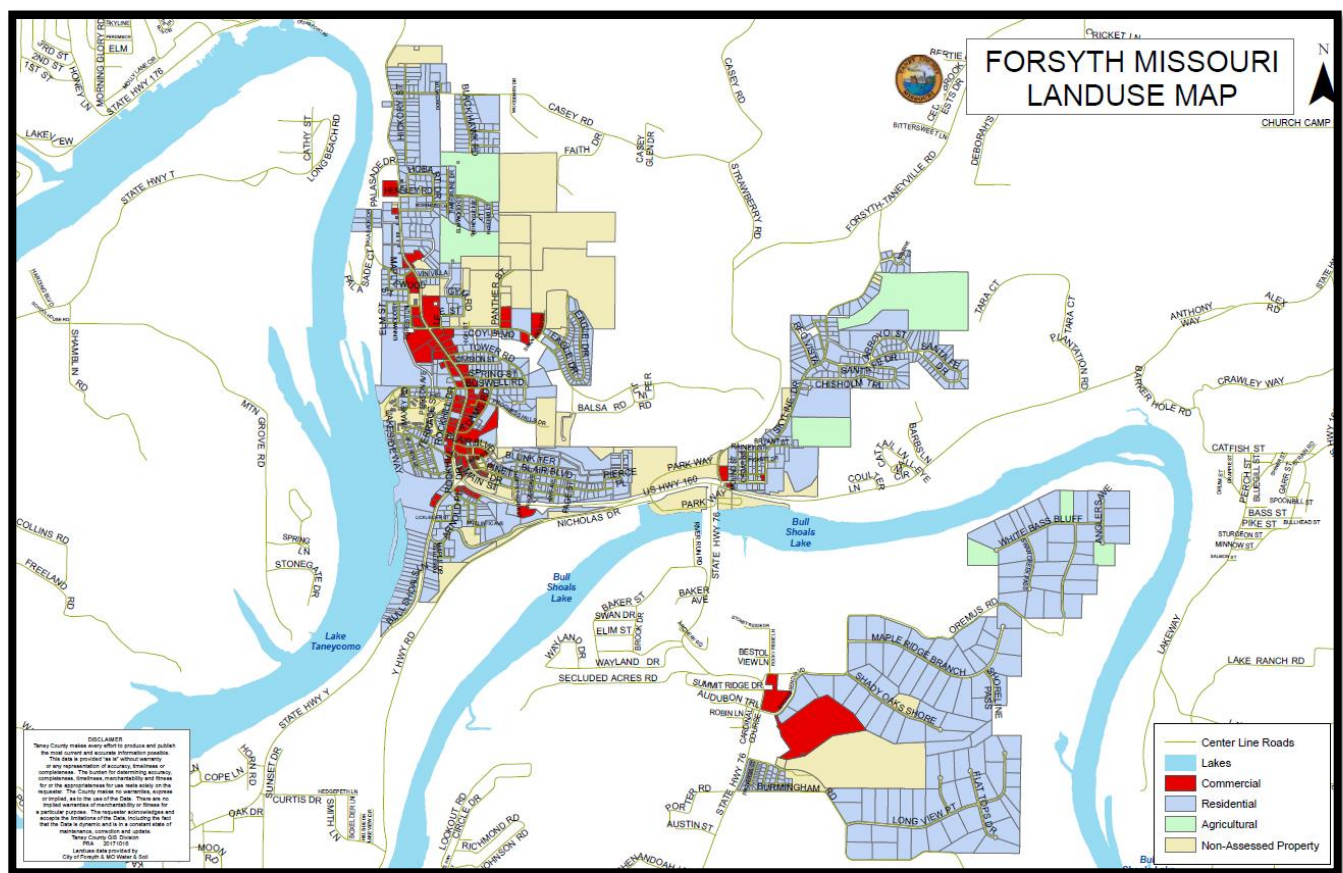
Source: Branson Community Plan 2030. <http://bransonmo.gov/DocumentCenter/View/261>

City of Forsyth

The city of Forsyth is likely to see limited growth over the next five years. Community facilities are planned for construction in Shoals Bend Park- equipment, and expansion of the school athletic facilities- locker rooms. The community comprehensive plan identifies growth boundaries to focus future growth and limit impacts that might increase vulnerability to natural hazards. Included in the comprehensive plan are tasks aimed at preserving the environment or assisting in mitigating negative impacts, such as: Protect the watershed and sinkholes to ensure that the group water supply and natural drainage patterns of the Forsyth area are not overburdened by local development.

Current land use in Forsyth is primarily residential, and much of the property in the most hazard prone areas is undeveloped, as shown in **Figure 3.8** the current land use map.

Figure 3.8. Forsyth Current Land Use Map



City of Hollister

The City of Hollister has a comprehensive plan to assist in guiding new development. It is expected that development trends will continue to be aggressive in the planned growth areas, with none of that area being located in the 1% flood zone. Hollister places a high priority on NFIP and takes compliancy very seriously. The comprehensive plan identifies consistently enforcing the City's floodplain management ordinance to minimize the potential for additional future development within the mapped floodplain as a specific strategy. The City has taken numerous enforcement actions, as well as mitigation projects, such as buyouts, to reduce vulnerability to flooding hazards. Any new

areas by uses vulnerable to floods, hazardous to others, inadequately elevated, or otherwise unprotected from flood damages.; and Amend or adopt updated building codes that incorporate disaster mitigation standards, such as requiring roof tie downs or hurricane straps to mitigate damage from high wind and tornado events.

Village of Bull Creek

Bull Creek is a small village and does not anticipate any new growth over the next five years. The Village is currently seeking funding for a mitigation buy-out along the river for repetitive loss properties. If that project is funded, then the community will see a reduction in housing units and a decrease in vulnerability, primarily to flooding. The Village does anticipate constructing a new Village Hall and maintenance building in the next five years.

Village of Saddlebrooke

The Village of Saddlebrooke does not anticipate significant growth in the next five years, but does expect some minimal housing development. The Village acts primarily as a bedroom community for the Branson and Springfield metro areas. The Village of Saddlebrooke has a recently updated master plan, which identifies several objectives focused on future growth that will assist in minimizing community vulnerabilities to natural hazards. Some of these objectives are: Encourage the preservation of open spaces and natural resources (such as woodlands, wetlands, and stream corridors) as part of the land development process, including the use of clustered housing design.; Establish landscaping and screening measures to ensure commercial development that is sensitive to the desired character of the community and minimizes adverse impacts on the normal use and enjoyment of adjoining land.; Regulating the use and manner of development through up-to-date reasonable zoning controls, subdivision regulations, building and housing codes, other regulatory tools, and development incentives.

School District's and OTC Table Rock Future Development

Bradleyville R-I

District enrollment has increased since the previous plan update and is expected to increase 3-4% in the next five years. Bradleyville has yet to build a FEMA-approved safe room and no plans are in place, as of yet, to acquire funds. No construction is planned for the near future.

Taneyville R-II

District enrollment has decreased slightly since the previous plan update, but is anticipated to remain steady in the next five years. The district does not have any designated tornado shelters on school property at this time. Taneyville school district is currently in the process of revising the school improvement plan based on district needs for the next three to five years. No new building projects are planned at this time.

Forsyth R-III

District enrollment has decreased slightly since the previous plan update, but a slight increase of 1-3% is projected for the next five years. Since the previous plan update, the school district has constructed a FEMA designed storm shelter that can house the total district enrollment. The shelter doubles as the performing arts center. The district plans to construct new locker rooms and restroom facilities at the athletic fields in the next five years. All of these facilities will be constructed out of hazard prone areas.

Branson R-VI

District enrollment has increased since the previous plan update, and is expected to stay flat or have slight growth. Since the previous plan, Branson school district has constructed a new K-3 elementary building, a 9th grade center, and Activity Center. The district does not have any FEMA designed storm shelters, but has worked with the fire chief to identify safe places to house students in the event of severe weather. There are no plans for additional facilities in the next five years.

Hollister R-V

District enrollment has decreased slightly since the previous plan update, but is projected to increase by 2% annually. The school district has constructed two FEMA storm shelters in the past four years. These shelters are available to students and staff during schools hours, and the middle school shelter is available to the general public during a tornado warning. The district is currently undergoing a master plan revision to determine facility needs in the next five to seven years. There are no definite plans for additional facilities at this time.

Kirbyville R-VI

District enrollment has decreased slightly since the previous plan update, but projected enrollment is expected to remain flat. Kirbyville schools have constructed two FEMA storm shelters since the previous plan update, using only local funding, which are available to students and staff during school hours. The district is currently updating its master plan and improvement program to assess needs in the next three to five years. There are no definite plans for additional facilities at this time.

Ozarks Technical Community College (OTC) - Table Rock Campus

The OTC- Table Rock Campus opened after the previous plan update was completed in 2013. The campus is sustained in a single building and contains a designated tornado shelter area. There are no plans to renovate or add new facilities, although enrollment is expected to increase between 25-35% in the next five years.

Special District's Future Development

Central Taney County Fire District

The Central Taney County Fire District does not anticipate any expansion in the next five years. New corporate offices for some of the larger employers in the area expected, but no Fire District facilities are planned for construction or renovation.

Western Taney County Fire District

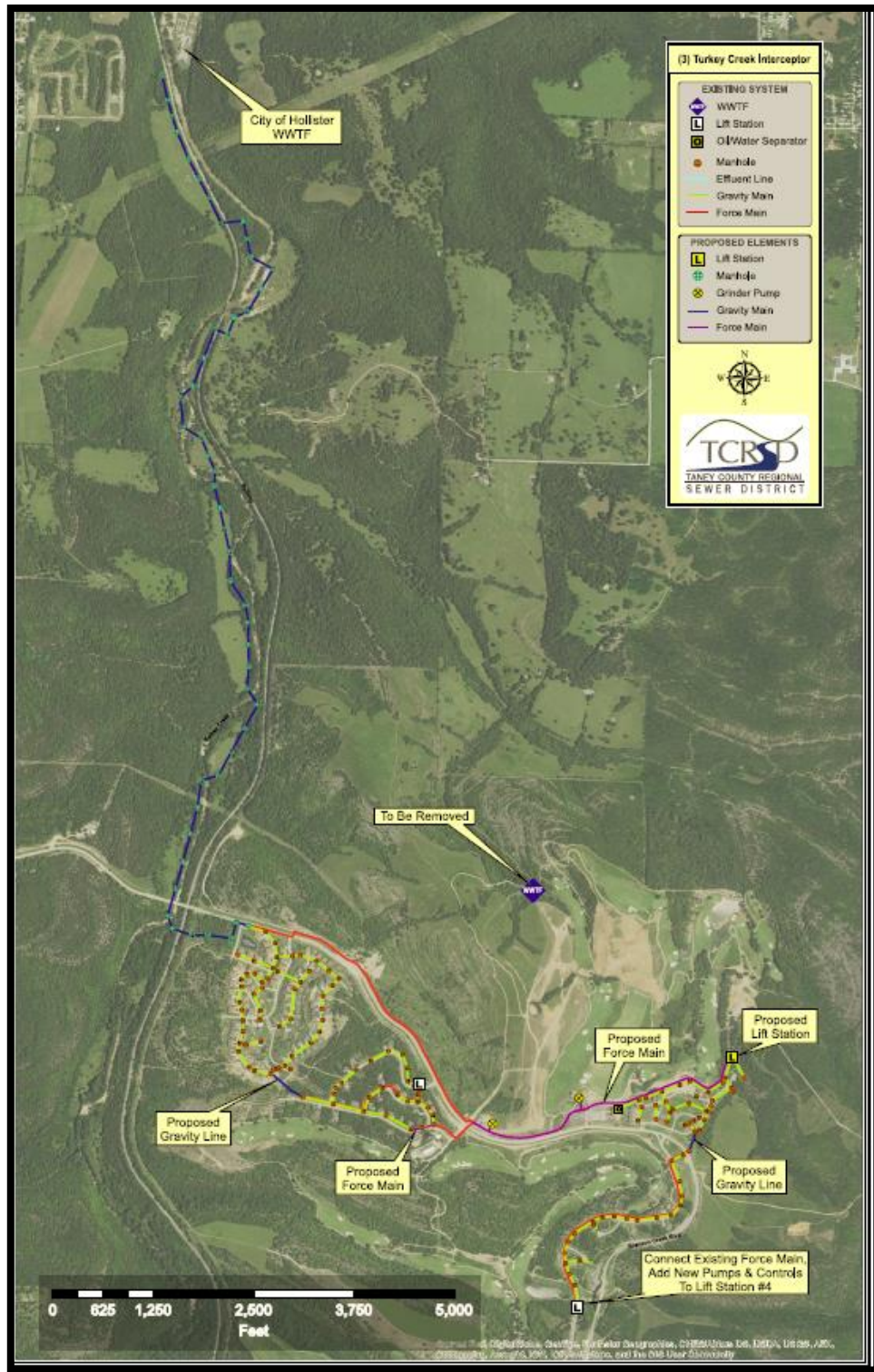
The Western Taney County Fire District has not grown or expanded boundaries since the previous plan update and does not anticipate growth in the next five years. No facilities are planned for construction or renovation.

Taney County Regional Sewer District

The Taney County Regional Sewer District has not seen any substantial development since the previous plan update. The District has extended service to several new customers primarily through the newly completed Powersite North Sanitary Sewer Improvement Phase 1 project, just outside the city limits of Forsyth. The District is working to design and eventually construct a new sewer interceptor line from the City of Hollister Wastewater Treatment Facility (WWTF) up Turkey Creek, with portions of the interceptor being in the 100 year floodplain, to serve customers in the Branson Creek

development as well as down Highway 86 to include the Big Cedar development and surrounding areas. Figure 3.10 displays proposed construction.

Figure 3.10. Taney County Regional Sewer District Turkey Creek Interceptor



3.4 Hazard Profiles, Vulnerability, and Problem Statements

Each hazard will be analyzed individually in a hazard profile. The profile will consist of a general hazard description, location, severity/magnitude/extent, previous events, future probability, a discussion of risk variations between jurisdictions, and how anticipated development could impact risk. At the end of each hazard profile will be a vulnerability assessment, followed by a summary problem statement.

Hazard Profiles

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the...location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

The level of information presented in the profiles will vary by hazard based on the information available. With each update of this plan, new information will be incorporated to provide better evaluation and prioritization of the hazards that affect Taney County. Detailed profiles for each of the identified hazards include information categorized as follows:

Hazard Description: This section consists of a general description of the hazard and the types of impacts it may have on a community or school/special district.

Geographic Location: This section describes the geographic location of the hazard in Taney County. Where available, use maps to indicate the specific locations of Taney County that are vulnerable to the subject hazard. For some hazards, the entire planning area is at risk.

Severity/Magnitude/Extent: This includes information about the severity, magnitude, and extent of a hazard. For some hazards, this is accomplished with description of a value on an established scientific scale or measurement system, such as an EF2 tornado on the Enhanced Fujita Scale. Severity, magnitude, and extent can also include the speed of onset and the duration of hazard events. Describing the severity/magnitude/extent of a hazard is not the same as describing its potential impacts on a community. Severity/magnitude/extent defines the characteristics of the hazard regardless of the people and property it affects.

Previous Occurrences: This section includes available information on historic incidents and their impacts. Historic event records form a solid basis for probability calculations.

Probability of Future Occurrence: The frequency of recorded past events is used to estimate the likelihood of future occurrences. Probability was determined by dividing the number of recorded years with an event by the number of total years and multiplying by 100. This gives the percent chance of the event happening in any given year. For events occurring more than once annually, a statement of the average number of events annually will be included.

Vulnerability Assessments

Requirement §201.6(c)(2)(ii) : [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Requirement §201.6(c)(2)(ii)(A) : The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

Requirement §201.6(c)(2)(ii)(B) : [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.

Requirement §201.6(c)(2)(ii)(C) : [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Requirement §201.6(c)(2)(ii): (As of October 1, 2008) [The risk assessment] must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged in floods.

Following the hazard profile for each hazard will be the vulnerability assessment. The vulnerability assessment further defines and quantifies populations, buildings, critical facilities, and other community assets at risk to damages from natural hazards. The vulnerability assessments will be based on the best available county-level data, which is in the Missouri Hazard Mitigation Plan (2010). The county-level assessments in the State Plan were based on the following sources:

- Statewide GIS data sets compiled by state and federal agencies; and
- FEMA's HAZUS-MH loss estimation software.

The vulnerability assessments in the Taney County plan will also be based on:

- Written descriptions of assets and risks provided by participating jurisdictions;
- Existing plans and reports;
- Personal interviews with planning committee members and other stakeholders; and
- Other sources as cited.

In the Vulnerability Assessment section, the following sub-headings will be addressed:

Vulnerability Overview

Potential Losses to Existing Development: Includes the types and numbers of building and critical facilities.

Previous and Future Development: This section will include information on how changes in

development have impacted the community's vulnerability to this hazard. It also includes a description of changes in development that occurred in known hazard prone areas since the previous plan have increased or decreased the community's vulnerability, and any anticipated future development in the county, and how that would impact hazard risk in Taney County.

Hazard Summary by Jurisdiction: For hazard risks that vary by jurisdiction, this section will provide an overview of the variation and the factual basis for that variation. For example, a community that has adopted more recent building codes and constructed safe rooms would be less vulnerable to the impact of tornados.

Problem Statements

Each hazard analysis concludes with a brief summary of the problems created by the hazard in Taney County, and possible ways to resolve those problems. Jurisdiction-specific information in those cases where the risk varies across Taney County is included.

3.4.1 Dam Failure

Sources:

- Missouri Department of Natural Resources, Dam and Reservoir Safety, <http://dnr.mo.gov/env/wrc/dam-safety/statemap.htm>
- Stanford University's National Performance of Dams Program; <http://npdp.stanford.edu/index.html>
- National Inventory of Dams, <http://geo.usace.army.mil/>
- DamSafetyAction.org, <http://www.damsafetyaction.org/MO/>

Hazard Profile

Hazard Description

A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams are typically constructed of earth, rock, concrete, or mine tailings. Dam failure is the uncontrolled release of impounded water resulting in downstream flooding, affecting both life and property. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation and poor construction can all cause a dam to fail. When a dam failure occurs, an enormous amount of water is suddenly released, destroying infrastructure and flooding the area downstream of the dam. Dams can fail for many reasons. The most common are as follows:

- **Overtopping** - inadequate spillway design, debris blockage of spillways or settlement of the dam crest.
- **Piping** - internal erosion caused by embankment leakage, foundation leakage and deterioration of pertinent structures appended to the dam.
- **Erosion** - inadequate spillway capacity causing overtopping of the dam, flow erosion, and inadequate slope protection.
- **Structural Failure** - caused by an earthquake, slope instability or faulty construction.

According to the State Plan, Missouri had some 5,423 recorded dams in 2013, the largest number of man-made dams of any state in the country. Missouri's topography allows lakes to be built easily and inexpensively, which accounts for the high number of dams. Despite the large number of dams, there are only 682 (about 13 percent) state regulated dams, with an additional 66 federally regulated dams. Federal dams in Missouri are primarily regulated by two federal agencies; the U.S. Army Corps of Engineers (USACE), and the U.S. Department of Agriculture Forest Service. The remaining 4,495 dams are unregulated.

Dams that fall under state regulation are non-federally regulated dams that are more than 35 feet in height. Most nonfederal dams are privately owned structures built either for agricultural, water supply or recreational use. The Department of Natural Resources (MDNR) Water Resources Center maintains the Dam and Reservoir Safety Program in Missouri. The program ensures that dams over 35 feet in height are safely constructed, operated, and maintained pursuant to Chapter 236 of Revised Statutes of Missouri.

The Department of Natural Resources provides information about regulated and unregulated dams in Missouri. The information includes details of the dam dimensions, date of construction, approximate reservoir volume, contributing drainage basin area and hazard classification. In addition, USACE

maintains the National Inventory of Dams (NID). The information in the NID database matches the list from the MDNR website with some additional details for dams in Taney County. Although both agencies provide a hazard classification for dams, the dam classification systems differ.

The Missouri Dam and Reservoir Safety Council Rules and Regulations uses three classes of downstream environmental zone used when considering permits. The downstream environment zone is the area below the dam that would become inundated should the dam fail. Inundation is defined as water two feet or more over the submerged ground outside of the stream channel. These classes are based on the number of structures and types of development contained within the inundation area as presented in **Table 3.15**. The downstream environment zone classification is also used to prescribe the frequency of inspection.

Table 3.15. MDNR Dam Hazard Classification Definitions

Hazard Class	Definition
Class I	The area downstream from the dam that would be affected by inundation contains ten (10) or more permanent dwellings or any public building. Inspection of these dams must occur every two years
Class II	The area downstream from the dam that would be affected by inundation contains one to nine permanent dwelling, or one (1) or more campgrounds with permanent water, sewer and electrical services or one (1) or more industrial buildings. Inspection of these dams must occur once every three years.
Class III	The area downstream from the dam that would be affected by inundation does not contain any of the structures identified for Class I or Class II dams. Inspection of these dams must occur once every five years

Source: Missouri Department of Natural Resources, http://dnr.mo.gov/env/wrc/docs/rules_reg_94.pdf

Dams in the NID are classified according to hazard potential, an indicator of the consequences of dam failure. A dam's hazard potential classification, presented in **Table 3.16**, does not indicate its condition. Dams assigned the high hazard potential classification are those where failure will potentially result in loss of human life. Significant hazard potential are those dams where failure results in no probable loss of human life but can cause economic loss. Dams assigned the low hazard potential classification are those where failure or results in no probable loss of human life and low economic or environmental losses. Losses are principally limited to the owner's property.

Table 3.16. NID Dam Hazard Classification Definitions

Hazard Class	Definition
Low Hazard	Failure results in only minimal property damage.
Significant Hazard	Failure could possibly result in the loss of life and appreciable property damage.
High Hazard	If the dam were to fail, lives would be lost and extensive property damage could result.

Source: National Inventory of Dams

There is not a direct correlation between the State Hazard classification and the NID classifications. However, most dams that are in the State's Classes I and II are considered NID High Hazard Dams.

Geographic Location

Dams in Planning Area

There are eight recorded dams in Taney County in both the MDNR and NID databases. Three are classified as high hazard dams, one as significant hazard, and three as low hazard. The most notable of these is Table Rock Dam, the structure that impounds Table Rock Lake. The dam was constructed from 1954-1958. Table Rock Dam is used for hydroelectric power and flood control.

Information about the high and significant hazard dams is presented in **Table 3.17**. The table indicates if there is an Emergency Action Plan (EAP) in place, height, last inspection date, nearest downstream city, “as the crow flies” distance to the nearest downstream city, and normal storage of water impounded by the dam in acre feet. An acre foot is defined as the volume of one acre of surface area to the depth of one foot.

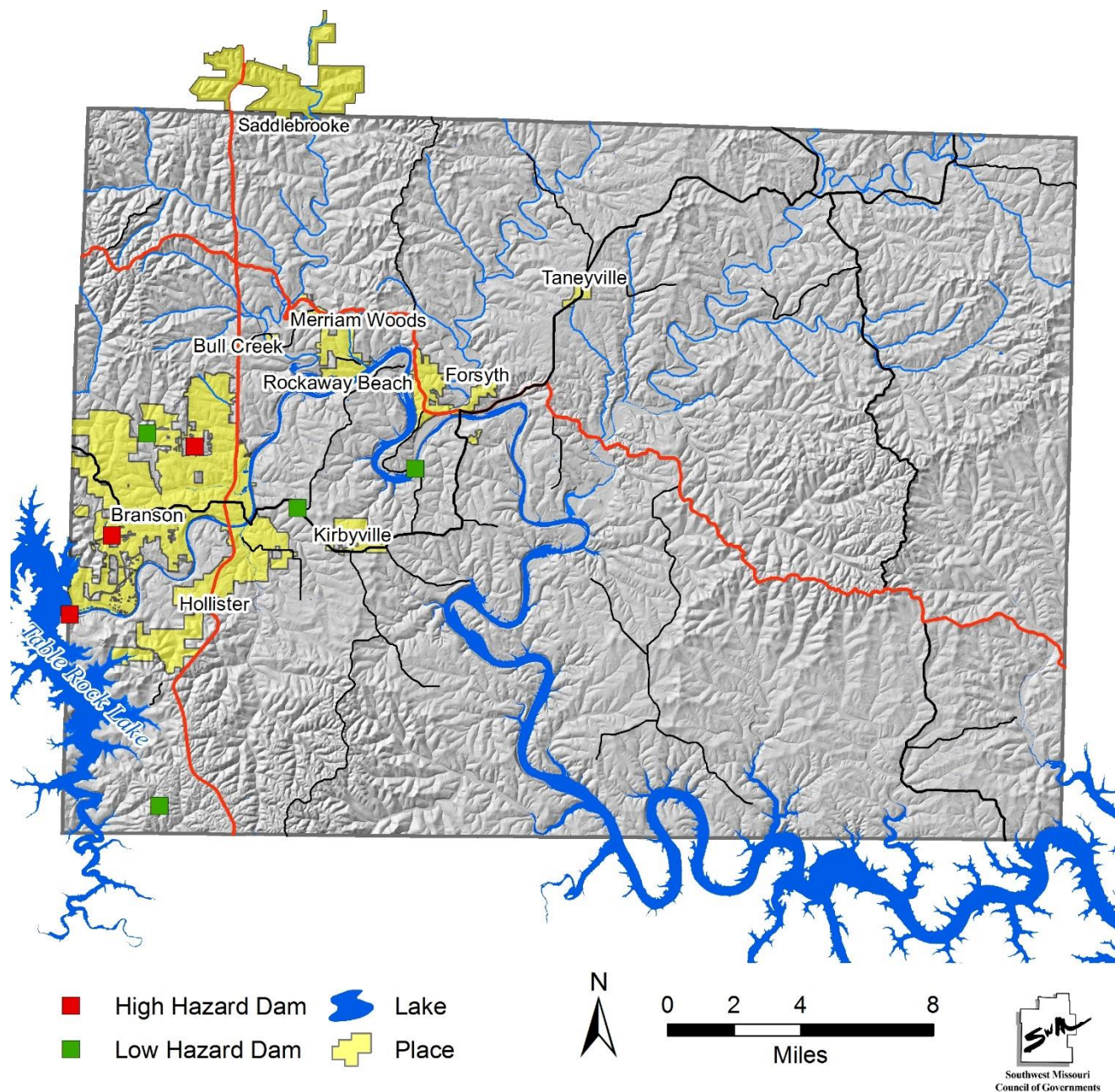
Table 3.17. High & Significant Hazard Dams in the Taney County Planning Area

Dam Name	Emergency Action Plan (EAP)AP	Dam Height (Ft)	Normal Storage (Acre-Ft)	Last Inspection Date	River	Nearest Downstream City	Distance To Nearest City (Miles)	Dam Owner
Fall Creek Dam	Not Req	32	342	n/a	Fall Creek	Branson	2	Impact Management
Rockwood Hills Lake Dam	Not Req	25	40	11/20/1980	Tributary to Bee Creek	Rockaway Beach	5	Bob Patrick
Silver Creek Lake Dam	Yes	41	140	06/25/2013	Silver Creek Tributary White River	Branson	1	n/a
Table Rock Dam	Yes	252	3,462,000	10/24/2012	White	Branson	8	CESWL

Sources: Missouri Department of Natural Resources, <http://dnr.mo.gov/env/wrc/dam-safety/statemap.htm> and National Inventory of Dams, http://nid.usace.army.mil/cm_apex/f?p=838:12 By the end of 2015, the Missouri DNR anticipates having Emergency Action Plans, including inundation maps for all state-regulated Class 1 and Class 2 dams. Contact the DNR Dam and Reservoir Safety Program at 800-361-4827 to request the inundation maps for your county to show geographic locations at risk, extent of failure and to perform GIS analysis of those assets at risk to dam failure.

Figure 3.11 provides the locations of NID high hazard dams located in Taney County. Inundation maps for dams were unable to be acquired, therefore making exact dam breach inundation areas unknown.

Figure 3.11. Hazard Dam Locations in Taney County

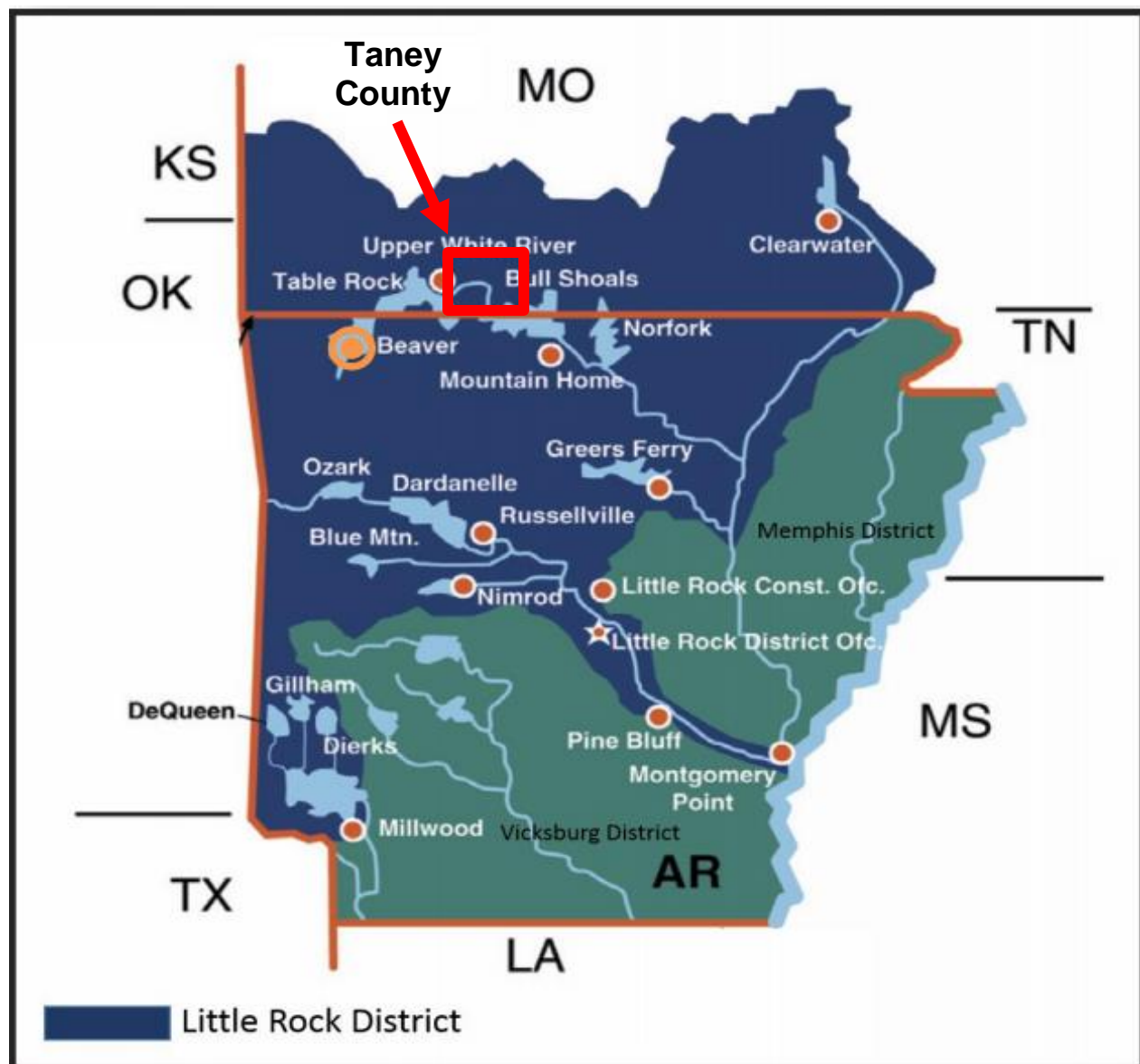


Source: U.S. Army Corps of Engineers, Missouri Department of Natural Resources

Upstream Dams Outside Taney County

The Beaver Lake Dam in Arkansas on Beaver Lake is upstream from Table Rock Lake. A failure of this dam could impact incorporated parts of Taney County. **Figure 3.12** shows the location of Beaver Lake Dam.

Figure 3.12. Upstream Dams Outside Taney County



Source: U.S. Army Corps of Engineers

Severity/Magnitude/Extent

The severity/magnitude of dam failure would be similar in some cases to the impacts associated with flood events (see the flood hazard vulnerability analysis and discussion). Based on the hazard class definitions, failure of any of the High Hazard/Class I dams could result in a serious threat of loss of human life, serious damage to residential, industrial or commercial areas, public utilities, public buildings, or major transportation facilities. Catastrophic failure of any high hazard dams has the potential to result in greater destruction due to the potential speed of onset and greater depth, extent, and velocity of flooding. Note that for this reason, dam failures could flood areas outside of mapped flood hazards.

Inspection reports could not be obtained due to the high hazard dams in Taney County not being State

regulated. Inundation maps were also unable to be obtained, however Figure 3.13 displays a potential downstream impact area for Table Rock Dam.

Previous Occurrences

The only record of previous dam failure in Taney County is the erosion and failure of Silver Creek Dam near Rockaway Beach in 2004. The dam was heavily eroded due to an improperly located spillway discharge channel on the east end of the dam. The failure of this dam threatened the safety of one permanent residence; reduced property values of those residences located adjacent to Lake Taneycomo, washed out a section of Missouri 176, and dumped tons of silt into Lake Taneycomo. One of the biggest barriers to repairing the Silver Creek Dam was its status as abandoned. Today new ownership of the dam is working with state agencies to maintain Silver Creek Dam.

Probability of Future Occurrence

Since there has been only one recorded event in Taney County in the past 20 years, a calculation of a probability percent would give a 5 percent annual probability of a dam failure. According to information from the 2013 State Plan, Missouri's percentage of high hazard dams in the DNR inventory puts the State at about the national average for that category. However, if development occurs downstream of dams the percentage of high hazard dams will increase. Additionally, the probability of dam failure may increase, as many of the smaller and privately owned dams continue to deteriorate without the benefit of further regulation or improvements. Regular inspection and maintenance greatly reduces the probability of dam failure.

Vulnerability

Vulnerability Overview

Vulnerability to dam failure in Taney County is limited to structures and critical infrastructure located in dam inundation zones. Of the four High Hazard Dams in Taney County, Table Rock Dam poses by far the greatest threat in the event of a failure, due to the volume of Table Rock Lake and the large amount of development downstream. A failure of Table Rock Dam would likely result in significant damage to the downstream area, including parts of Branson and Hollister. Beaver Lake Dam in Arkansas is upstream on the White River, which flows into Table Rock Lake. A dam failure at Beaver Lake could potentially impact communities in Taney County, but ideally Table Rock Lake could handle the flow from Beaver Lake at normal levels.

Potential Losses to Existing Development:

In the absence of inundation maps for Table Rock Dam, two estimates of the inundation area in the event of failure were made. To do this, a buffer was placed around the 100-year floodplain up to 10 miles downstream of the dam. For the first, the less severe event estimate, a 100 foot buffer was used to create the potential inundation area. For the second, the more severe event estimate, a 1,000 foot buffer was used to create the potential inundation area. For both scenarios, parcels from the Taney County Assessor parcels layer were overlaid onto the inundation areas to estimate the potential exposure. The estimated exposures for both scenarios are shown below in **Table 3.18**.

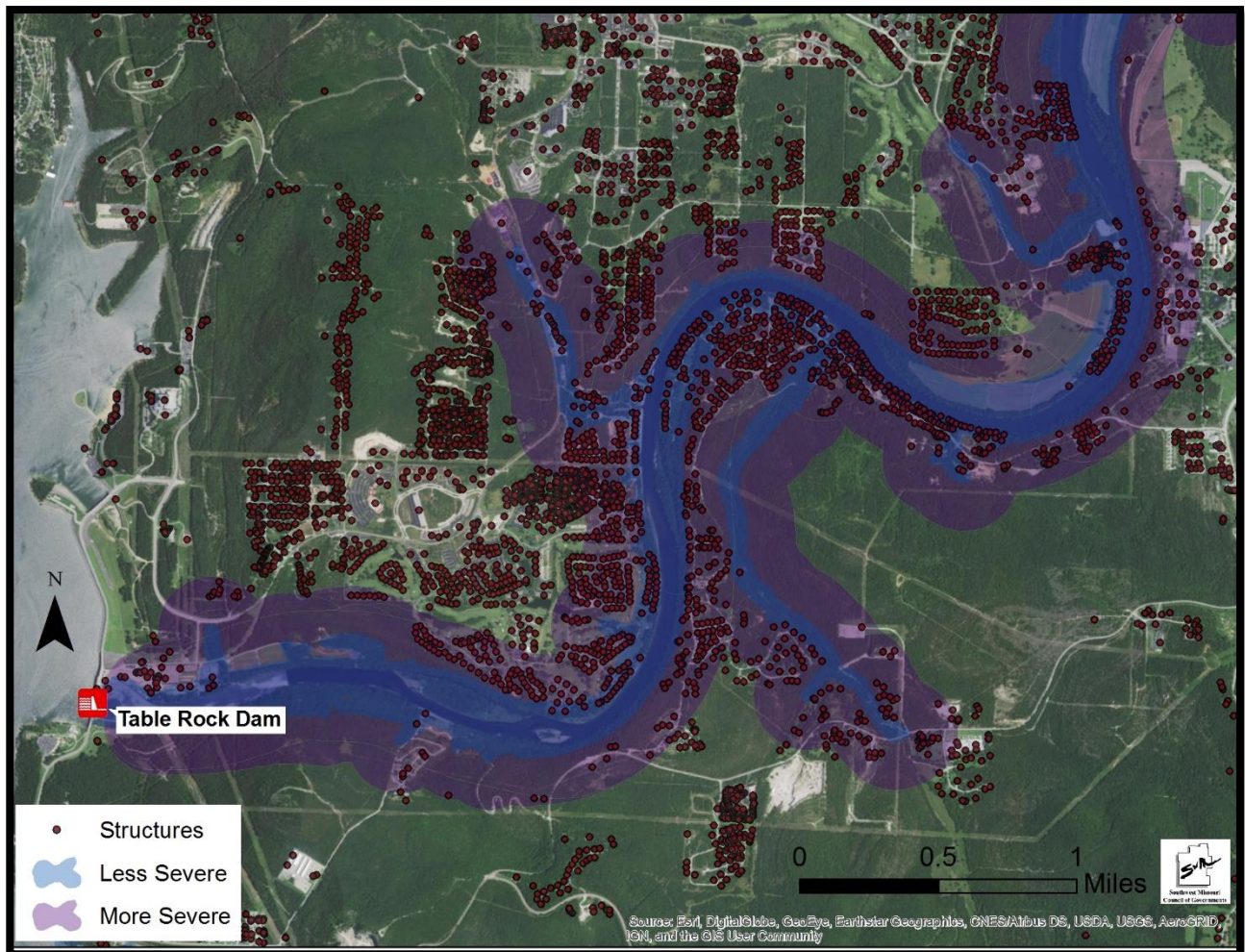
Table 3.18. Taney County Dam Failure Potential Exposure

Jurisdiction	Residential	Commercial	Agricultural	Total Exposure
<i>Less Severe Event (Floodplain + 100ft)</i>				
Branson	\$16,792,870	\$14,010,340	\$550	\$30,803,760
Hollister	\$961,450	\$289,320	\$140	\$1,250,910
Taney County	\$6,739,900	\$1,395,520	\$2,900	\$8,138,320
Total	\$24,494,220	\$15,695,180	\$3,590	\$40,192,990
<i>More Severe Event (Floodplain + 1,000ft)</i>				
Branson	\$45,163,860	\$42,394,850	\$13,580	\$87,572,290
Hollister	\$4,055,770	\$2,174,430	\$1,140	\$6,231,340
Taney County	\$25,250,940	\$2,153,700	\$49,920	\$27,454,560
Total	\$74,470,570	\$46,722,980	\$64,640	\$121,258,190

Source: Taney County Assessor GIS, Missouri GIS Database

Figure 3.13 shows the area immediately downstream of the dam, the area that would receive the greatest impact in the event of a dam failure.

Figure 3.13. Table Rock Dam Potential Inundation Exposure



Source: Missouri GIS Database

Impact of Previous and Future Development

It is possible that future development will occur downstream of high hazard dams within the county. Any new development within the inundation area would increase the exposure to a possible dam failure event.

Hazard Summary by Jurisdiction

The cities of Branson and Hollister are the primary jurisdictions in the County that are at major risk of a dam failure. In the event of a catastrophic failure of Table Rock Dam, parts of Rockaway Beach and Forsyth could be affected as well. School district boundaries would be impacted, but no school districts have facilities within the potential inundation area. Taney County Regional Sewer District has a few facilities within the potential impact area.

Problem Statement

Overall, dam failure is a relatively low risk to Taney County and incorporated communities. Regular inspections and maintenance may reduce likelihood of an event occurring. Although the probability of a dam failure in the county is low, the potential for damage remains.

Residents and communities near high hazard dams, primarily Table Rock Dam, should be familiar with the dam's emergency action plans, if available. Emergency plans written for dams include procedures for notification and coordination with local law enforcement and other governmental agencies, information on the potential inundation areas, plans for warnings and evacuation, and procedures for making emergency repairs. It would be advantageous for jurisdictions to work closely with dam operators and participate in dam emergency exercises.

3.4.2 Drought

Some specific sources for this hazard are:

- Maps of effects of drought, National Drought Mitigation Center (NDMC) located at the University of Nebraska in Lincoln; <http://www.drought.unl.edu/>.
- Historical drought impacts, National Drought Mitigation Center (NDMC) located at the University of Nebraska in Lincoln; at <http://droughtreporter.unl.edu/>.
- Recorded low precipitation, NOAA Regional Climate Center, (<http://www.hprcc.unl.edu>).
- Water shortages, Missouri's Drought Response Plan, Missouri Department of Natural Resources, <http://dnr.mo.gov/pubs/WR69.pdf>
- Populations served by groundwater by county, USGS-NWIS, <http://maps.waterdata.usgs.gov/mapper/index.html>
- Census of Agriculture, http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Missouri/ and http://www.agcensus.usda.gov/Publications/2012/Online_Resources/County_Profiles/Missouri/
- USDA Risk Management Agency, Insurance Claims, <http://www.rma.usda.gov/data/cause.htm>
- Natural Resources Defense Council, <http://www.nrdc.org/globalWarming/watersustainability/>

Hazard Profile

Hazard Description

Drought is generally defined as a condition of moisture levels significantly below normal for an extended period of time over a large area that adversely affects plants, animal life, and humans. A drought period can last for months, years, or even decades. There are four types of drought conditions relevant to Missouri, according to the State Plan, which are as follows.

- Meteorological drought is defined in terms of the basis of the degree of dryness (in comparison to some "normal" or average amount) and the duration of the dry period. A meteorological drought must be considered as region-specific since the atmospheric conditions that result in deficiencies of precipitation are highly variable from region to region.
- Hydrological drought is associated with the effects of periods of precipitation (including snowfall) shortfalls on surface or subsurface water supply (e.g., streamflow, reservoir and lake levels, ground water). The frequency and severity of hydrological drought is often defined on a watershed or river basin scale. Although all droughts originate with a deficiency of precipitation, hydrologists are more concerned with how this deficiency plays out through the hydrologic system. Hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural droughts. It takes longer for precipitation deficiencies to show up in components of the hydrological system such as soil moisture, streamflow, and ground water and reservoir levels. As a result, these impacts also are out of phase with impacts in other economic sectors.
- Agricultural drought focus is on soil moisture deficiencies, differences between actual and potential evaporation, reduced ground water or reservoir levels, etc. Plant demand for water depends on prevailing weather conditions, biological characteristics of the specific plant, its stage of growth, and the physical and biological properties of the soil.

-
- Socioeconomic drought refers to when physical water shortage begins to affect people.

Geographic Location

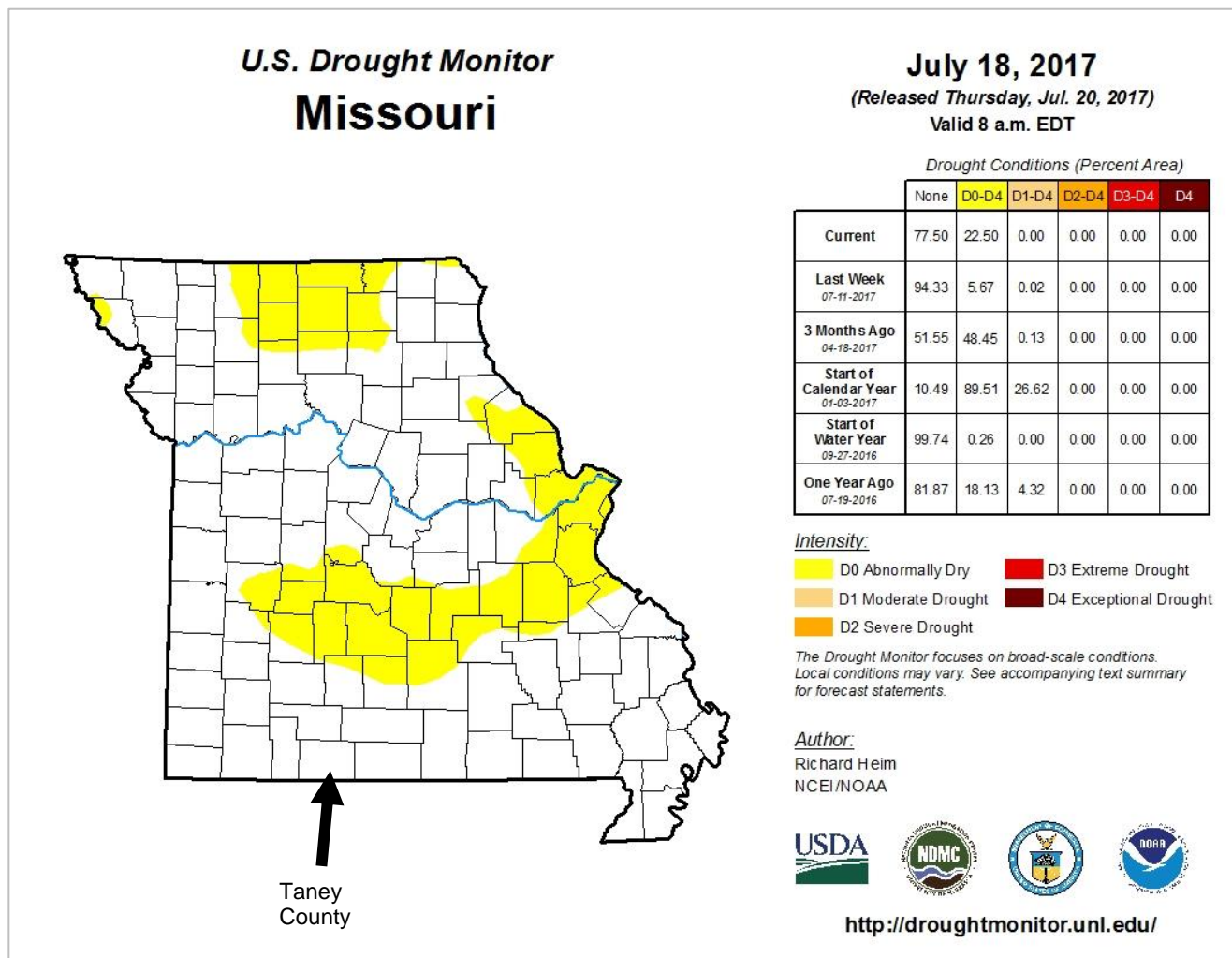
Droughts are regional climatic events that can impact large areas and multiple counties. The entire county is at risk to the impacts of drought. However, drought most directly impacts the agricultural sector, so areas within the county where there is extensive agricultural land use can experience significant impacts. The major agricultural activity in the county is livestock which accounts for 89% of sales. Due to the density of livestock in the region, an extreme drought can have a devastating effect.

Severity/Magnitude/Extent

The National Drought Monitor Center at the University of Nebraska at Lincoln summarized the potential severity of drought as follows: Drought can create economic impacts on agriculture and related sectors, including forestry and fisheries, because of the reliance of these sectors on surface and subsurface water supplies. In addition to losses in yields in crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Droughts also bring increased problems with insects and disease to forests and reduce growth. The incidence of forest and range fires increases substantially during extended droughts, which in turn place both human and wildlife populations at higher levels of risk. Income loss is another indicator used in assessing the impacts of drought because so many sectors are affected. Finally, while drought is rarely a direct cause of death, the associated heat, dust and stress can all contribute to increased mortality.

Figure 3.14 is a recent map from the U.S. Drought Monitor and an example of the size of the geographic area that could be in drought at any given moment in time. The map is only a snapshot of conditions at a given time and indicates the severity of drought conditions.

Figure 3.14. U.S. Drought Monitor Map of Missouri on July 18, 2017



Source: U.S. Drought Monitor, <http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?MO>

The most commonly used indicator of drought and drought severity is the Palmer Drought Severity Index (PDSI), jointly published by the NOAA and the United States Department of Agriculture. The Palmer Drought Indices measure dryness based on recent precipitation and temperature. The indices are based on a “supply-and-demand model” of soil moisture. Calculation of supply is relatively straightforward, using temperature and the amount of moisture in the soil. However, demand is more complicated as it depends on a variety of factors, such as evapotranspiration and recharge rates. These rates are harder to calculate. Palmer tried to overcome these difficulties by developing an algorithm that approximated these rates, and based the algorithm on the most readily available data — precipitation and temperature.

The Palmer Index has proven most effective in identifying long-term drought of more than several months. However, the Palmer Index has been less effective in determining conditions over a matter of weeks. It uses a “0” as normal, and drought is shown in terms of negative numbers; for example, negative 2 is moderate drought, negative 3 is severe drought, and negative 4 is extreme drought. Palmer's algorithm also is used to describe wet spells, using corresponding positive numbers.

According to the MDNR Missouri Drought Plan revised in 2002, Missouri's Drought Response System is divided into four phases based on Palmer index values:

- **Phase I: Advisory Phase**—Requires a drought monitoring and assessment system to provide enough lead time for state and local planners to take appropriate action;
- **Phase II: Drought Alert**—When the PDSI reads -1.0 to -2.0, and stream flows, reservoir levels, and groundwater levels are below normal over a several month period, or when the Drought Assessment Committee (DAC) determines that Phase II conditions exist based on other drought determination methods;
- **Phase III: Conservation Phase**—When the PDSI reads -2.0 to -4.0, and stream flows, reservoir levels, and groundwater levels continue to decline, along with forecasts indicating an extended period of below-normal precipitation, or when the DAC determines that Phase III conditions exist based on other drought determination models;
- **Phase IV: Drought Emergency**—When the PDSI is lower than -4.0, or when the DAC determines that Phase IV conditions exist based on other drought determination methods.

Palmer also developed a formula for standardizing drought calculations for each individual location based on the variability of precipitation and temperature at that location. The Palmer index can therefore be applied to any site for which sufficient precipitation and temperature data is available.

Incorporated communities in Taney County rely on both wells and surface water for water supply. Drought can easily have an impact on communities who rely on surface water. The impact of drought on deeper public wells would not be significant unless the drought was of such severity to reduce groundwater levels.

As it pertains to drought impact on agricultural lands, the USDA's Risk Management Agency provides insured crop loss payments in the county as a result of drought from 1948 to the present. From 2001 through 2015, these records indicate that there was \$0 in crop insurance payments during this time in Taney County.

Previous Occurrences

The NCDC storm events database includes 19 drought events occurring in Taney County from 1997 through 2017. Many of these were multiple reports from persistent drought events that lasted several months. The NCDC reports indicate that there were five distinct drought periods during the 26 year timeframe. **Table 3.19** provides a summary of these events.

Table 3.19. Previous Drought Occurrences 1998-2017

Drought Year	Duration	Property Damage	Crop Damage
1999	October	\$0	\$20,000
2000	August - September	\$0	\$0
2006	January - April	\$0	\$0
2011	July - November	\$0	\$5,000,000
2012-2013	June - January	\$0	\$760,000

Source: NOAA Storm Events Database <https://www.ncdc.noaa.gov/stormevents/>

Probability of Future Occurrence

Over the 20-year record period, Taney County was in a drought for 19 months. There are a total of 240 months in the record period. The calculated risk percent from the number of months of drought and the total number of months in the record period gives a 7.92% probability of drought in any given month in the county. Although drought is not predictable, long-range outlooks and predicted impacts of climate change could indicate an increased chance of drought persistence and severity.

Vulnerability

Vulnerability Overview

The agriculture sector is particularly vulnerable to drought. Periods of dry weather can reduce stock ponds and force the early sale of livestock. Crop production can be disrupted and vegetative diseases can spread reducing yields. Cities that operate water wells can experience water shortages during persistent drought periods like the six month drought period in 2012/2013. Those that rely on private wells are likely be impacted by reductions in the groundwater supply. Waste water treatment facilities may also be impacted, as it could limit the ability to discharge due to lower water levels and produce dangerous or unlawful levels of contaminants.

Potential Losses to Existing Development

According to data from the USDA Risk Management Agency, there was \$0 in insured crop loss payments in Taney County in the years of 2001 through 2015. However, according to NCDC data there were substantial crop losses incurred in 2011. Perhaps the losses did not result in USDA crop insurance payments, thus allowing for a discrepancy. Based on past losses, there is potential that future droughts could result in crop losses. There are no anticipated structural losses, loss of life, or injuries associated with this hazard.

Impact of Previous and Future Development

Increases in acreage planted with crops would add to exposure to drought-related agricultural losses. In addition, increases in population result in increased demand for treated water and increase waste water discharge, adding additional strain on water systems.

Impact of Climate Change

A new analysis, performed for the Natural Resources Defense Council, examined the effects of climate change on water supply and demand in the contiguous United States. The study found that more than 1,100 counties will face higher risks of water shortages by mid-century as a result of climate change. Two of the principal reasons for the projected water constraints are shifts in precipitation and potential evapotranspiration (PET). Climate models project decreases in precipitation in many regions of the U.S., including areas that may currently be described as experiencing water shortages of some degree.

The Natural Resources Defense Council developed a new water supply sustainability index. The risk to water sustainability is based on the following criteria:

- Projected water demand as a share of available precipitation

-
- Groundwater use as a share of projected available precipitation
 - Susceptibility to drought
 - Projected increase in freshwater withdrawals
 - Projected increase in summer water deficit

The risk to water sustainability for counties meeting two of the criteria are classified as “moderate,” while those meeting three of the criteria are classified as “high,” and those meeting four or more are classified as “extreme.” Counties meeting less than two criteria are considered to have low risk to water sustainability. According to the Natural Resources Defense Council, without climate change the water supply sustainability index for Taney County is low. With climate change, the water supply sustainability index increases to moderate (NRDC).

Hazard Summary by Jurisdiction

Although the probability of drought is the same for the entire county, farming and livestock enterprises in the unincorporated parts of the county would feel the greatest impact. Although communities with wells are susceptible to water shortages due to groundwater reduction, other communities with no source are more at risk to extreme water shortages in the event of a drought. School districts would be the least impacted by drought; however, those districts in communities with single source wells or none at all may experience water shortages prior to those in larger communities. Special districts such as the Central Taney County Fire District, Western Taney County Fire District, and Taney County Regional Sewer District would feel impacts in the form of increased risk for wildfire, reduced fire-fighting water sources, and low water levels that could limit the amount of effluent from waste water treatment plants.

Problem Statement

Although drought most likely will not cause structural damage, the impact is greatest on the agriculture sector and if persistent enough, could cause reductions in groundwater and water shortages in communities that provide potable water services. Potential actions to mitigate the impact of drought would be for communities to develop public information campaigns regarding water conservation techniques and measures, and provide notification mechanisms for community members to know when drought conditions may occur. Some methods may include restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc. during extreme drought periods. School and special districts can also implement water conservation measures at all district facilities as well.

3.4.3 Earthquakes

Some specific sources for this hazard are:

- U.S. Seismic Hazard Map, United States Geological Survey, http://earthquake.usgs.gov/hazards/products/conterminous/2014/HazardMap2014_lg.jpg;
- 6.5 Richter Magnitude Earthquake Scenario, New Madrid Fault Zone map, <http://www.igsb.uiowa.edu/Browse/quakes/quakes.htm>;
- Probability of magnitude 5.0 or greater within 100 Years, United States Geological Survey, <https://geohazards.usgs.gov/eqprob/2009/index.php>

Hazard Profile

Hazard Description

An earthquake is a sudden motion or trembling that is caused by a release of energy accumulated within or along the edge of the earth's tectonic plates. Earthquakes occur primarily along fault zones and tears in the earth's crust. Along these faults and tears in the crust, stresses can build until one side of the fault slips, generating compressive and shear energy that produces the shaking and damage to the built environment. Heaviest damage generally occurs nearest the earthquake epicenter, which is that point on the earth's surface directly above the point of fault movement. The composition of geologic materials between these points is a major factor in transmitting the energy to buildings and other structures on the earth's surface.

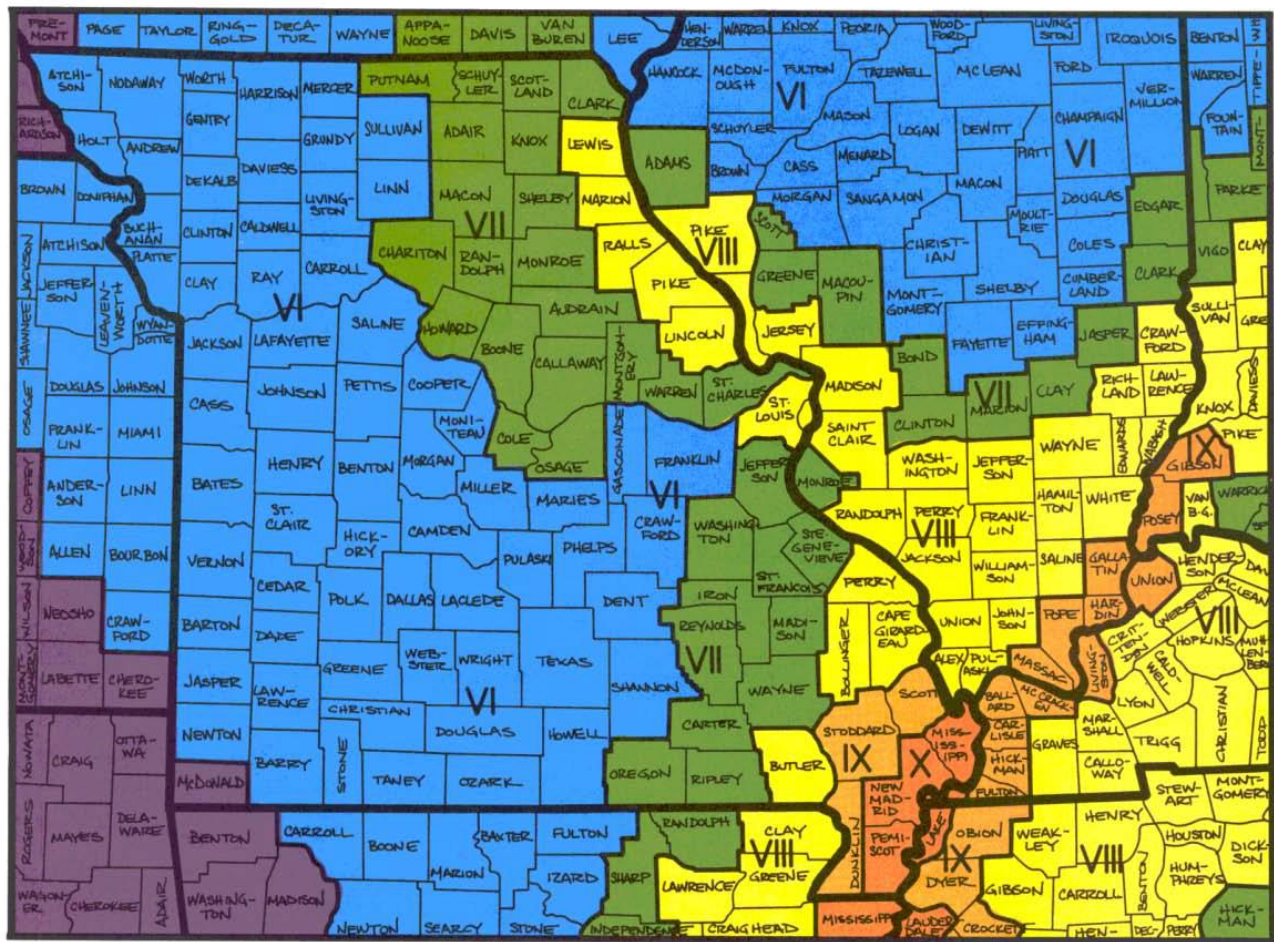
The subterranean faults were formed many millions of years ago on or near the surface of the earth. Subsequent to that time, these ancient faults subsided, while the areas adjacent were pushed up. As this fault zone (also known as a rift) lowered, sediments filled in the lower areas. Under pressure, the sediments hardened into limestones, sandstones, and shales – thus burying the rifts. The pressures on the North American plate and the movements along the San Andreas Fault by the Pacific plate have reactivated the buried rift(s) in the Mississippi embayment. This rift system is called the Reelfoot Rift and underlies the New Madrid Seismic Zone (Braile et al., 1986).

Geographic Location

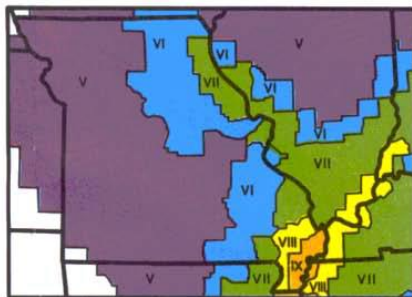
The greatest hazard from earthquakes in Taney County comes from the New Madrid Seismic Zone situated in the boot heel area of southeast Missouri. The potential of high magnitude earthquakes occurring along the New Madrid fault presents risk that does not vary across Taney County. The Nemaha uplift in central Kansas is also prone to seismic activity; however, the center of the Humbolt fault zone near the Nemaha Uplift is approximately 240 to 260 miles west of Taney County and produces lower magnitude seismic events.

Figure 3.15 shows the highest projected Modified Mercalli intensities by county from a potential magnitude 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid Seismic Zone. The secondary maps in **Figure 3.15** on show the same regional intensities for 6.7 and 8.6 earthquakes, respectively. Taney County is located in zone VI from a potential magnitude 7.6 earthquake along the New Madrid fault. Residents would feel movement, there could be minimal damage to structures, and dishes and glassware would likely be broken.

Figure 3.15. Impact Zones for Earthquake Along the New Madrid Fault

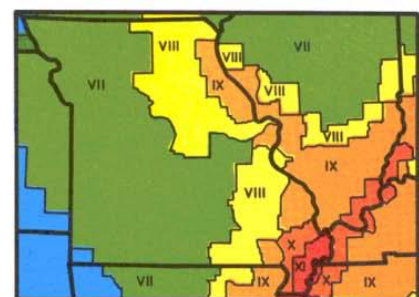


This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.



This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 6.7 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.

This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 8.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.

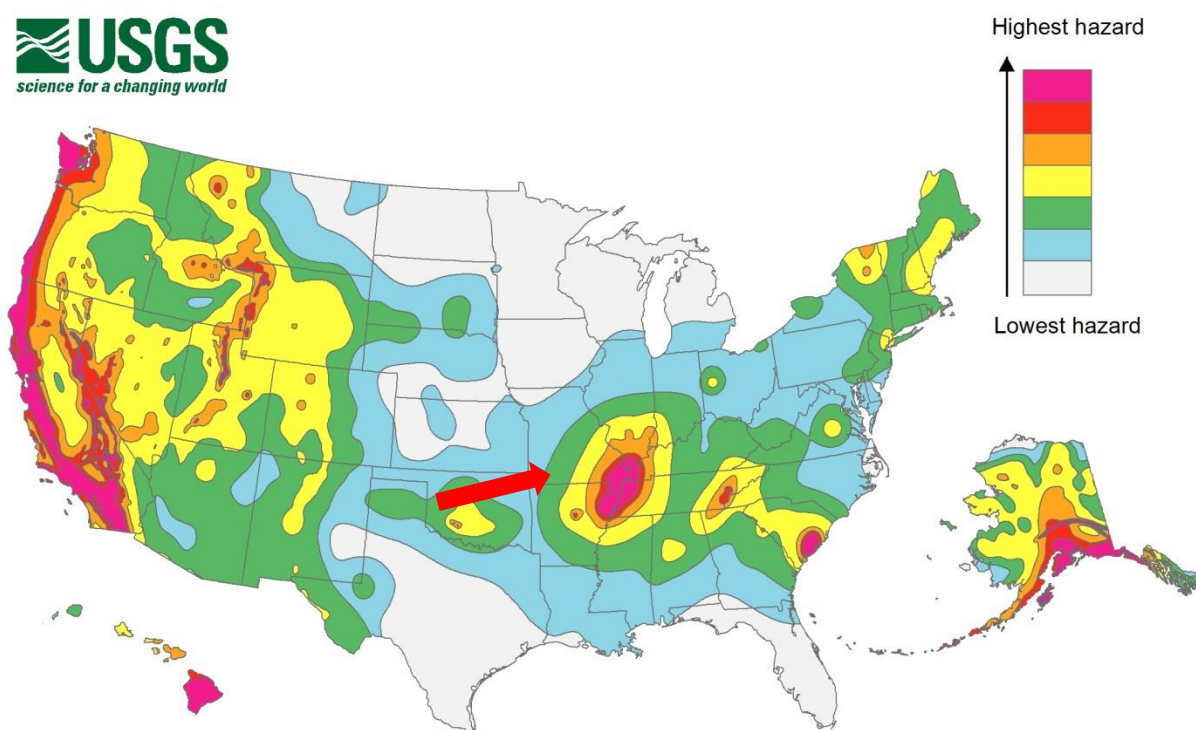


Source: SEMA, http://sema.dps.mo.gov/docs/EQ_Map.pdf

The 2014 USGS National Seismic Hazard Maps display earthquake ground motions for various probability levels across the United States and are applied in seismic provisions of building codes, insurance rate structures, risk assessments, and other public policy. The updated maps represent an assessment of the best available science in earthquake hazards and incorporate new findings on earthquake ground shaking, faults, seismicity, and geodesy. The USGS National Seismic Hazard Mapping Project developed these maps by incorporating information on potential earthquakes and associated ground shaking obtained from interaction in science and engineering workshops involving hundreds of participants, review by several science organizations and State surveys, and advice from expert panels and a Steering Committee.

Figure 3.16 is a USGS map illustrating seismicity in the United States. A red arrow showing the location of Taney County has been inserted on the map.

Figure 3.16. United States Seismic Hazard Map



Source: United States Geological Survey at http://earthquake.usgs.gov/hazards/products/conterminous/2014/HazardMap2014_lg.jpg

Severity/Magnitude/Extent

The extent or severity of earthquakes is generally measured in two ways: 1) the Richter Magnitude Scale is a measure of earthquake magnitude; and 2) the Modified Mercalli Intensity Scale is a measure of earthquake severity. The two scales are defined as follows.

Richter Magnitude Scale

The Richter Magnitude Scale was developed in 1935 as a device to compare the size of earthquakes. The magnitude of an earthquake is measured using a logarithm of the maximum extent of waves recorded by seismographs. Adjustments are made to reflect the variation in the distance between the various seismographs and the epicenter of the earthquakes. On the Richter Scale, magnitude is expressed in whole numbers and decimal fractions. For example, comparing a 5.3 and a 6.3 earthquake shows that the 6.3 quake is ten times bigger in magnitude. Each whole number increase in magnitude represents a tenfold increase in measured amplitude because of the logarithm. Each whole number step in the magnitude scale represents a release of approximately 31 times more energy.

Modified Mercalli Intensity Scale

The intensity of an earthquake is measured by the effect of the earthquake on the earth's surface. The intensity scale is based on the responses to the quake, such as people awakening, movement of furniture, damage to chimneys, etc. The intensity scale currently used in the United States is the Modified Mercalli (MM) Intensity Scale. It was developed in 1931 and is composed of 12 increasing levels of intensity. They range from imperceptible shaking to catastrophic destruction, and each of the twelve levels is denoted by a Roman numeral. The scale does not have a mathematical basis, but is based on observed effects. Its use gives the laymen a more meaningful idea of the severity.

Table 3.20. Modified Mercalli Intensity Scale

Intensity Level	Description
I	People do not feel any movement.
II	A few people might notice movement.
III	Many people indoors feel movement; Hanging objects swing.
IV	Most people indoors feel movement; Dishes, windows, and doors rattle; Walls, frames and structures creak; Liquids in open vessels are slightly disturbed; Parked cars rocked.
V	Almost everyone feels movement. Most people are awakened; Doors swing open or closed; Dishes are broken; Pictures on the wall move; Windows crack in some cases; Small objects move or are turned over; Liquids might spill out of open containers.
VI	Everyone feels movement; Poorly built buildings are damaged slightly; Considerable quantities of dishes, glassware and windows are broken; People have trouble walking; Pictures fall off walls; Objects fall from shelves; Plaster in walls might crack; Some furniture is overturned; Small bells in churches, chapels, and schools ring.
VII	People have difficulty standing; Considerable damage in poorly built or badly designed buildings, adobe houses, old walls, and spires; Damage is slight to moderate in well-built buildings; Numerous windows are broken; Weak chimneys break at rooflines; Cornices from towers and high buildings fall; Loose bricks fall from buildings; Heavy furniture is overturned and damaged; Some sand and gravel stream banks cave in.

VIII	Drivers have trouble steering; Poorly built structures suffer severe damage; Ordinary substantial buildings partially collapse; Damage slight in structures especially built to withstand earthquakes; Tree branches break; Houses not bolted down may shift on foundations; Tall structures such as towers and might chimneys twist and fall; Temporary or permanent changes in springs and wells; Sand and mud is ejected.
IX	Most buildings suffer damage; Houses not bolted down move off their foundations; Some underground pipes are broken; The ground cracks conspicuously; Reservoirs suffer damage.
X	Well-built wooden structures destroyed; most masonry and frame structures destroyed, including foundations; Rails bent; Dams seriously damaged; Cracks open in pavement.
XI	Few, if any masonry structures remain standing; Large well-built bridges destroyed; Rails bent greatly; Buried pipelines are rendered completely useless. Water mixed with sand and mud ejected in large amounts.
XII	Damage total, nearly all works of construction damaged greatly or destroyed; Objects thrown into the air; Large amounts of rock may move; The ground moves in waves or ripples.

Source: http://sema.dps.mo.gov/docs/EQ_Map.pdf

Previous Occurrences

There is no historical record of an earthquake occurrence within Taney County. The southeastern portion of Missouri is most susceptible to earthquakes because it overlies the New Madrid Seismic Zone. Earthquake hazards in the western part of the State also exist because of the historical earthquakes in eastern Kansas and Nebraska. No area of Missouri is immune from the danger of earthquakes. Minor, but potentially damaging, earthquakes can occur anywhere in the state (SEMA, 2013).

It should be noted that planning committee members reported having felt small earthquakes in the recent past, with most originating in northern Arkansas or Oklahoma. What the cause of these small tremors is not necessarily known, but some reports attributing the cause to wastewater disposal wells. These events did not result in any known significant damage, but were thought to have caused some pipes to shift in a Taney County Regional Sewer District facility.

Probability of Future Occurrence

Without a definite historical record for earthquakes in Taney County it is not possible to calculate a precise probability of earthquake occurrence. The Center for Earthquake Research and Information (CERI) at the University of Memphis has computed conditional probabilities of a magnitude 6.0 earthquake in the New Madrid seismic zone. According to a fact sheet prepared by SEMA in 2003, the probability for a magnitude 6.0 to 7.5 or greater earthquake along the New Madrid Fault is 25 to 40 percent over the next 50 years. At the 25% level, the likelihood of an earthquake happening in a given year is 1.0%. At the 40% level, the likelihood of an earthquake happening in a given year is 1.6%. The previous map indicates the potential severity for Taney County of a 6.7, 7.6, and 8.6 magnitude earthquake anywhere along the New Madrid fault.

Based on verbal accounts of small scale tremors, it is likely that parts of Taney County may experience some shaking or limited earthquake type events on a more regular basis that has been seen in the past. At least two occurrences were referenced during discussions. Based on the recent timing of these events, it may be inferred that a small event could be experienced as often as annually.

Vulnerability

Vulnerability Overview

Ground shaking is the most damaging effect from earthquakes. Ground shaking will impact all structures and critical infrastructure such as roads and electrical transmission systems. The greatest and most impactful earthquake risk to Taney County is the New Madrid fault in the boot-heel region of Missouri. A 7.6 magnitude earthquake would result in poorly built buildings damaged slightly; considerable quantities of dishes, glassware and windows are broken; people having trouble walking; pictures falling off walls; objects falling from shelves; plaster in walls cracking; and furniture overturned. Damage to structures will occur but will vary on the quality of construction. In addition, some underground utilities may be damaged. Some injuries may occur but fatalities are unlikely.

Potential Losses to Existing Development

Potential losses to existing development include the total exposure for all communities listed in Table 3.3 and Table 3.6 in the Assets at Risk section of this chapter. The total exposure of each jurisdiction was used to estimate losses due to a 7.6 earthquake along the New Madrid Fault. A damage factor of 0.5% was applied to each jurisdiction's total building and contents based on the expected impact for Zone VI on the modified Mercalli scale. **Table 3.21** depicts the estimated losses in each jurisdiction based on total exposure and a 0.5% damage factor.

Table 3.21. Estimated Potential Earthquake Losses

Jurisdiction	Potential Earthquake Losses
Branson	\$4,550,079
Forsyth	\$200,058
Hollister	\$318,171
Merriam Woods	\$36,800
Rockaway Beach	\$47,530
Bull Creek	\$8,889
Saddlebrooke	\$51,651
Unincorporated	\$7,604,584

Impact of Previous and Future Development

Previous development that may have been constructed without adherence to building codes may be at a greater risk of damage during an event. Future development is not expected to increase the risk other than contributing to the overall exposure of what could become damaged as a result of an event.

Hazard Summary by Jurisdiction

Earthquake intensity is not likely to vary greatly throughout the planning area; the risk of occurrence is the same throughout. However, damages will differ where there are variations in the planning area based on percentage of structures built prior to 1939. For example, if one community has a higher percentage of residences built prior to 1939 than the other jurisdictions, that community is likely to experience higher damages. **Table 3.22** with the number and percentage of housing units built in 1939 or earlier.

Table 3.22. Percent of Housing Units Built in 1939 or Earlier

Jurisdiction	Built 1939 or earlier #	Built 1939 or earlier %
Taney County	734	2.4%
City of Branson	120	1.3%
City of Forsyth	59	5.6%
City of Hollister	28	1.3%
City of Merriam Woods	5	0.6%
City of Rockaway Beach	28	5.5%
Village of Bull Creek	0	0.0%
Village of Kirbyville	2	2.0%
Village of Taneyville	19	11.7%

Source: U.S. Census Bureau; 2011-2015 American Community Survey 5-Year Estimates

Problem Statement

Based on likely damage from a 7.6 magnitude earthquake along the New Madrid fault, older poorly built structures will suffer slight damage. The Village of Taneyville has the highest percentages of houses built before 1939, with Rockaway Beach having the second highest percentage. These jurisdictions would likely experience the most damage to structures. Potential damages to future development can be mitigated by adopting and enforcing at least IBC 2012 building codes. Most incorporated communities in Taney County have building codes. Unincorporated Taney County does not currently have building codes. Updating and enforcing building codes throughout Taney County would mitigate the impact on future development from an earthquake event.

3.4.4 Extreme Heat

Some specific sources for this hazard are:

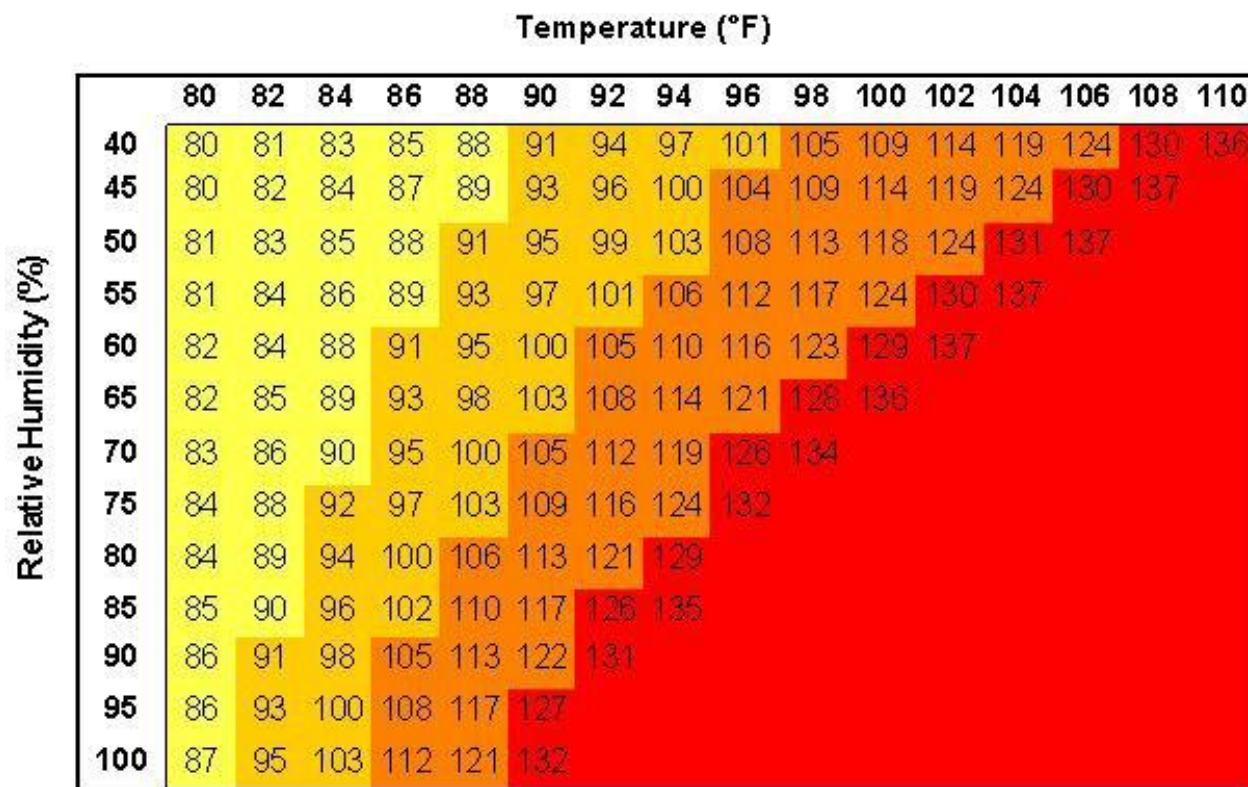
- National Climatic Data Center, Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>
- Heat Index Chart & typical health impacts from heat, National Weather Service; National Weather Service Heat Index Program, www.weather.gov/os/heat/index.shtml ;
- Daily temperatures averages and extremes, High Plains Regional Climate Summary, [http://www.hprcc.unl.edu/data/historical/index.php?state=ia&action=select_state&submit=Select+State](http://www.hprcc.unl.edu/data/historical/index.php?state=ia&action=select_state&submit=Select+State;);
- Hyperthermia mortality, Missouri; Missouri Department of Health and Senior Service, <http://health.mo.gov/living/healthcondiseases/hyperthermia/pdf/hyper1.pdf>;
- Hyperthermia mortality by Geographic area, Missouri Department of Health and Senior Services, <http://health.mo.gov/living/healthcondiseases/hyperthermia/pdf/hyper2.pdf>;

Hazard Profile

Hazard Description

Extreme temperature events, both hot and cold, can impact human health and mortality, natural ecosystems, agriculture and other economic sectors. The remainder of this section profiles extreme heat. Extreme cold events are profiled in combination with Winter Storm in **Section 3.4.10**. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Ambient air temperature is one component of heat conditions, with relative humidity being the other. The relationship of these factors creates what is known as the apparent temperature. The Heat Index chart shown in **Figure 3.177** uses both of these factors to produce a guide for the apparent temperature or relative intensity of heat conditions.

Figure 3.17. Heat Index (HI) Chart



Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

■ Caution
 ■ Extreme Caution
 ■ Danger
 ■ Extreme Danger

Source: National Weather Service (NWS)

Note: Exposure to direct sun can increase Heat Index values by as much as 15°F. The shaded zone above 105°F corresponds to a HI that may cause increasingly severe heat disorders with continued exposure and/or physical activity.

Geographic Location

Extreme heat is an area-wide hazard event, and the risk of extreme heat does not vary across Taney County.

Severity/Magnitude/Extent

Extreme heat can cause stress to crops and animals. According to USDA Risk Management Agency, losses to insurable crops during the 10-year time period from 2007 to 2016 were \$0. Extreme heat can also strain electricity delivery infrastructure overloaded during peak use of air conditioning during extreme heat events. Another type of infrastructure damage from extreme heat is road damage. When asphalt is exposed to prolonged extreme heat, it can cause buckling of asphalt-paved roads, driveways, and parking lots.

From 1988-2011, there were 3,496 fatalities in the U.S. attributed to summer heat. This translates to an annual national average of 146 deaths. During the same period, 0 deaths were recorded in Taney County, according to NCDC data. The National Weather Service stated that among natural hazards, no other natural disaster—not lightning, hurricanes, tornadoes, floods, or earthquakes—causes more

deaths.

Those at greatest risk for heat-related illness include infants and children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. However, even young and healthy individuals are susceptible if they participate in strenuous physical activities during hot weather. In agricultural areas, the exposure of farm workers, as well as livestock, to extreme temperatures is a major concern.

Table 3.23 lists typical symptoms and health impacts due to exposure to extreme heat.

Table 3.23. Typical Health Impacts of Extreme Heat

Heat Index (HI)	Disorder
80-90° F (HI)	Fatigue possible with prolonged exposure and/or physical activity
90-105° F (HI)	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity
105-130° F (HI)	Heatstroke/sunstroke highly likely with continued exposure

Source: National Weather Service Heat Index Program, www.weather.gov/os/heat/index.shtml

The National Weather Service has an alert system in place (advisories or warnings) when the Heat Index is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. A common guideline for issuing excessive heat alerts is when for two or more consecutive days: (1) when the maximum daytime Heat Index is expected to equal or exceed 105 degrees Fahrenheit (°F); and the night time minimum Heat Index is 80°F or above. A heat advisory is issued when temperatures reach 105 degrees and a warning is issued at 115 degrees.

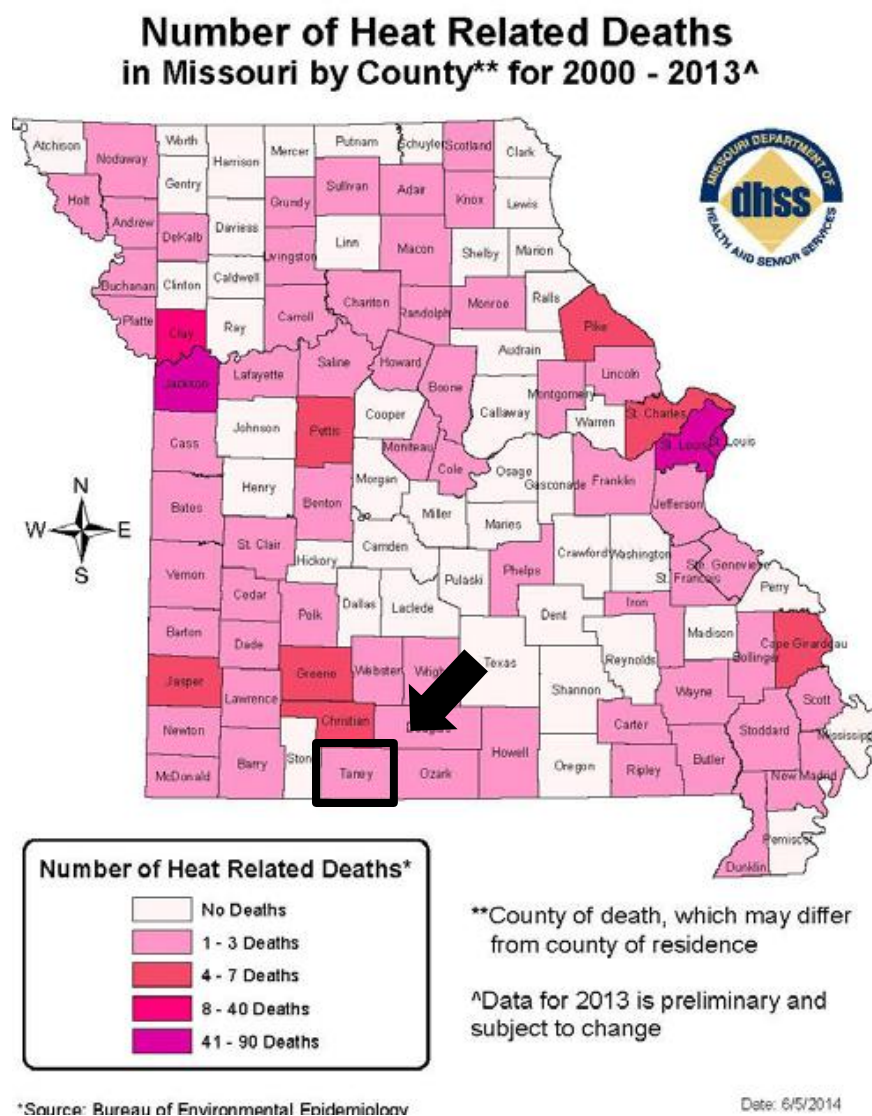
Previous Occurrences

There were nine (9) recorded extreme heat events recorded in the National Climatic Data Center (NCDC) database from 1998 to 2017 for Taney County. There were zero reported deaths and no injuries or property and crop damage associated with these events in the NCDC data for Taney County. The event narratives describe fatalities that occurred during regional multi-county heat events for other nearby counties. Extreme heat events in Taney County were recorded in consecutive months in four separate years from 1996 to 2015. The months for each year are summarized as follows:

- **1999** – July & August
- **2000** – August & September
- **2001** – July & August
- **2012** – June, July & August

Figure 3.18 is a map created by The Missouri Department of Health and Senior Services (DHSS) for heat related fatalities by county. The map indicates that there have been between one (1) and three (3) heat related fatalities in Taney County from 2000 to 2013.

Figure 3.18. Heat Related Deaths in Missouri 2000 - 2013



Probability of Future Occurrence

Since there were four years with extreme heat events in a 20-year span, the probability that an extreme heat event will occur in Taney County in any given year is 20%, or once every four years.

The events recorded in the NCDC database describe prolonged periods where temperatures rose above at least 90° for at least 12 consecutive days. Heat advisories and warnings are issued for shorter periods of extreme heat nearly every year and may not meet the threshold for consecutive days in the NCDC database. It is possible that the heat related fatalities reported by DHSS (as shown in Figure 3.13) occurred during a shorter period of extreme heat and would not be recorded in the NCDC database. This data limitation indicates that extreme heat events could be underreported in the NCDC.

Vulnerability

Vulnerability Overview

High humidity, which often accompanies heat in Missouri, can make the effects of heat even more harmful. While heat-related illness and death can occur from exposure to intense heat in just one afternoon, heat stress on the body has a cumulative effect. Consequently, the persistence of a heat wave increases the threat to public health. The people most at risk are children under five years of age and adults over the age of 65, as well as people who work outdoors. The agriculture sector can also suffer crop loss during periods of extreme heat. Extreme heat may also cause buckling of roads.

Potential Losses to Existing Development

Based on information in the 2013 Plan and DHSS, one to three heat related deaths may occur within Taney County over the next 13 years.

Impact of Previous and Future Development

Population growth can result in increases in the age-groups that are most vulnerable to extreme heat. Population growth also increases the strain on electricity infrastructure, as more electricity is needed to accommodate the growing population. Branson and Hollister have the largest populations under 5 years of age and over 65. Taney County, as a whole, has experienced a high rate of population growth in the last 15 years and may continue increase in the future.

Impact of Climate Change

With rising global temperatures, it is likely that extreme heat events may become more frequent or more severe. This hazard should be monitored over the upcoming years and any new or increased impacts on Taney County communities will be referenced in future plan updates.

Hazard Summary by Jurisdiction

Those at greatest risk for heat-related illness and deaths include children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. To determine jurisdictions within Taney County with populations more vulnerable to extreme heat, demographic data was obtained from the 2015 American Community Survey on population percentages in each jurisdiction comprised of those under age 5 and over age 65. Data was not available for overweight individuals and those on medications vulnerable to extreme heat.

Table 3.24 below summarizes vulnerable populations in the participating jurisdictions. Note that school and special districts are not included in the table because students and those working for the special districts are not customarily in these age groups.

Table 3.24. Taney County Population Under Age 5 and Over Age 65, 2010 Census Data

Jurisdiction	Population Under 5 years	Population 65 years and over
Taney County	3,286	10,249
City of Branson	532	2,272
City of Forsyth	54	658
City of Hollister	422	817
City of Merriam Woods	138	230
City of Rockaway Beach	52	121
Village of Bull Creek	83	13
Village of Saddlebrooke	7	62

Source: U.S. Census Bureau, American Community Survey 2015. (*) includes entire population of each city or county

All schools in the planning area have proper air-conditioning and all follow proper procedures in the event of extreme heat. However, daycare and eldercare facilities may be at risk of heat related injuries if facilities are not properly cooled.

Problem Statement

Older and younger segments of the population are more vulnerable to the impact of extreme heat. In addition people living below the poverty level may be more vulnerable during periods of extreme heat due to a lack of air conditioning or utilities in their homes. Institutionalized populations, such as those living in nursing homes, become more vulnerable to extreme heat due to power outages. The cities of Forsyth and Hollister identified nursing homes and daycare centers as critical community facilities, which can increase the potential impact of extreme heat events.

To help reduce the risk of death, heating and cooling centers should be promoted and known to the public, especially to those who have young children or are over the age of 65. Partnering with local community organizations to continue to donate fans and offer weatherization programs would mitigate the impact on vulnerable populations in the county.

3.4.5 Wildfire

The specific sources for this hazard are:

- Missouri Department of Conservation Wildfire Data Search at <http://mdc7.mdc.mo.gov/applications/FireReporting/Report.aspx>
- Statistics, Missouri Division of Fire Safety;
- National Statistics, US Fire Administration;
- Fire/Rescue Mutual Aid Regions in Missouri;
- Forestry Division of the Missouri Dept of Conservation;
- University of Wisconsin Slivis Lab, http://silvis.forest.wisc.edu/maps/wui_main

Hazard Profile

Hazard Description

The fire incident types for wildfires include: 1) natural vegetation fire, 2) outside rubbish fire, 3) special outside fire, and 4) cultivated vegetation, crop fire.

The Missouri Division of Fire Safety (MDFS) indicates that approximately 80 percent of the fire departments in Missouri are staffed with volunteers. Whether paid or volunteer, these departments are often limited by lack of resources and financial assistance.

The Forestry Division of the Missouri Department of Conservation (MDC) is responsible for protecting privately owned and state-owned forests and grasslands from wildfires. To accomplish this task, eight forestry regions have been established in Missouri for fire suppression. The Forestry Division works closely with volunteer fire departments and federal partners to assist with fire suppression activities. Currently, more than 900 rural fire departments in Missouri have mutual aid agreements with the Forestry Division to obtain assistance in wildfire protection if needed.

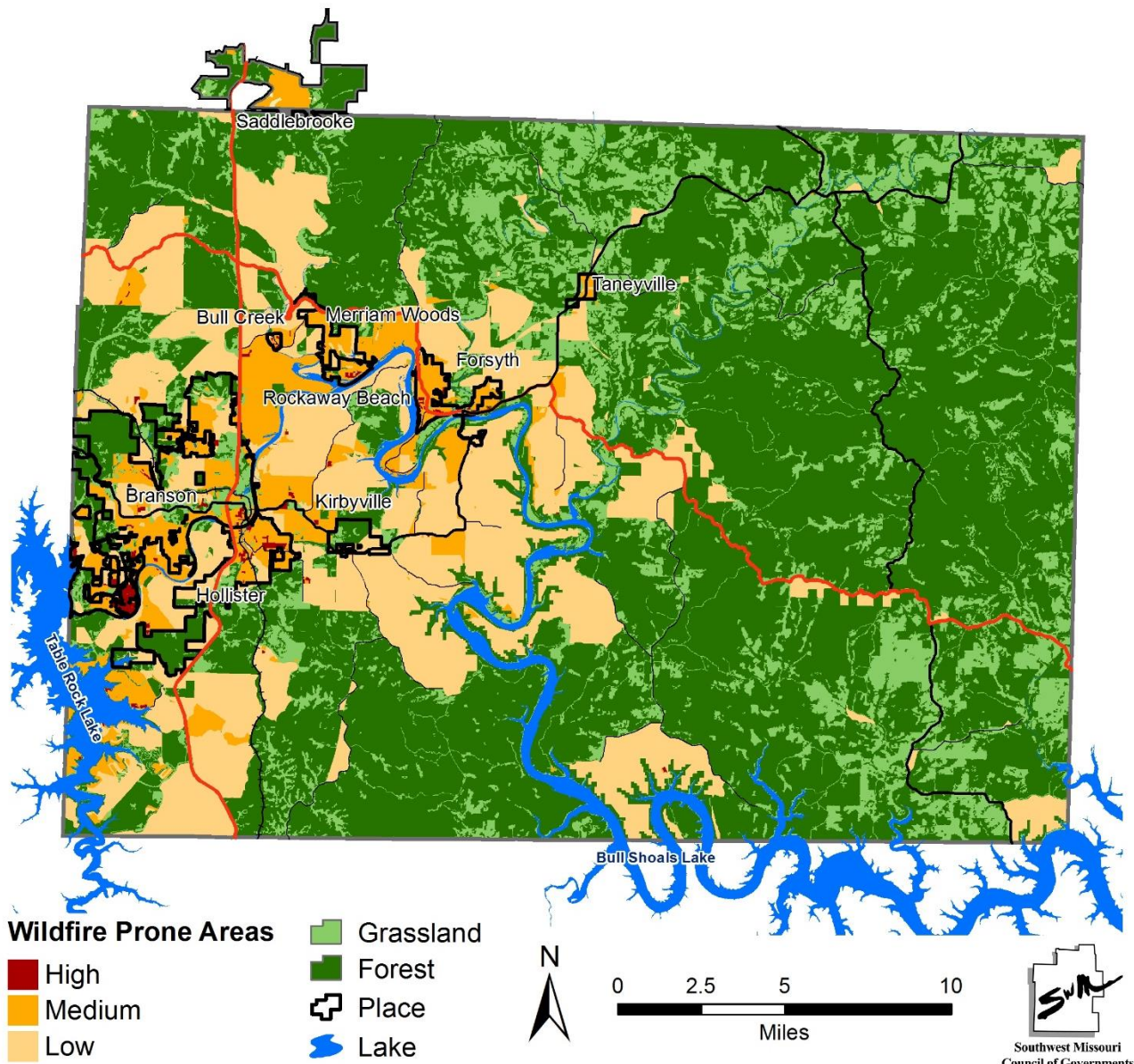
Most of Missouri fires occur during the spring season between February and May. The length and severity of both structural and wildland fires depend largely on weather conditions. Spring in Missouri is usually characterized by low humidity and high winds. These conditions result in higher fire danger. In addition, due to the recent lack of moisture throughout many areas of the state, conditions are likely to increase the risk of wildfires. Drought conditions can also hamper firefighting efforts, as decreasing water supplies may not prove adequate for firefighting. It is common for rural residents burn their garden spots, brush piles, and other areas in the spring. Some landowners also believe it is necessary to burn their forests in the spring to promote grass growth, kill ticks, and reduce brush. Therefore, spring months are the most dangerous for wildfires. The second most critical period of the year is fall. Depending on the weather conditions, a sizeable number of fires may occur between mid-October and late November.

Geographic Location

Damages due to wildfires would be higher in communities with more wildland–urban interface (WUI) areas. The term refers to the zone of transition between unoccupied land and human development and needs to be defined in the plan. Within the WUI, there are two specific areas identified: 1) Interface and 2) Intermix. The interface areas are those areas that abut wildland vegetation and the Intermix

areas are those areas that intermingle with wildland areas. Each of the communities in Taney County have some risk of wildfire; Branson and Hollister have the largest areas of wildfire prone area, and also the largest exposure since they are the largest cities with the most development and structures at risk. **Figure 3.19** shows the Wildland/Urban Intermix areas in Taney County.

Figure 3.19. Taney County Wildland Intermix and Wildfire Prone Areas



Severity/Magnitude/Extent

Wildfires damage the environment, killing some plants and occasionally animals. Firefighters have been injured or killed, and structures can be damaged or destroyed. The loss of plants can heighten the risk of soil erosion and landslides. Although Missouri wildfires are not the size and intensity of those in the Western United States, they could impact recreation and tourism in and near the fires.

Wildland fires in Missouri have been mostly a result of human activity rather than lightning or some other natural event. Wildfires in Missouri are usually surface fires, burning the dead leaves on the ground or dried grasses. They do sometimes “torch” or “crown” out in certain dense evergreen stands like eastern red cedar and shortleaf pine. However, Missouri does not have the extensive stands of evergreens found in the western US that fuel the large fire storms seen on television news stories.

While very unusual, crown fires can and do occur in Missouri native hardwood forests during prolonged periods of drought combined with extreme heat, low relative humidity, and high wind. Tornadoes, high winds, wet snow and ice storms in recent years have placed a large amount of woody material on the forest floor that causes wildfires to burn hotter and longer. These conditions also make it more difficult for fire fighters suppress fires safely.

Often wildfires in Missouri go unnoticed by the general public because the sensational fire behavior that captures the attention of television viewers is rare in the state. Yet, from the standpoint of destroying homes and other property, Missouri wildfires can be quite destructive.

The most notable and severe wildfire, over the past twenty years, in Taney County occurred in April 2004 near Kirbyville. The fire burned over 1,150 acres and one structure.

Previous Occurrences

According to MDC Wildfire Data, there have been 894 wildfires reported in Taney County from 2008 to July 2017. A total of 6,944.32 acres were burned as a result of these reported wildfires. In addition, 18 buildings were destroyed which include residential, commercial, and outbuildings. 38 buildings were damaged and 427 were threatened by wildfires. **Table 3.25** contains MDC wildfire statistics by year.

Table 3.25. Taney County Wildfires 2008-2017*

Year	Number of Wildfires	Buildings Destroyed	Buildings Damaged	Buildings Threatened	Acres Burned
2008	21	0	1	69	182
2009	155	2	6	63	1108
2010	110	2	6	47	658.1
2011	125	1	8	49	1179
2012	140	1	1	61	1855
2013	88	8	3	36	394.1
2014	105	0	6	50	335.7
2015	76	1	3	31	174.41
2016	66	3	4	18	1044.16
2017*	8	0	0	3	13.85
Total	894	18	38	427	6944.32

Source: Missouri Department of Conservation, <http://mdc7.mdc.mo.gov/applications/FireReporting/Report.aspx>

* = Through July, 2017

No schools or special districts in Taney County reported any fire incidents that impacted their facilities.

Probability of Future Occurrence

There were a total of 894 reported wildfires from 2008 to 2017, with several events in each year. This equates to a 100% probability of wildfire events in Taney County in any given year, with an average of 89.4 events on average per year.

Vulnerability

Vulnerability Overview

Wildfires occur throughout wooded and open vegetation areas of Missouri. They can occur any time of the year, but mostly occur during long, dry hot spells. Any small fire, if not quickly detected and suppressed, can get out of control. Most wildfires are caused by human carelessness or negligence. However, some are precipitated by lightning strikes and in rare instances, spontaneous combustion. Structures and people in WUI areas in the county and cities are more vulnerable to the impact of wildfires due to the level of fuel mixed with structures.

Potential Losses to Existing Development

On average, 1.5 buildings are destroyed or damaged annually by wildfires in Taney County. Approximately, 45.5 structures are threatened per year and about 684 acres of land are burned on average, annually.

Impact of Previous and Future Development

It is anticipated that there will be future development in WUI areas throughout unincorporated areas of the county. Future growth in WUI areas of the county will increase the risk and exposure to wildfires. It is expected that WUI development in cities will be mitigated by development regulations reducing the risk to wildfire hazard.

Impact of Climate Change

As stated in section 3.4.2, an analysis by the Natural Resources Defense Council found that climate change may increase the risk for water shortage, thus increasing the difficulty in extinguishing wildfires. Climate change may also increase the number of extreme heat and drought days, which may increase the probability of wildfire events.

Hazard Summary by Jurisdiction

Table 3.26 summarizes the structure exposure for Taney County and cities. Structure counts and exposure values were derived by overlaying parcel data from the Taney County Assessor with the WUI data. The exposure amount indicates the dollar amount of assets at risk and the variability of vulnerability from place to place.

Table 3.26. Wildfire Structure Exposure by Jurisdiction

Jurisdiction	Residential	Commercial	Agriculture	Exposure (\$)
Branson	2,671	738	38	\$318,277,424
Forsyth	816	65	16	\$27,261,770
Hollister	1,180	95	21	\$41,701,624
Merriam Woods	826	5	11	\$9,628,120
Rockaway Beach	342	36	1	\$6,508,960
Bull Creek	61	2	4	\$2,921,910
Unincorporated County	10,082	498	1,250	\$428,957,142
Taney County Total	16,190	1,472	1,353	\$838,367,200

Source: Taney County Parcel Data; University of Wisconsin SILVIS Lab WUI Data

Problem Statement

Wildfire occurrences are very frequent within Taney County. These events can destroy, damage, and threaten structures in hazard prone areas. Populations and structures in WUI areas of the county have an increased risk to wildfires due to the level of fuel mixed with structures. **Table 3.26** indicates that of the participating incorporated jurisdictions of Taney County, Branson has the highest risk of wildfires. Cities that have adopted landscape ordinances can include fire safe landscape design requirements in these areas. Cities that have building codes or design requirements may also encourage non-combustible materials for new construction.

The unincorporated part of the county has the highest risk and exposure to wildfires. County officials and the fire department can promote fire resistant construction materials and landscape design techniques to mitigate the risk to wildfire in future development. Information about these materials and techniques are included in the MDC publication, [Living with Wildfire](#). Including this information in education and awareness programs for the public may potentially mitigate wildfire damage in the county.

3.4.6 Flooding (Flash and River)

- Watershed map, Environmental Protection Agency, http://cfpub.epa.gov/surf/county.cfm?fips_code=19169
- NFIP Community Status Book, <http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book>
- NFIP claims status, BureauNet, <http://bsa.nfipstat.fema.gov/reports/reports.html>
- Flood Insurance Administration—Repetitive Loss List (this must be requested from the State Floodplain Management agency or FEMA)
- National Climatic Data Center, Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>
- USDA Risk Management Agency, Insurance Claims, <http://www.rma.usda.gov/data/cause.htm>

Hazard Profile

Hazard Description

A flood is partial or complete inundation of normally dry land areas. Riverine flooding is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt, or ice. There are several types of riverine floods, including headwater, backwater, interior drainage, and flash flooding. Riverine flooding is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt or ice melt. The areas adjacent to rivers and stream banks that carry excess floodwater during rapid runoff are called floodplains. A floodplain is defined as the lowland and relatively flat area adjoining a river or stream. The terms “base flood” and “100- year flood” refer to the area in the floodplain that is subject to a one percent or greater chance of flooding in any given year. Floodplains are part of a larger entity called a basin, which is defined as all the land drained by a river and its branches.

Flooding caused by dam failure is discussed in **Section 3.4.1** and will not be addressed in this section.

A flash flood occurs when water levels rise at an extremely fast rate as a result of intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Flash flooding can happen in Special Flood Hazard Areas (SFHAs) as delineated by the National Flood Insurance Program (NFIP), and can also happen in areas not associated with floodplains.

Ice jam flooding is a form of flash flooding that occurs when ice breaks up in moving waterways, and then stacks on itself where channels narrow. This creates a natural dam, often causing flooding within minutes of the dam formation.

In some cases, flooding may not be directly attributable to a river, stream, or lake overflowing its banks. Rather, it may simply be the combination of excessive rainfall or snowmelt, saturated ground, and inadequate drainage. With no place to go, the water will find the lowest elevations – areas that are often not in a floodplain. This type of flooding, often referred to as sheet flooding, is becoming increasingly prevalent as development outstrips the ability of the drainage infrastructure to properly carry and disburse the water flow.

Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area. Flash flooding is a dangerous form of flooding which can reach full peak in only a few

minutes. Rapid onset allows little or no time for protective measures. Flash flood waters move at very fast speeds and can move boulders, tear out trees, scour channels, destroy buildings, and obliterate bridges. Flash flooding can result in higher loss of life, both human and animal, than slower developing river and stream flooding.

In certain areas, aging storm sewer systems are not designed to carry the capacity currently needed to handle the increased storm runoff. Typically, the result is water backing into basements, which damages mechanical systems and can create serious public health and safety concerns. This combined with rainfall trends and rainfall extremes all demonstrate the high probability, yet generally unpredictable nature of flash flooding in Taney County.

Although flash floods are somewhat unpredictable, there are factors that can point to the likelihood of flash floods occurring. Weather surveillance radar is being used to improve monitoring capabilities of intense rainfall. This, along with knowledge of the watershed characteristics, modeling techniques, monitoring, and advanced warning systems has increased the warning time for flash floods.

Geographic Location

Riverine flooding is most likely to occur in Special Flood Hazard Areas (SFHAs) where the 100-year floodplain has been mapped. Areas along Lake Taneycomo and Bull Creek, especially in the Village of Bull Creek and Branson, experience the greatest impact to riverine floods and flash floods. According to the NCDC storm event data from 1998 through July 2017, there were 19 flood events and 70 flash flood events recorded in the county. These events are typically regional in nature; however flash floods can be contained to one specific area, specifically portions of highways or roads. **Figures 3.20 through 3.27** are mapped SFHAs for communities and unincorporated areas in Taney County.

Figure 3.20. Taney County SFHAs with Critical Facilities

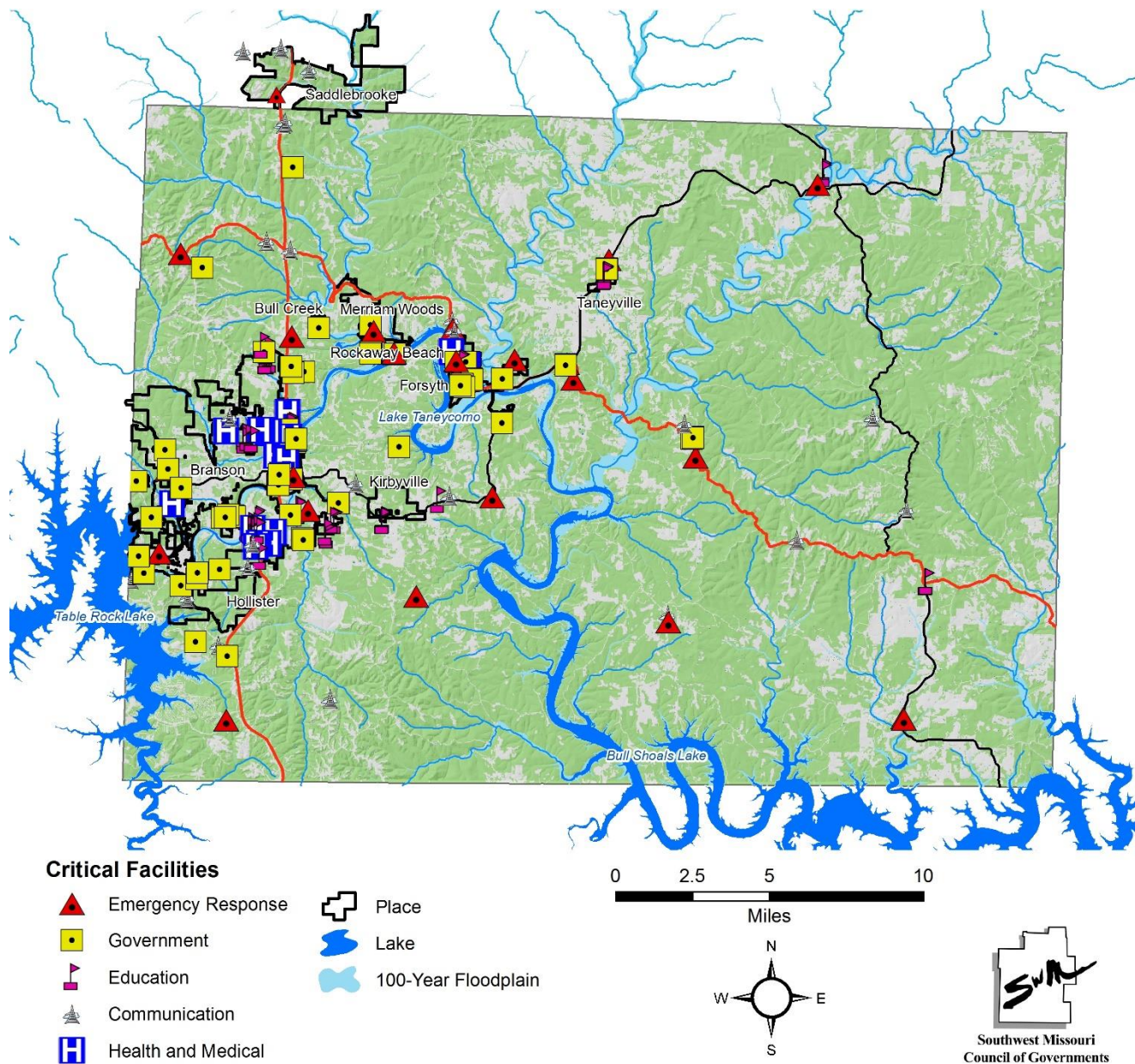


Figure 3.21. City of Branson SFHAs with Critical Facilities

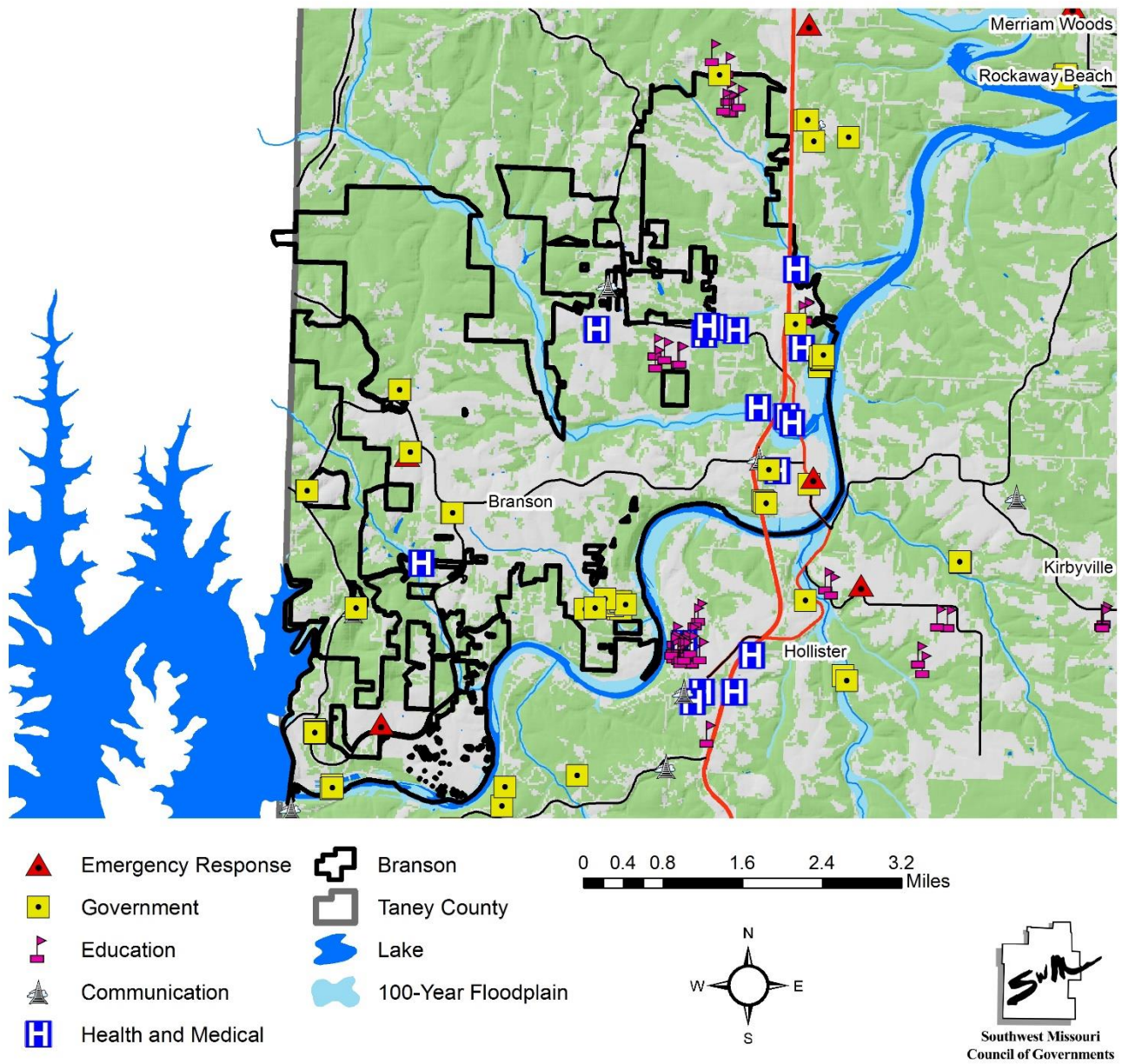


Figure 3.22. City of Forsyth SFHAs with Critical Facilities

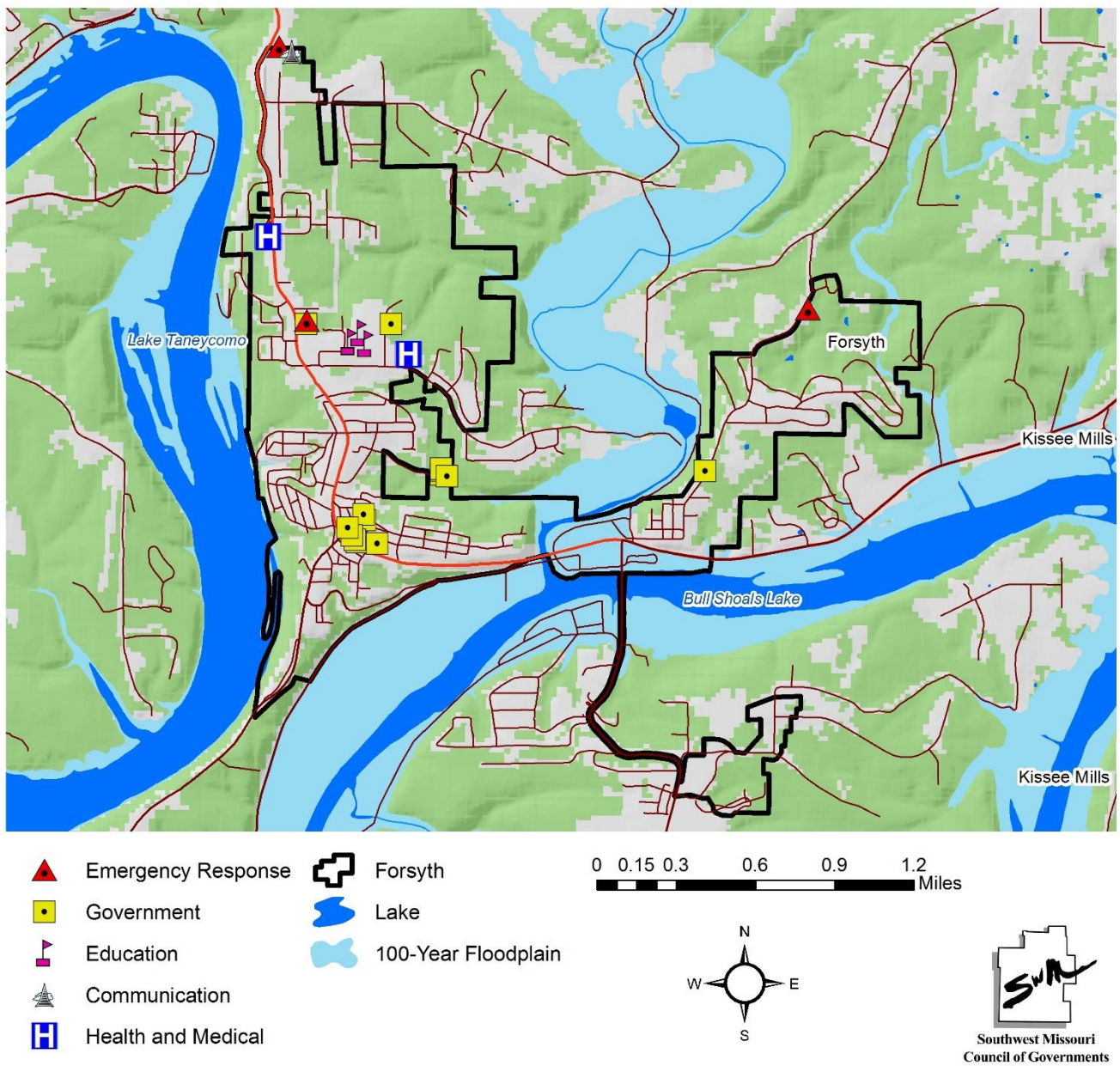


Figure 3.23. City of Hollister SFHAs with Critical Facilities

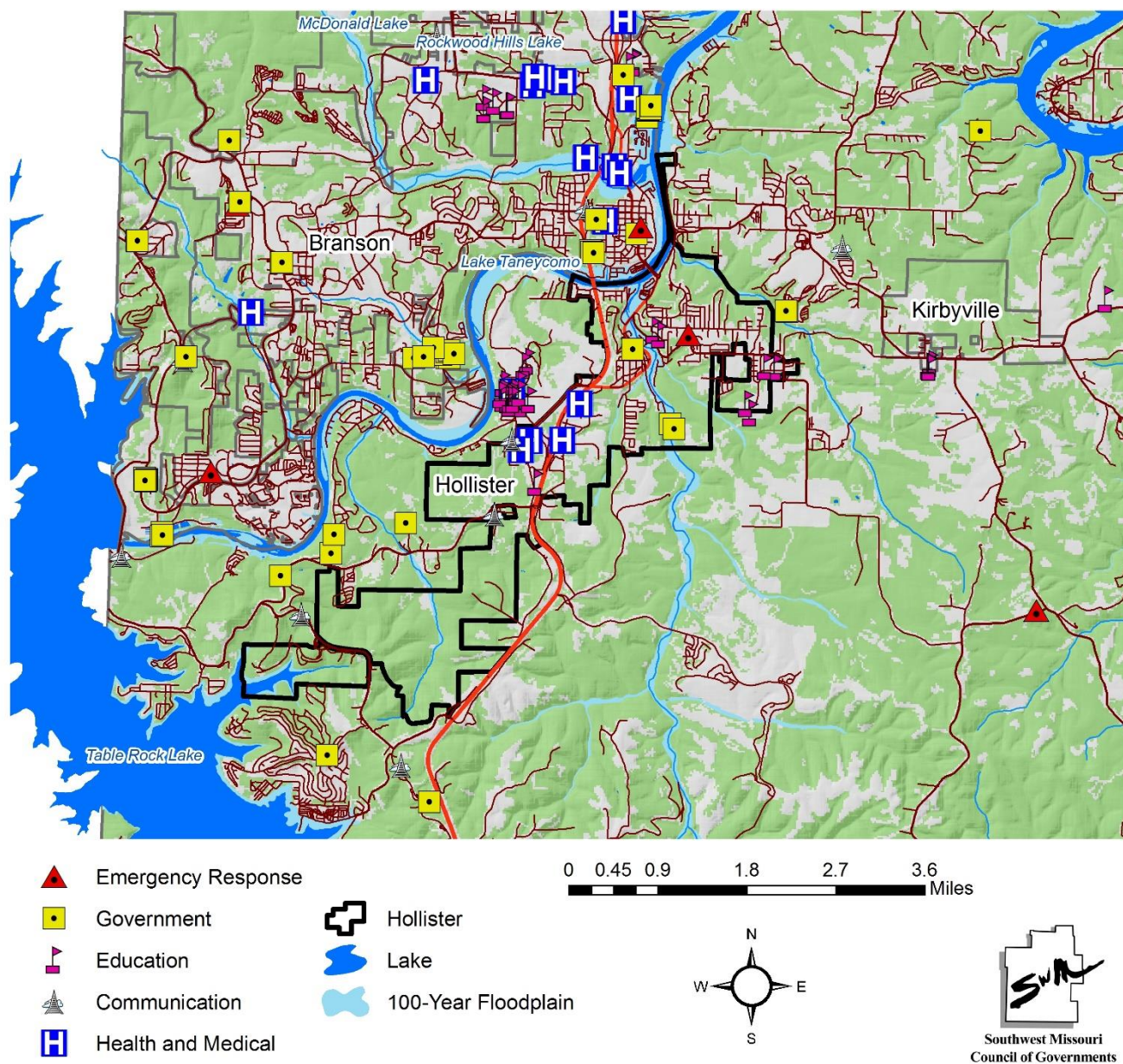


Figure 3.24. City of Merriam Woods SFHAs with Critical Facilities

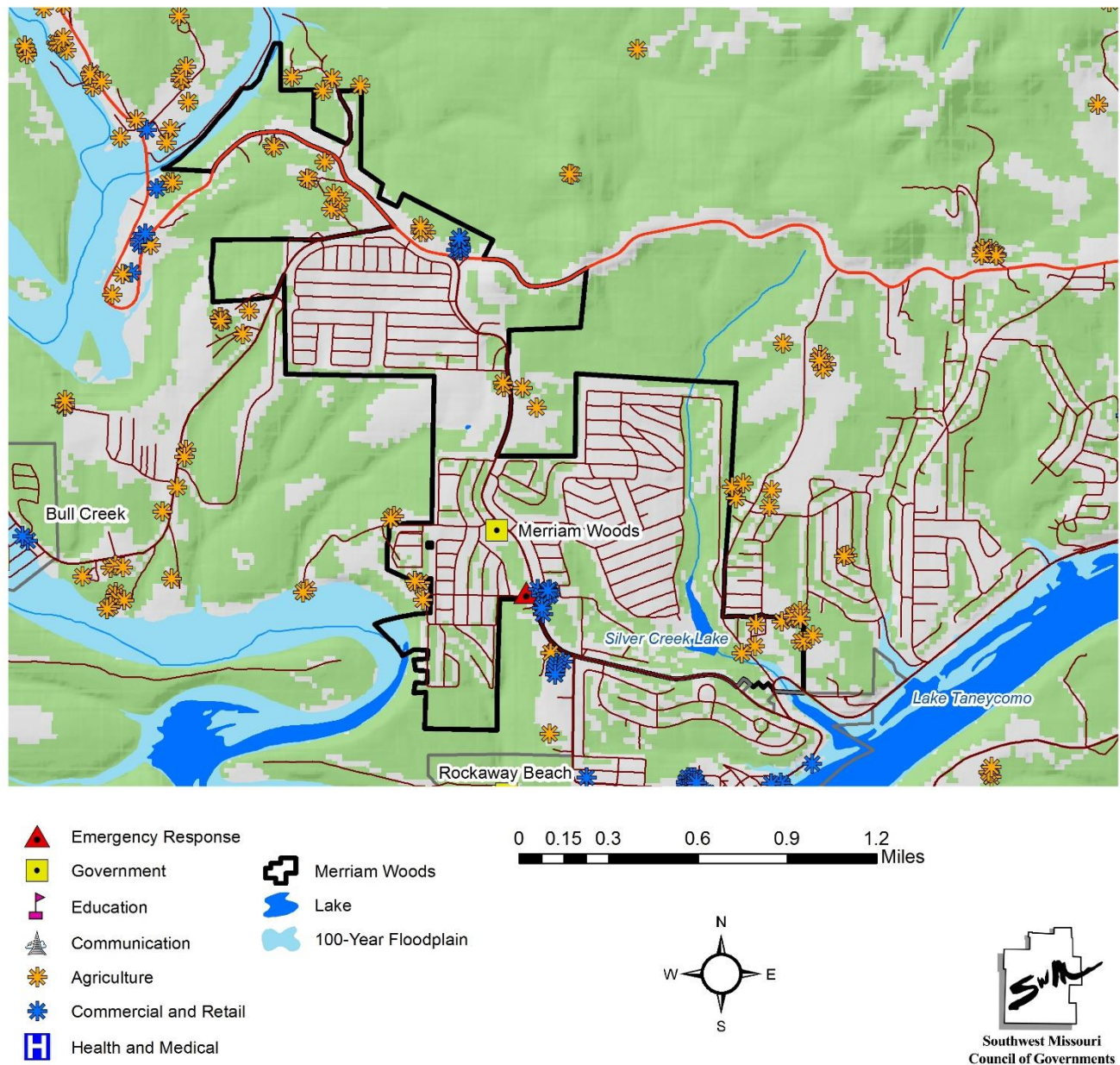


Figure 3.25. City of Rockaway Beach SFHAs with Critical Facilities

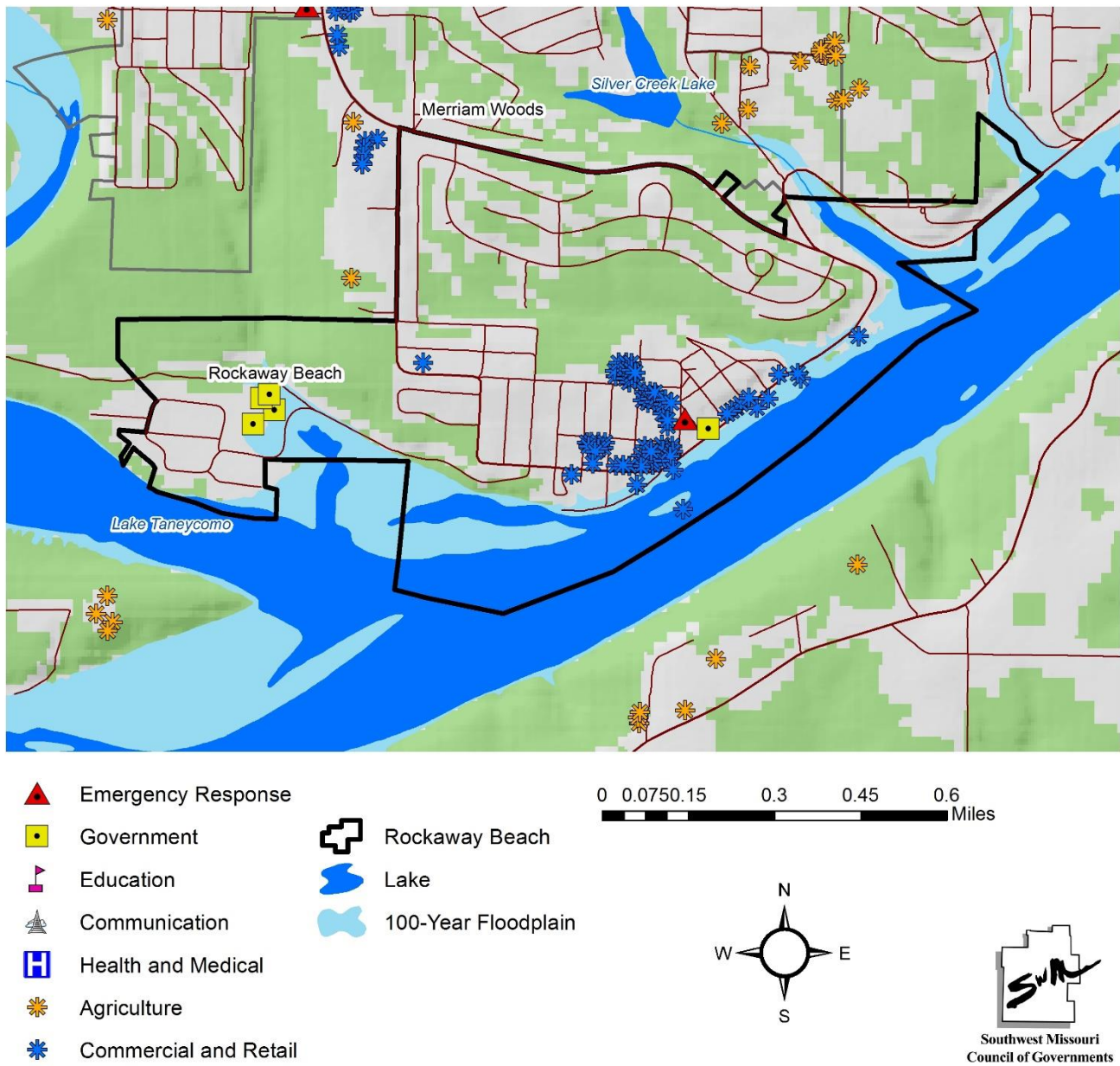


Figure 3.26. Village of Bull Creek SFHAs with Critical Facilities

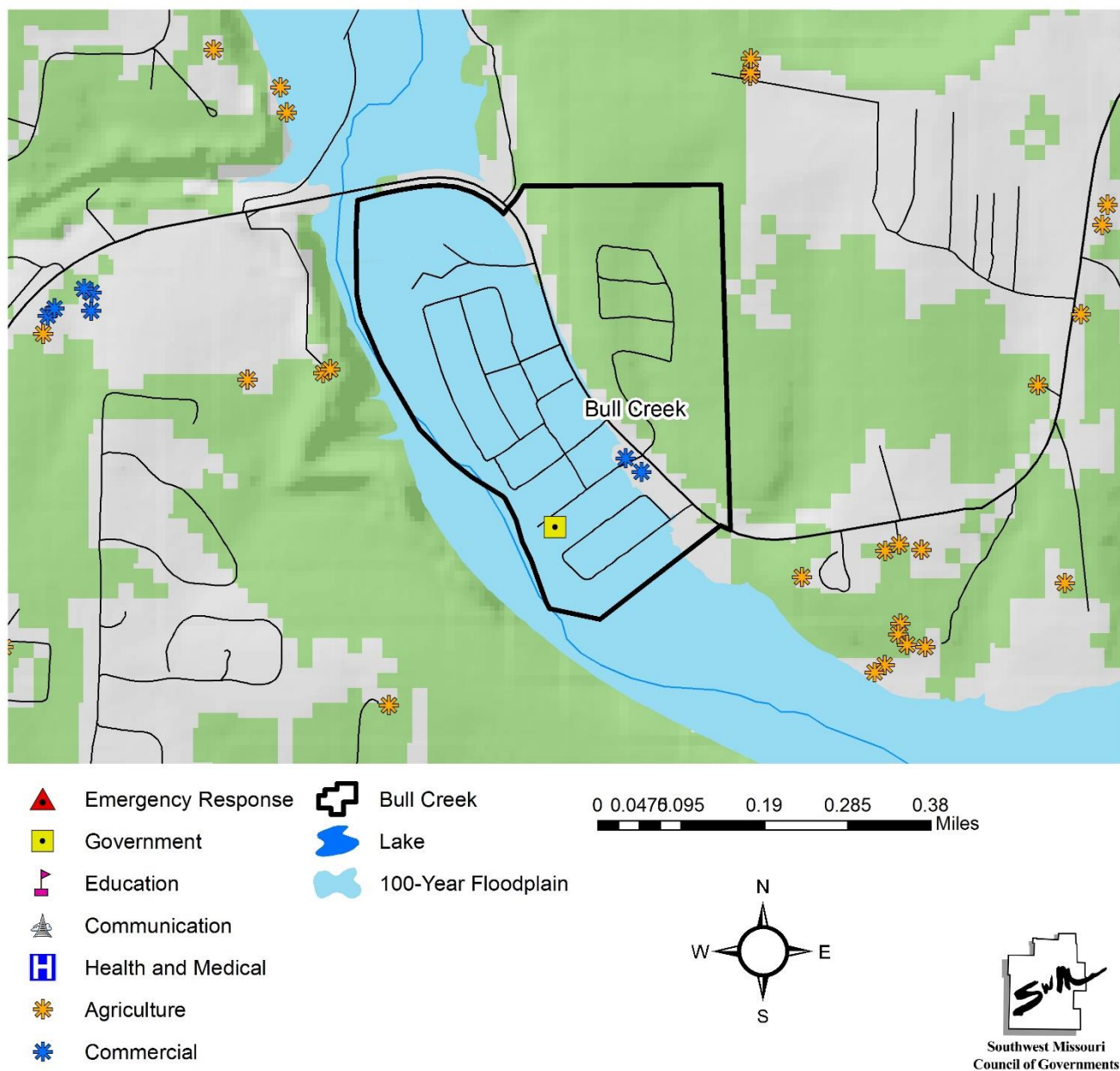
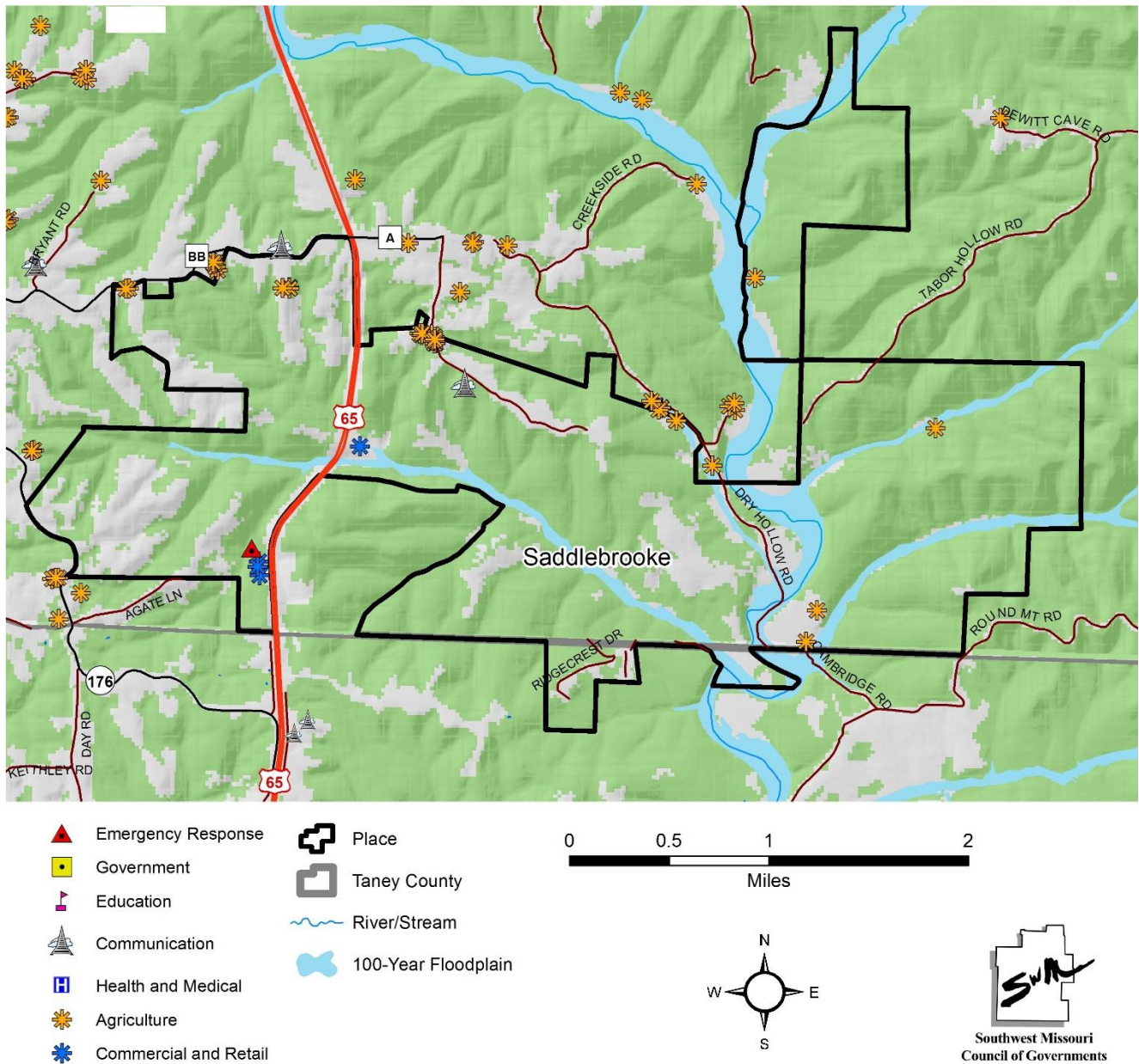


Figure 3.27. Village of Saddlebrooke SFHAs with Critical Facilities



Flash flooding events pose the most pervasive hazard of the two flood types in the county due to permeability of soils, slopes, increasing urban development and extensive network of streams and rivers. Sustained rainfall or downpours at the rate of one inch per hour have caused street flooding in incorporated areas and made a significant number of low water crossings impassible. Flash flooding occurs in the floodplain while low-lying areas in all jurisdictions are susceptible to flash floods outside the 100-year floodplain. They also occur in areas without adequate drainage to carry away the amount of water that falls during intense rainfall events. A review of the NCDC storm event database determined which jurisdictions are most prone to flooding and flash flooding from 1998 to July 2017 are listed in **Table 3.27** and **Table 3.28**.

Table 3.27. Taney County NCDC Flood Events by Location, 1998-2017*

Location	# of Events
Unincorporated Taney County	15
Highway J closed near Kirbyville (12/16/2001)	
Low water crossings, bridges, and low-lying areas (4/8/2002), (5/13/2002), (1/13/2005), (3/22/2008)	
Stockstill Park severely damaged and annual county fair cancelled due to flooding of Bull Shoals Lake (5/8/2002)	
Rivers and streams flooded (5/17/2002)	
Highway H, Columbus Road, and Fall Creek Road (3/4/2004)	
Columbus road at Bull Creek Bridge, intersection of Highway 176 and Molly Lane, and intersection of 176 and 160 near Rockaway Beach all flooded. Numerous low water crossings also inundated (4/23/2004)	
A section of Columbus Road near its intersection with Highway H flooded for several hours (3/4/2008)	
Lake Taneycomo and Turkey Creek flooded lowlands near streams (3/31/2008)	
Little Beaver Creek near Old Cheese Plant Road flooded from runoff of melting winter precipitation (3/21/2010)	
Route J closed in both directions near Trigger Creek (12/21/2013), (4/21/2017)	
Highway 125 closed due to flooding at Brush Creek (11/17/2015)	
Numerous homes and businesses in the county damaged (12/27/2015)	
City of Branson	1
Retaining wall collapsed due to saturated ground. 8 cars damaged by falling wall (7/2/2015)	
Roark Valley Road closed between Truman and Forsyth Road; Jupiter and Caudill Road closed (4/21/2017)	
Village of Bull Creek	1
30 homes evacuated (5/8/2002)	
Village of Kirbyville	1
Coon Creek Road (4/21/2017)	

Source: National Climatic Data Center

* = Through July 2017

The NCDC storm event data lists flash flood events according to the nearest community or place. Most of these events cover larger areas than the smaller geographic areas reported in the data. Some specific locations are listed within the narratives for flash flood events. Where specific roads and locations are listed they are provided in the table. Although some events may not be inside the corporate limits of the community identified in the narrative, they are in such proximity that the community named would be the most affected by impassible roads. It is safe to assume that numerous low water crossings would be impacted by heavy rains that exacerbate flash flooding across the county. In addition, multiple records are related to the same event and vice versa.

Table 3.28. Taney County NCDC Flash Flood Events by Location, 1998-2017*

Location	# of Events
Unincorporated Taney County	43
Countywide/Unspecified (1/4/1998), (3/19/1998), (2/6/1999), (6/17/2000), (5/12/2002), (3/18/2008), (3/31/2008), (4/10/2008), (6/28/2008), (9/14/2008), (6/4/2016), (4/30/2017)	
Highway 125 north of Protem (7/9/1999)	
Low water crossings (7/28/2000), (5/24/2000), (4/7/2002)	
Northern Taney County, low water crossing and one washed out street (6/28/2001)	
Bull Creek basin low water crossing (5/9/2006)	
Multiple road flooding (5/10/2006), (2/16/2008), (8/7/2008), (4/25/2011), (8/5/2016)	
Highway 160 east of Kissee Mills (5/10/2007)	
Old Cheese Plant Road near Little Beaver Creek (10/29/2009)	
Highway 125 (4/23/2011), (7/7/2015), (8/30/2015), (4/26/2017)	
Highway 76 (4/25/2011)	
Highway F (4/25/2011)	
Water rescue at Bull Creek (4/25/2011)	
Houseman Creek Bridge at Columbus Road (4/18/2013)	
Route J (4/25/2011), (8/8/2013), (4/29/2017)	
Green Mountain Drive (4/3/2015)	
Multiple water rescues along Animal Safari Road and Bird Road (7/7/2015)	
Upstream of Branson Landing (6/18/2015)	
Home on Grisham Lane evacuated and flooded (8/30/2015)	
Tractors, and livestock lost (8/30/2015)	
Low water crossing at Cross Timbers Road at Cane Creek (3/25/2017)	
Beaver Creek (4/21/2017)	
City of Branson	12
Roark Road, Shepard of the Hills Expressway, and Fall Creek Road (5/9/1998)	
Multiple Street flooding (8/30/2003), (6/1/2007), (6/20/2007), (7/4/2007), (7/7/2015), (6/4/2016), (6/30/2016)	
Sycamore Church Road (11/1/2004)	
Inundated house north of Branson (9/2/2005)	
Roark Valley Road (7/9/2015)	
Westwood Drive (4/29/2017)	
City of Forsyth	6
Unspecified (6/30/2007)	
Low-lying areas (7/9/1997)	
Low water crossings (4/24/2004), (1/12/2005)	
Columbus Road (7/7/2015), (7/9/2015)	
City of Hollister	3
Fall Creek Road (10/8/2009)	
Route BB (8/8/2013)	
Homes evacuated, businesses flooded, cars washed away, bridges and low water crossings underwater (8/8/2013)	
City of Rockaway Beach	2
Intersection of Honey Lane and Sundown Lane completely washed out (6/23/2008)	
Highway 176 (4/25/2011)	
Village of Bull Creek	2
Structures, roads, and bridges (4/25/2011), (7/10/2015)	
Village of Taneyville	2

Middleton Road (8/11/1999)
Low water crossings (7/11/2010)

Source: National Climatic Data Center

* = Through July, 2017

Severity/Magnitude/Extent

Missouri has a long and active history of flooding over the past century, according to the 2010 State Hazard Mitigation Plan. Flooding along Missouri's major rivers generally results in slow-moving disasters. River crest levels are forecast several days in advance, allowing communities downstream sufficient time to take protective measures, such as sandbagging and evacuations. Nevertheless, floods exact a heavy toll in terms of human suffering and losses to public and private property. By contrast, flash flood events in recent years have caused a higher number of deaths and major property damage in many areas of Missouri.

Flooding presents a danger to life and property, often resulting in injuries, and in some cases, fatalities. Floodwaters themselves can interact with hazardous materials. Hazardous materials stored in large containers could break loose or puncture as a result of flood activity. Examples are bulk propane tanks. When this happens, evacuation of citizens is necessary.

Public health concerns may result from flooding, requiring disease and injury surveillance. Community sanitation to evaluate flood-affected food supplies may also be necessary. Private water and sewage sanitation could be impacted, and vector control (for mosquitoes and other entomology concerns) may be necessary.

When roads and bridges are inundated by water, damage can occur as the water scours materials around bridge abutments and gravel roads. Floodwaters can also cause erosion undermining road beds. In some instances, steep slopes that are saturated with water may cause mud or rock slides onto roadways. These damages can cause costly repairs for state, county, and city road and bridge maintenance departments. When sewer back-up occurs, this can result in costly clean-up for home and business owners as well as present a health hazard.

National Flood Insurance Program (NFIP) Participation

Table 3.29 provides details on NFIP participation for the communities in Taney County. It should be noted that while Forsyth does have a community ID and effective map, the elected officials voted in 2017 to no longer participate in NFIP. **Table 3.30** contains the number of policies in force, amount of insurance in force, number of closed losses, and total payments for each jurisdiction, where applicable. The time period represented by the data for closed losses is from January 1, 1978 through March 31, 2017.

Table 3.29. NFIP Participation in Taney County

Community ID #	Community Name	NFIP Participant (Y/N)	Current Effective Map Date	Regular- Emergency Program Entry Date
290435	Taney County	Y	03/15/12	04/01/04
290436	City of Branson	Y	03/15/12	10/26/76

290731	City of Forsyth	N	03/15/12	02/07/76
290437	City of Hollister	Y	03/15/12	03/18/85
290069	City of Merriam Woods	Y	03/15/12	09/26/06
290438	City of Rockaway Beach	Y	03/15/12	03/01/00
290916	Village of Bull Creek	Y	03/15/12	09/30/97
	Village of Kirbyville	N		
290993	Village of Saddlebrooke	Y	12/17/10	08/16/12
	Village of Taneyville	N		

Source: NFIP Community Status Book, 9/26/2013; BureauNet, <http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book>; M= No elevation determined – all Zone A, C, and X: NSFHA = No Special Flood Hazard Area; E=Emergency Program

Table 3.30. NFIP Policy and Claim Statistics as of March 31, 2017

Community Name	Policies in Force	Insurance in Force	Closed Losses	Total Payments
Taney County	162	\$27,853,900	133	\$10,904,510.15
City of Branson	275	\$52,074,600	69	\$3,884,923.04
City of Hollister	12	\$1,624,300	34	\$897,883.95
City of Rockaway Beach	56	\$8,436,900	20	\$191,309.39
Village of Bull Creek	11	\$1,009,100	9	\$31,805.69

Source: NFIP Community Status Book, 2017; BureauNet, <http://bsa.nfipstat.fema.gov/reports/reports.html>; *Closed Losses are those flood insurance claims that resulted in payment. Loss statistics are for the period from January 1, 1978 to March 31, 2017.

Unincorporated Taney County has the highest number of closed losses and total payments.

Repetitive Loss/Severe Repetitive Loss Properties

Repetitive Loss Properties are those properties with at least two flood insurance payments of \$5,000 or more in a 10-year period.

Severe Repetitive Loss (SRL): A SRL property is defined it as a single family property (consisting of one-to-four residences) that is covered under flood insurance by the NFIP; and has (1) incurred flood-related damage for which four or more separate claims payments have been paid under flood insurance coverage with the amount of each claim payment exceeding \$5,000 and with cumulative amounts of such claims payments exceeding \$20,000; or (2) for which at least two separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

According to the Flood Insurance Administration, jurisdictions included in Taney County have a combined total of 74 repetitive or severe repetitive loss properties.

Table 3.31 provides a summary of the repetitive loss properties in Taney County and incorporated jurisdictions.

Table 3.31. Taney County Repetitive Loss Properties

Jurisdiction	# of Properties	Building Payments	Content Payments	Total Payments	Average Payment	# of Losses
Taney County	44	\$10,125,557.17	\$983,752.36	\$11,109,309.53	\$93,355.54	119
City of Branson	19	\$2,536,630.29	\$249,871.16	\$2,786,501.45	\$51,601.88	54
City of Hollister	4	\$222,256.92	\$12,518.87	\$234,775.79	\$19,564.65	12
City of Rockaway Beach	4	\$121,741.95	\$0	\$121,741.95	\$9,364.77	13
Village of Bull Creek	3	\$14,920.63	\$10,295.00	\$25,215.63	\$4,202.60	6

Source: Flood Insurance Administration as of August 29, 2017.

Previous Occurrences

According to the NCDC storm event data, there were 70 flash flood events recorded in Taney County from 1998 to 2017. Eighteen of these events resulted in property damage. The most recent damaging event occurred in April of 2017 when several rounds of severe thunderstorms occurred across southwest Missouri. Taney County was included in the presidential disaster declaration 4250 during major flooding across the state in December 2015 and Emergency declaration 4317 in June 2017. Numerous roads, bridges, and low water crossings were damaged. Structures affected include 33 single-family homes, 10 mobile homes, and over 80 businesses in Taney county resulting in over \$10 million in damages. Taney County was also included in the presidential disaster declaration 1980 in which around \$1 million in flood damages occurred county wide. **Table 3.32** summarizes flash flood events by year from 1998 to 2017 in Taney County. The most damaging year was during 2008 flooding in March and June which affected over one hundred businesses county-wide.

Table 3.32. NCDC Taney County Flash Flood Events Summary, 1998 to 2017*

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
1998	3	0	0	\$0	\$0
1999	3	0	0	\$0	\$0
2000	3	0	0	\$0	\$0
2001	1	0	0	\$0	\$0
2002	2	0	0	\$0	\$0
2003	1	0	0	\$0	\$0
2004	2	0	0	\$0	\$0
2005	2	0	0	\$5,000	\$0
2006	2	0	0	\$0	\$0
2007	5	0	0	\$0	\$0
2008	9	0	0	\$5,640,000	\$0
2009	2	0	0	\$0	\$0
2010	1	0	0	\$0	\$0
2011	7	0	0	\$10,000,000	\$0
2013	4	0	0	\$1,000,000	\$0
2015	13	0	0	\$1,860,000	\$0
2016	4	0	0	\$100,000	\$0
2017*	6	0	0	\$10,000,000	\$0
Total	70	0	0	\$28,605,000	\$0

Source: NCDC, data accessed July, 2017; * = Through July 2017

Table 3.33 summarizes riverine flood events by year from 1997 to 2016 in Taney County.

Table 3.33. NCDC Taney County Riverine Flood Events Summary, 1997 to 2017*

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
2001	1	0	0	\$0	\$0
2002	4	0	0	\$400,000	\$0
2004	2	0	0	\$0	\$0
2005	1	0	0	\$0	\$0
2008	3	0	0	\$0	\$0
2010	1	0	0	\$0	\$0
2013	1	0	0	\$0	\$0
2015	3	0	0	\$3,050,000	\$0
2017	3	0	0	\$0	\$0
Total	19	0	0	\$3,450,000	\$0

Source: NCDC, data accessed June, 2017

Probability of Future Occurrence

There have been a total of 89 reported flood events in Taney County from 1998 to 2017 in the NCDC storm event database. Of those, 70 were flash floods. In this 20 year period, there was only one year, 2012, with no reported flash flood events. This means that there is a 95% probability that there will be a flash flood in any given year, with an average of almost 4 (3.7) per year. Of the 70 events, 17 resulted in property damages totaling \$28,605,000, or \$1,682,647 per damaging event. During the same time period there were 19 riverine flood events reported in the county. These were spread out over 9 years, giving a 45% probability for a riverine flood in any given year with just over 2 (2.1) events on average per year. Three of the 19 events resulted in \$3,450,000, or \$1,150,000 per damaging event.

Vulnerability

Vulnerability Overview

Flooding has been included in most of the presidential disaster declarations that have included Taney County. Periods of heavy rain falling at the rate of one inch per hour floods low water crossings throughout the county making many roads impassable. This creates a severe threat to motorists that attempt to drive through flood waters over the roadway. Riverine flooding occurs less frequently than flash flooding and there are several repetitive loss properties in the county; however, property damage is still likely to occur to non-SRL properties. Areas in low lying areas outside of the floodplain may also be frequently flooded. Flooding of streets has been reported in several of the communities and many highways are frequently being flooded. Route J has experienced the most flooding and flash flooding. Other susceptible roads include Highway 125, Highway 160 and Route H. There are no schools or special district facilities in SFHAs in Taney County, however, schools have reported damages due to flash flooding. Increases in development add to surface runoff and can exacerbate flash flooding in areas that previously have not experienced flooding.

Potential Losses to Existing Development

Flood loss estimates were developed by selecting all parcels located within 100 feet of the 100-year floodplain to compile building counts by type for each participating municipality and the unincorporated parts of Taney County. It is important to note that this method created building counts for areas outside the 100-year floodplain, but in an effort to depict potential losses from flash flooding, those parcels were included. The summed valuations for all parcels within 100 feet of the 100-year floodplain would be more prone to flash flooding due to the proximity to the natural drainage features in the area.

Potential flood losses by building type by jurisdiction are presented in **Table 3.34**.

Table 3.34. Potential Flood Losses for Building Types by Jurisdiction

Jurisdiction	Residential	Commercial	Agricultural	Total
Branson	376	82	8	466
Forsyth	3	3	1	7
Hollister	123	48	6	177
Merriam Woods	2	1	0	3
Rockaway Beach	52	38	0	90
Bull Creek	81	1	4	86
Unincorporated County	781	117	165	1,063
Taney County Total	1,418	290	184	1,892

Source: Taney County Parcel Data; Missouri Structures Data

Table 3.35 provides the total exposure for structures and contents by building type and jurisdiction. Losses were estimated by applying a 5% damage factor to total exposure.

Table 3.35. Total Flood Exposure and Estimated Losses by Jurisdiction

Jurisdiction	Residential	Commercial	Agricultural	Estimated Exposure	Estimated Loss
Branson	\$8,883,950	\$7,714,360	\$43,630	\$16,641,940	\$832,097
Forsyth	\$74,430	\$2,530	\$520	\$77,480	\$3,874
Hollister	\$2,770,590	\$2,869,660	\$14,900	\$5,655,150	\$282,757
Merriam Woods	\$22,510	\$1,230	\$0	\$23,740	\$1,187
Rockaway Beach	\$861,560	\$748,380	\$0	\$1,609,940	\$80,497
Bull Creek	\$442,050	\$68,810	\$640	\$511,500	\$25,575
Unincorporated County	\$16,513,000	\$14,099,930	\$266,800	\$30,879,730	\$1,543,986
Taney County Total	\$29,568,090	\$25,504,900	\$326,490.00	\$55,399,480	\$2,769,974

Source: Taney County Parcel Data; Missouri Structures Data

The communities of Branson, Bull Creek, and Rockaway Beach all have critical facilities within the 100 year floodplain.

Impact of Previous and Future Development

Future development could impact flash and riverine flooding in Taney County. Development in low-lying areas near rivers and streams or where interior drainage systems are not adequate to provide drainage during heavy rainfall events will be at risk to flash flooding. Future development would also increase impervious surfaces causing additional water run-off and drainage problems during heavy rainfall events.

Hazard Summary by Jurisdiction

All local governments in the county are at risk to flood hazards; however, as demonstrated in **Table 3.35** exposure of assets near SFHAs varies among jurisdictions. It should be noted that all of these communities can be impacted by flooding of major roads and low water crossings in the areas proximate to their corporate limits. Several incorporated areas in the county are susceptible to street flooding during periods of heavy rain as evidenced by the previous occurrences by location in **Table 3.27** and **3.28**. The greatest impact of flooding is in the unincorporated part of the county. Taney County is part of the NFIP program, so it is able to regulate development in the floodplains. Due to the topography and many streams in the county, numerous low water crossings are damaged and create a significant hazard to public safety during flood events.

Community Comments on Hazard

Five residents who participated in the online survey felt that riverine or flash flooding was one of the top two highest threats to their neighborhoods. These residents resided in: Hollister, Bull Creek, Merriam Woods, Rockaway Beach, and Forsyth. Two of the respondents believe their property is in a floodplain, but only one currently has flood insurance. The other respondent stated that they felt the insurance was too expensive. Four of those five residents stated they would be willing to participate in a buyout if their property were to be repeatedly damaged. The two respondents who resided in the floodplain had experienced flooding on the first floor of their property and expressed concern. The Merriam Woods resident stated that roads in the community have been completely destroyed by flash flooding.

Problem Statement

Floods are frequent events and have been listed in all but two of the presidential disaster declarations that have included Taney County. Taney County is a participant in the NFIP along with the jurisdictions of Branson, Hollister, Merriam Woods, Rockaway Beach, Bull Creek, and Saddlebrooke. These communities have passed floodplain management ordinances and have the ability to substantially regulate development in the floodplain. Participation in the NFIP enables residents to purchase flood insurance. Street flooding in incorporated areas can be addressed through storm water management projects and enforce storm water management regulations.

Several million dollars in property damage has resulted in the numerous flood events in the past two decades. To reduce the damage of floods to infrastructure and human life, several strategies can be implemented, such as hazard awareness programs and waterway maintenance. Additionally, based on survey responses, additional education on the value of flood insurance may be necessary. Signage of flood prone areas should also be maintained and made visible to everyone. Projects involving the improvements to river/stream embankments can also reduce flooding to surrounding areas.

3.4.7 Land Subsidence/Sinkholes

Some specific sources for this hazard are:

- <http://www.dnr.mo.gov/geology/geosrv/envgeo/sinkholes.htm>
- <http://water.usgs.gov/edu/sinkholes.html>

Hazard Profile

Hazard Description

Sinkholes are common where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that naturally can be dissolved by ground water circulating through them. As the rock dissolves, spaces and caverns develop underground. The sudden collapse of the land surface above them can be dramatic and range in size from broad, regional lowering of the land surface to localized collapse. However, the primary causes of most subsidence are human activities: underground mining of coal, groundwater or petroleum withdrawal, and drainage of organic soils. In addition, sinkholes can develop as a result of subsurface void spaces created over time due to the erosion of subsurface limestone (karst).

Land subsidence occurs slowly and continuously over time, as a general rule. On occasion, it can occur abruptly, as in the sudden formation of sinkholes. Sinkhole formation can be aggravated by flooding.

In the case of sinkholes, the rock below the surface is rock that has been dissolving by circulating groundwater. As the rock dissolves, spaces and caverns form, and ultimately the land above the spaces collapse. In Missouri, sinkhole problems are usually a result of surface materials above openings into bedrock caves eroding and collapsing into the cave opening. These collapses are called “cover collapses” and geologic information can be applied to predict the general regions where collapse will occur. Sinkholes range in size from several square yards to hundreds of acres and may be quite shallow or hundreds of feet deep.

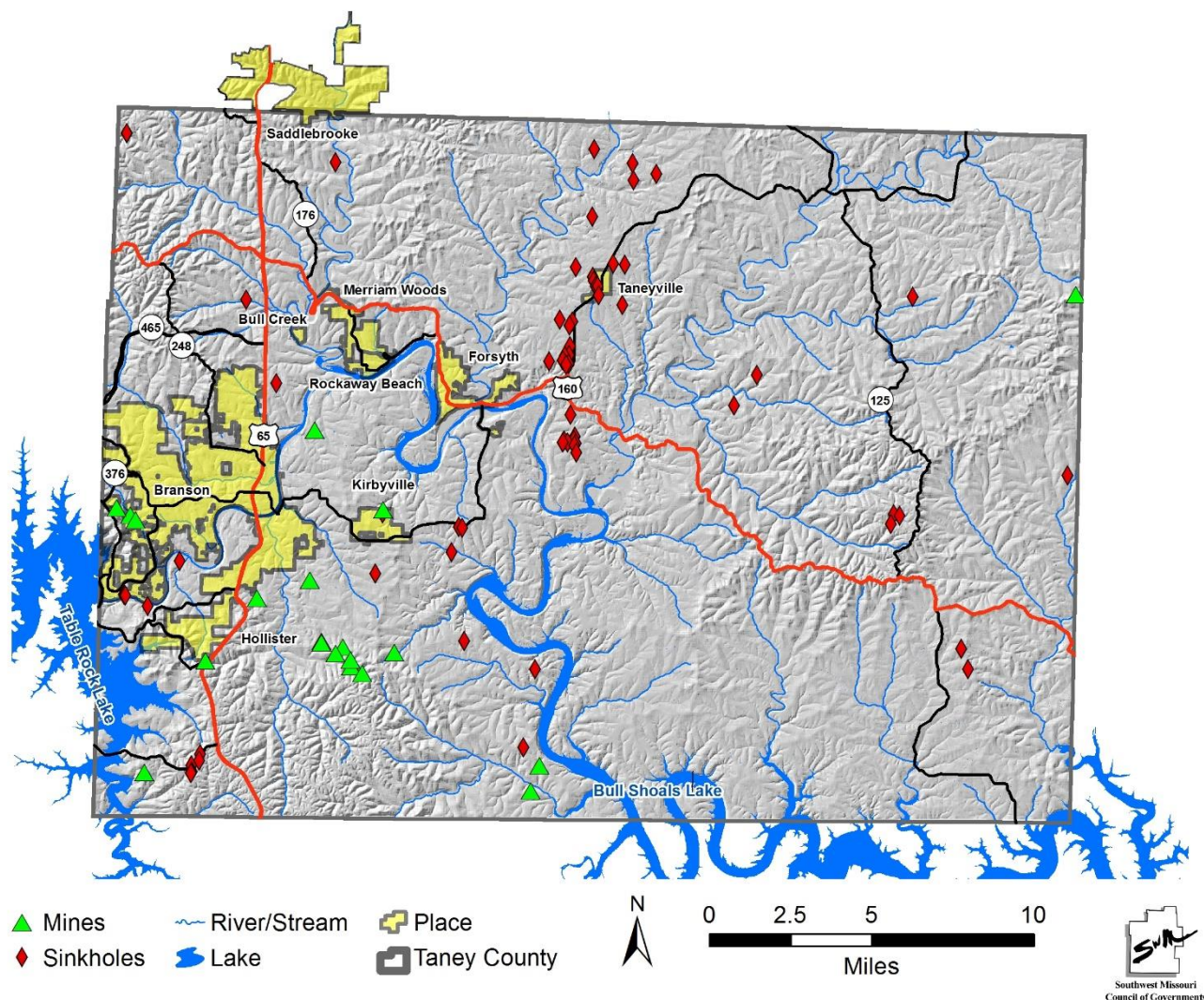
According to the U.S. Geological Survey (USGS), the most damage from sinkholes tends to occur in Florida, Texas, Alabama, Missouri, Kentucky, Tennessee, and Pennsylvania. Fifty-nine percent of Missouri is underlain by thick, carbonate rock that makes Missouri vulnerable to sinkholes. Sinkholes occur in Missouri on a fairly frequent basis. Most of Missouri’s sinkholes occur naturally in the State’s karst regions (areas with soluble bedrock). They are a common geologic hazard in southern Missouri, but also occur in the central and northeastern parts of the State. Missouri sinkholes have varied from a few feet to hundreds of acres and from less than one to more than 100 feet deep. The largest known sinkhole in Missouri encompasses about 700 acres in western Boone County southeast of where Interstate 70 crosses the Missouri River. Sinkholes can also vary in shape like shallow bowls or saucers whereas other have vertical walls. Some hold water and form natural ponds.

According to Missouri Department of Natural Resources, Inventory of Mines, Occurrences, and Prospects database, there are 77 mines in Taney County. Forty-nine are past producers and are no longer in use. Zinc and lead have been historically the most common commodity mined; however, the 16 mines currently in operation mine limestone and sand & gravel.

Geographic Location

The greatest concentration of sinkholes in Taney County is in the north-central, near Taneyville. They are also scattered about the entire county. **Figure 3.28** shows the locations of sinkholes and mines in Taney County.

Figure 3.28. Sinkholes and underground mines in Taney County



Source: Missouri Department of Natural Resources, USGS

Severity/Magnitude/Extent

Sinkholes vary in size and location, and these variances will determine the impact of the hazard. A sinkhole could result in the loss of a personal vehicle, a building collapse, or damage to infrastructure such as roads, water, or sewer lines. Groundwater contamination is also possible from a sinkhole. Because of the relationship of sinkholes to groundwater, pollutants captured or dumped in sinkholes could affect a community's groundwater system. Sinkhole collapse could be triggered by large earthquakes. Sinkholes located in floodplains can absorb floodwaters, but make detailed flood hazard studies difficult to model.

The 2013 State Plan included only seven documented sinkhole “notable events”. The plan stated that sinkholes are common to Missouri and the probability is high that they will occur in the future. To date, Missouri sinkholes have historically not had major impacts on development nor have they caused serious damage. Thus, the severity of future events is likely to be low.

<http://www.foundation-repair-guide.com/expansive-soil.html>
http://www.ehow.com/list_6880295_properties-expansive-soils.html

Previous Occurrences

Sinkholes are a regular occurrence in Missouri, but rarely are events of any significance. In May 2015, local news sources reported the opening of a sinkhole at Top of the Rock Golf Course. According to Branson Tri-Lakes News, the hole measured 70 feet wide and 40 feet deep. By March 2016, 375,000 cubic yards of soil had been removed from the site in an attempt to find a new cave beneath the hole.

Probability of Future Occurrence

Sinkhole incidents are not tracked, thus it is nearly impossible to calculate a future probability of occurrence. However, due to the number of known mines and sinkholes in Taney County, it is likely that there will be an occurrence at some point in the future.

Vulnerability

Vulnerability Overview

Sinkholes in Missouri are a common feature where limestone and dolomite outcrop. Dolomite is a rock similar to limestone with magnesium as an additional element along with the calcium normally present in the minerals that form the rocks. While some sinkholes may be considered a slow changing nuisance; other more sudden, catastrophic collapses can destroy property, delay construction projects, contaminate ground water resources, and damage underground utilities. The entire county is underlain with limestone and dolomite bedrock.

Potential Losses to Existing Development

Sinkhole loss estimates were established using GIS processes and appraised valuations. A sinkhole point shapefile acquired from MDNR was used to generate a half-mile buffer around each feature. The buffer layer was designated as the hazard prone areas for sinkholes. The map layer of the sinkhole hazard prone areas was used as an overlay on the parcel data to generate the loss estimates from this hazard by jurisdiction. **Table 3.36** provides the building count by type and by jurisdiction based on the results of the sinkhole analysis. **Table 3.37** provides a dollar amount for total exposure by jurisdiction and estimated losses. To calculate the losses a damage factor of 0.5% was applied to the total exposure.

Table 3.36. Sinkhole Exposure by Building Type by Jurisdiction

Jurisdiction	Residential	Commercial	Agriculture	Building Count
Taney County	1,131	68	258	1,457
Branson	178	7	8	193
Taneyville	165	11	0	176
Totals	1,474	86	266	1,826

Source: Missouri GIS Database

Table 3.37. Total Sinkhole Exposure and Estimated Losses by Jurisdiction

Jurisdiction	Residential	Commercial	Agriculture	Estimated Exposure	Estimated Loss
Taney County	\$20,611,250	\$4,691,220	\$259,460	\$25,561,930	\$127,809
Branson	\$4,532,230	\$1,295,720	\$450	\$5,828,400	\$29,142
Taneyville	\$1,199,860	\$278,180	\$5,060	\$1,483,100	\$7,415
Totals	\$26,343,340	\$6,265,120	\$264,970	\$32,873,430	\$164,366

Source: Missouri GIS Database, Taney County Parcel Data

All of Taneyville R-II School District facilities are within the half-mile sinkhole buffer. No other schools are within half a mile of a sinkhole.

Impact of Previous and Future Development

Future development over abandoned mines and in areas of known risk to sinkhole formation in the planning area will increase vulnerability to this hazard. Population and development in these areas, especially in Branson, Taneyville, and unincorporated parts of Taney County will increase exposure to sinkhole occurrence. There are currently no regulations prohibiting construction over or near known sinkholes. Future development may also change storm runoff patterns and cause expansion or formation of sinkholes.

Hazard Summary by Jurisdiction

The risk of sinkhole damage for individual communities and school districts is limited to the amount of exposure of buildings and infrastructure. Some parts of the county are more at risk for potential sinkhole formations such as the north & northeast portions of the county. Branson, Taneyville and the Taneyville R-II school district are the only jurisdictions with existing structures at risk of sinkholes; however, much of the unincorporated county is at risk.

Problem Statement

It is likely that more sinkholes will occur as development increases within the county. Sinkholes can be remediated with fill material. Once a sinkhole has been remediated, building should be prohibited at the site. Existing sinkholes can expand if surface runoff erodes the edges of the sinkhole. Storm water runoff should be diverted away from known sinkholes. Jurisdictions may adopt regulations prohibiting construction at least 30 feet from known sinkholes. Information about identifying potential sinkhole formation and promoting Missouri FAIR plan sinkhole insurance can be included in public outreach and hazard awareness programs. Undeveloped land that is in a sinkhole risk area can be used for park space or other recreational purposes.

3.4.8 Thunderstorm/High Winds/Lightning/Hail

Some Specific Sources for this hazard are:

- FEMA 320, Taking Shelter from the Storm, 3rd edition:
http://www.weather.gov/media/bis/FEMA_SafeRoom.pdf
- Lightning Map, National Weather Service,
http://www.lightningsafety.noaa.gov/stats/08_Vaisala_NLDN_Poster.pdf
- Death and injury statistics from lightning strikes, National Weather Service.
- Wind Zones in the U.S. map, FEMA,
http://www.fema.gov/plan/prevent/saferoom/tsfs02_wind_zones.shtm;
- Annual Windstorm Probability (65+knots) map U.S. 1980-1994, NSSL,
http://www.nssl.noaa.gov/users/brooks/public_html/bigwind.gif
- Hailstorm intensity scale, The Tornado and Storm Research Organization (TORRO),
<http://www.torro.org.uk/site/hscale.php>;
- USDA Risk Management Agency, Insurance Claims, <http://www.rma.usda.gov/data/cause.htm>
- National Severe Storms Laboratory – hail map,
http://www.nssl.noaa.gov/users/brooks/public_html/bighail.gif

Hazard Profile

Hazard Description

Thunderstorms

A thunderstorm is defined as a storm that contains lightning and thunder which is caused by unstable atmospheric conditions. When cold upper air sinks and warm moist air rises, storm clouds or ‘thunderheads’ develop resulting in thunderstorms. This can occur singularly, as well as in clusters or lines. The National Weather Service defines a thunderstorm as “severe” if it includes hail that is one inch or more, or wind gusts that are at 58 miles per hour or higher. At any given moment across the world, there are about 1,800 thunderstorms occurring. Severe thunderstorms most often occur in Missouri in the spring and summer, during the afternoon and evenings, but can occur at any time. Other hazards associated with thunderstorms are heavy rains resulting in flooding (discussed separately in **Section 3.4.6**) and tornadoes (discussed separately in **Section 3.4.9**).

High Winds

A severe thunderstorm can produce winds causing as much damage as a weak tornado. The damaging winds of thunderstorms include downbursts, microbursts, and straight-line winds. Downbursts are localized currents of air blasting down from a thunderstorm, which induce an outward burst of damaging wind on or near the ground. Microbursts are minimized downbursts covering an area of less than 2.5 miles across. They include a strong wind shear (a rapid change in the direction of wind over a short distance) near the surface. Microbursts may or may not include precipitation and can produce winds at speeds of more than 150 miles per hour. Damaging straight-line winds are high winds across a wide area that can reach speeds of 140 miles per hour.

Lightning

All thunderstorms produce lightning which can strike outside of the area where it is raining and is has been known to fall more than 10 miles away from the rainfall area. Thunder is simply the sound that lightning makes. Lightning is a huge discharge of electricity that shoots through the air causing vibrations and creating the sound of thunder.

Hail

According to the National Oceanic and Atmospheric Administration (NOAA), hail is precipitation that is formed when thunderstorm updrafts carry raindrops upward into extremely cold atmosphere causing them to freeze. The raindrops form into small frozen droplets. They continue to grow as they come into contact with super-cooled water which will freeze on contact with the frozen rain droplet. This frozen droplet can continue to grow and form hail. As long as the updraft forces can support or suspend the weight of the hailstone, hail can continue to grow before it hits the earth.

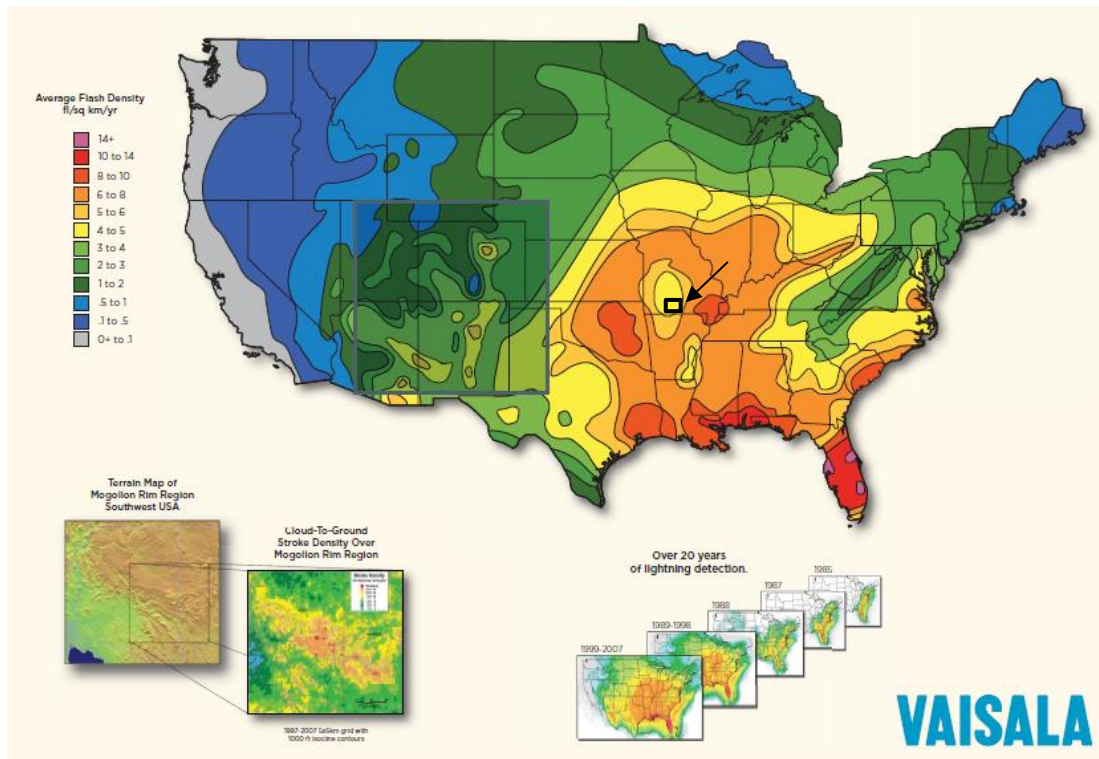
At the time when the updraft can no longer support the hailstone, it will fall down to the earth. For example, a $\frac{1}{4}$ " diameter or pea sized hail requires updrafts of 24 miles per hour, while a $2\frac{3}{4}$ " diameter or baseball sized hail requires an updraft of 81 miles per hour. According to the NOAA, the largest hailstone in diameter recorded in the United States was found in Vivian, South Dakota on July 23, 2010. It was eight inches in diameter, almost the size of a soccer ball. Soccer-ball-sized hail is the exception, but even small pea-sized hail can do damage.

Geographic Location

Thunderstorms/high winds/hail/lightning events are an area-wide hazard that can happen anywhere in the county. Although these events occur similarly throughout Taney County, they are more frequently reported in the urbanized areas. In addition, damages are more likely to occur in more densely developed urban areas, such as Branson and Hollister.

Figure 3.29 shows lightning frequency in the state. Taney County lies in the 4-5 flash density zone in the map.

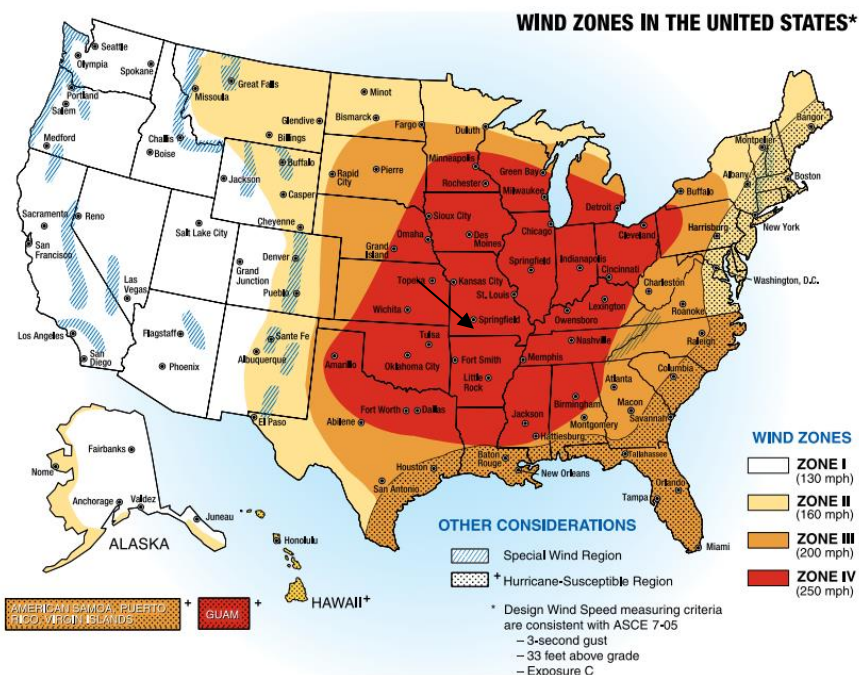
Figure 3.29. Location and Frequency of Lightning in Missouri



Source: National Weather Service, http://www.lightningsafety.noaa.gov/stats/08_Vaisala_NLDN_Poster.pdf

Figure 3.30 shows wind zones in the United States. Taney County is located in Zone IV, which can experience wind speeds of up to 250 mph.

Figure 3.30. Wind Zones in the United States



Source: FEMA 320, Taking Shelter from the Storm, 3rd edition http://www.weather.gov/media/bis/FEMA_SafeRoom.pdf

Severity/Magnitude/Extent

Severe thunderstorm losses are usually attributed to the associated hazards of hail, downburst winds, lightning and heavy rains. Losses due to hail and high wind are typically insured losses that are localized and do not result in presidential disaster declarations. However, in some cases, impacts are severe and widespread and assistance outside state capabilities is necessary. Hail and wind also can have devastating impacts on crops. Severe thunderstorms/heavy rains that lead to flooding are discussed in the flooding hazard profile. Hailstorms cause damage to property, crops, and the environment, and can injure and even kill livestock. In the United States, hail causes more than \$1 billion in damage to property and crops each year. Even relatively small hail can shred plants to ribbons in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are also commonly damaged by hail. Hail has been known to cause injury to humans, occasionally fatal injury.

In general, assets in the County vulnerable to thunderstorms with lightning, high winds, and hail include people, crops, vehicles, and built structures. Although this hazard results in high annual losses, private property insurance and crop insurance usually cover the majority of losses. Considering insurance coverage as a recovery capability, the overall impact on jurisdictions is reduced.

Most lightning damages occur to electronic equipment located inside buildings. But structural damage can also occur when a lightning strike causes a building fire. In addition, lightning strikes can cause damages to crops if fields or forested lands are set on fire. Communications equipment and warning transmitters and receivers can also be knocked out by lightning strikes.

Based on information provided by the Tornado and Storm Research Organization (TORRO), **Table 3.3838** below describes typical damage impacts of the various sizes of hail.

Table 3.38. Tornado and Storm Research Organization Hailstorm Intensity Scale

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Hard Hail	5-9	0.2-0.4	Pea	No damage
Potentially Damaging	10-15	0.4-0.6	Mothball	Slight general damage to plants, crops
Significant	16-20	0.6-0.8	Marble, grape	Significant damage to fruit, crops, vegetation
Severe	21-30	0.8-1.2	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
Severe	31-40	1.2-1.6	Pigeon's egg > squash ball	Widespread glass damage, vehicle bodywork damage
Destructive	41-50	1.6-2.0	Golf ball > Pullet's egg	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
Destructive	51-60	2.0-2.4	Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted
Destructive	61-75	2.4-3.0	Tennis ball > cricket ball	Severe roof damage, risk of serious injuries
Destructive	76-90	3.0-3.5	Large orange > Soft ball	Severe damage to aircraft bodywork
Super Hailstorms	91-100	3.6-3.9	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
Super Hailstorms	>100	4.0+	Melon	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Source: Tornado and Storm Research Organization (TORRO), Department of Geography, Oxford Brookes University

Notes: In addition to hail diameter, factors including number and density of hailstones, hail fall speed and surface wind speeds affect severity. <http://www.torro.org.uk/site/hscale.php>

Straight-line winds are defined as any thunderstorm wind that is not associated with rotation (i.e., is not a tornado). It is these winds, which can exceed 100 miles per hour, which represent the most common type of severe weather. They are responsible for most wind damage related to thunderstorms. Since thunderstorms do not have narrow tracks like tornadoes, the associated wind damage can be extensive and affect entire (and multiple) counties. Objects like trees, barns, outbuildings, high-profile vehicles, and power lines/poles can be toppled or destroyed, and roofs, windows, and homes can be damaged as wind speeds increase.

While, agriculture is strong in the unincorporated portions of Taney County, there are no recorded past crop damages as indicated by crop insurance claims.

The onset of thunderstorms with lightning, high wind, and hail is generally rapid. Duration is less than six hours and warning time is generally six to twelve hours. Nationwide, lightning kills 75 to 100 people each year. Lightning strikes can also start structural and wildland fires, as well as damage electrical systems and equipment.

Previous Occurrences

Thunderstorm Winds

There were 124 thunderstorm wind events reported to the NCDC from 1998-2016 in Taney County. There were 46 events with reported damages. The total damages from these events include five injuries and \$1,378,000 in property damages, with average loss per damaging event totaling \$29,957.

Table 3.39 provides information about damaging thunderstorm wind events in the county.

Table 3.39. NCDC Reported Events with Damages from Thunderstorm Winds, 1998-2017*

Location	# of Events	Deaths	Injuries	Property Damage	Crop Damage
Taney County	43	0	1	\$562,000	\$0
Branson	32	0	1	\$205,000	\$0
Forsyth	25	0	0	\$37,000	\$0
Hollister	11	0	1	\$218,000	\$0
Kirbyville	2	0	0	\$15,000	\$0
Rockaway Beach	7	0	0	\$25,000	\$0
Taneyville	4	0	2	\$62,000	\$0
Total	124	0	5	\$1,378,000	\$0

Source: NCDC Storm Data; * = Through July 2017

Hail

There were 128 hail events reported to the NCDC from 1998 – 2017 in Taney County. Two events recorded the highest magnitude events where hailstones reached a diameter of 2.75. No damages occurred during these events. There were four events with reported damages. The most significant and costly event occurred in March 2006 when hail caused \$500,000 in property damage.

Table 3.40 provides information about damaging hail events in the county.

Table 3.40. NCDC Reported Events and Damages from Hail, 1998-2017*

Location	Date	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Branson	5/9/1998	1.75	0	0	\$50,000	\$0
Branson	3/12/2006	2.5	0	0	\$500,000	\$0
Taney County	10/1/2009	1	0	0	\$5,000	\$0
Taney County	3/9/2017	1.5	0	0	\$10,000	\$0
Total			0	0	\$565,000	\$0

Source: NCDC Storm Data; * = Through July 2017

High Winds

There were two high wind events reported in Taney County to the NCDC from 1997-2016. One event had no damages occur. There was one event with reported damages, but no reported crop damage. These are wind events not associated with a thunderstorm.

Table 3.41 provides information about damaging high wind events in the county.

Table 3.41. NCDC Reported Events and Damages from High Winds, 1997-2017*

Location	Date	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Taney County	9/14/2008	52 mph	0	0	\$0	\$0
Taney County	2/20/2014	48 mph	0	0	\$10,000	\$0
Total			0	0	\$10,000	\$0

Source: NCDC Storm Data; * = Through July 2017

Lightning

Limitations to the use of NCDC reported lightning events include the fact that only lightning events that result in fatality, injury and/or property and crop damage are in the NCDC. There were three events recorded in Taney County in the NCDC data from 1997-2016. These events resulted in \$530,000 in property damage and no injuries or fatalities.

Table 3.42 provides information about damaging lightning events in the

Table 3.42. NCDC Reported Events and Damages from Lightning, 1998-2017*

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Branson	7/4/2001	0	0	\$25,000	\$0
Branson	11/14/2005	0	0	\$5,000	\$0
Taney County	5/17/2015	0	0	\$500,000	\$0
Taney County	3/26/2017	0	0	\$250,000	\$0
Total		0	0	\$780,000	\$0

Source: NCDC Storm Data; * = Through July 2017

Probability of Future Occurrence

Thunderstorm Winds

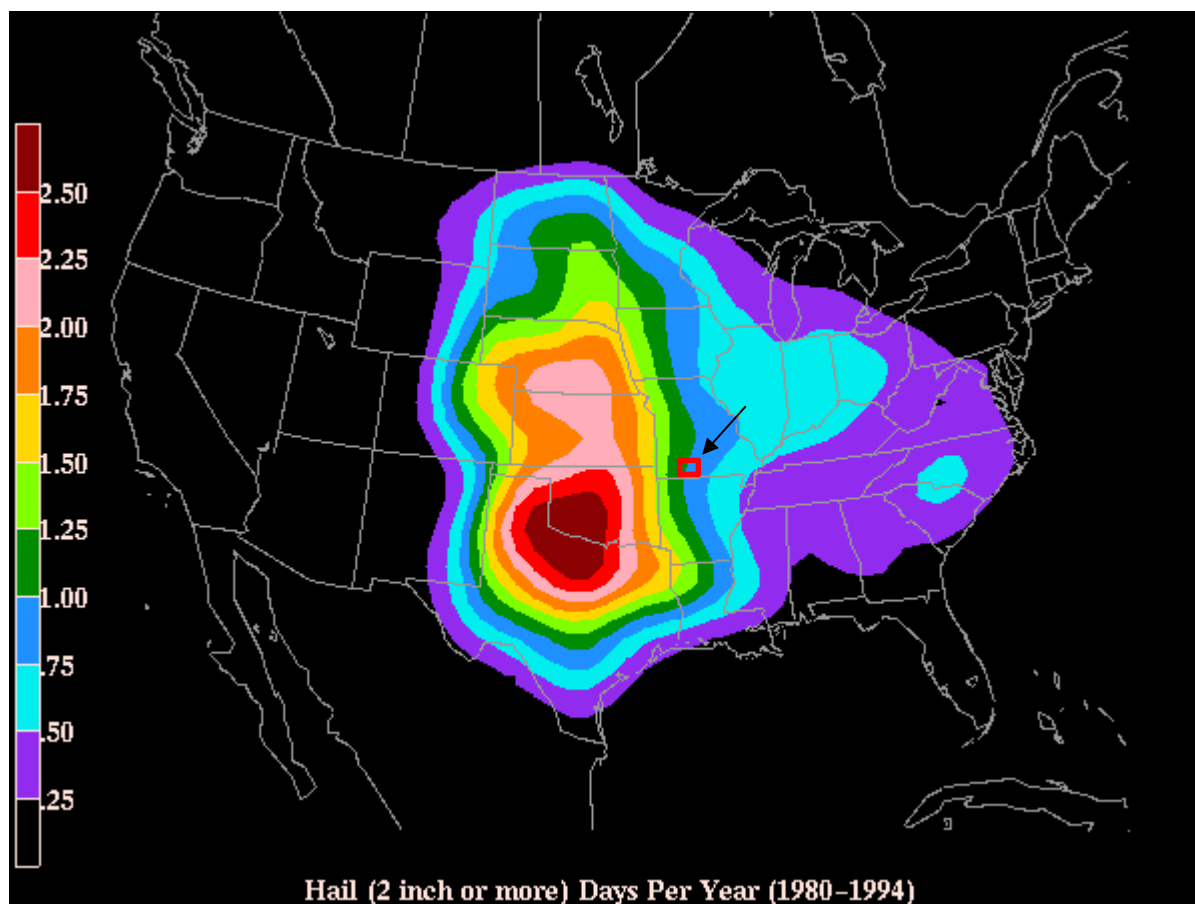
There were 124 thunderstorm wind events over the 20 year period reported to the NCDC from 1998-2017. This is an average of about 6 (6.2) thunderstorm wind occurrences in any given year with a 100% probability rate. There were 46 events that resulted in 5 injuries and \$1,379,000 in property damage. This is an average of 2.3 damaging events per year with \$68,950 of annualized losses.

Hail

There have been 128 recorded hail events over the 20 year period from 1998-2017. This is an average of about 6 (6.4) hail events in any given year with a 100% probability rate. There were four events that resulted in \$565,000 in property damage. This is an average of one damaging event every five years with average losses per damaging event of \$141250.

Figure 3.31 is a map based on hailstorm data from 1980-1994. It shows the probability of hailstorm occurrence (2" diameter or larger based on number of days per year. Taney County is bisected by the green and blue zones on the map meaning that the county should experience hail greater than 2" in diameter one to 1.25 days per year.

Figure 3.31. Annual Hailstorm Probability (2" diameter or larger), U 1980- 1994



Source: NSSL, http://www.nssl.noaa.gov/users/brooks/public_html/bighail.gif

High Winds

There were only two high wind events reported to the NCDC in the 20 year period from 1998-2017. This is an average of a 10% probability of a high wind event in any given year. Only one of the events was damaging, causing \$10,000 in property damage. The single event gives a 5% probability of a damaging event in any given year.

Lightning

There were four lightning events reported to the NCDC from 1998-2017, but they caused \$780,000 in property damage. This means that there is a 20% probability of a lightning event occurring in any given year, with an average loss of \$195,000 per damaging event. It should be noted that these are only events that result in fatality, injury, or property/crop damage.

Vulnerability

Vulnerability Overview

Thunderstorms, high wind, hail, and lightning pose varying risk for jurisdictions in Taney County. Downbursts resulting from thunderstorms can be just as damaging as an EF-1 tornado. Thunderstorm winds have resulted in five injuries and zero deaths in Taney County along with \$1,378,000 in property damage. Poorly built structures, barns, outbuildings are more vulnerable to the impact of high winds during thunderstorms. Both high winds and hail can damage roofs. Hail can also damage crops and dent cars and trucks. Total hail damage recorded in the NCDC database from 1998 – 2017 has been \$565,000. One hail event accounted for \$500,000 in damages. Lightning can cause wildfires and structural fires, damage electrical utilities causing power outages, and sometimes fatalities.

Potential Losses to Existing Development

The average annual loss determined from historical losses for thunderstorms, high wind, hail and lightning are indicators of the potential losses to existing development. Thunderstorm wind events in the county have damaged critical facilities, schools, local governments, and private property. Potential annual losses throughout Taney County are: Thunderstorm - \$68,900; Hail - \$28,250. Potential annual losses from high winds and lightning are not calculable, but should be expected to occur and cause damages in the future.

Previous and Future Development

Growth in Taney County is occurring at a moderate rate, with Branson and Hollister currently seeing the most growth in terms of population and housing built. Additional development in these areas results in the exposure of more households and businesses vulnerable to damages from high winds, hail, and lightning.

Hazard Summary by Jurisdiction

Although thunderstorms/high winds/lightning/hail events are area-wide, communities with a greater percentage of structures built prior to 1939 are considered to be more vulnerable to the impact of high wind and hail damage. Because of the relatively recent rapid growth in Taney County, only one

jurisdiction in Taney County has over 10% of its homes built in 1939 or earlier: Taneyville. New construction and population growth is increasing the exposure and risk to this hazard; however, the communities in Taney County with building codes will assist in mitigating the effects of strong storms.

School district facilities are at risk to the damages of thunderstorms, high wind, hail and lightning. Ancillary buildings at all school districts such as storage facilities will continue to be at risk; however, risk to student populations has been mitigated by the construction of safe rooms at Forsyth R-III and Hollister R-V.

Community Comments on Hazard

Seven of the 13, or approximately 54% of survey respondents identified severe thunderstorms/high wind as one of the top two highest threats to their neighborhood. Five rated this hazard as the number one threat. These citizens resided in the cities of Branson, Hollister, Rockaway Beach, Forsyth, and unincorporated Taney County. Two citizens are in the Branson R-IV school district, one in Taneyville R-II, two in Hollister R-V, one in Kirbyville R-VI, and one in Forsyth R-III.

In the past ten years, five respondents have experienced hail and/or severe thunderstorm/high wind, and are concerned with the impact on their household. Additionally, all survey respondents expressed some level of concern with severe thunderstorms/high wind.

Problem Statement

Poorly built structures, barns, and outbuildings are more vulnerable to the impact of high winds during thunderstorms. High winds can topple utility poles and lead to power outages. Both high winds and hail can damage roofs. Hail can also damage crops and dent cars and trucks. People are also at risk to injury and death during high wind events. Crop insurance mitigates the risk to farmers and the agriculture sector within the county. Lightning events have caused structural fires and can strike electrical utilities leading to power outages.

The risk of property damage, injury, and death in the county can be mitigated by identifying safe refuge areas in public buildings, nursing homes and other facilities that house vulnerable populations that do not have a safe room. The purchasing and installation of NOAA weather radios in schools, government buildings and public areas may assist in providing early warning to allow for public to seek shelter during high wind events. Education and hazard awareness programs in public schools would also increase public safety in the event of severe thunderstorm events.

3.4.9 Tornado

Sources:

- Enhanced F Scale for Tornado Damage, NWS, www.spc.noaa.gov/faq/tornado/ef-scale.html;
- Enhanced Fujita Scale's damage indicators and degrees of damage table, NOAA Storm Prediction Center, www.spc.noaa.gov/efscale/ef-scale.html;
- Tornado Activity in the U.S. map (1950-2006), FEMA 320, Taking Shelter from the Storm, 3rd edition;
- Tornado Alley in the U.S. map, <http://www.tornadochaser.net/tornalley.html>
- Tornado History Project, map of tornado events, <http://www.tornadohistoryproject.com/tornado/Missouri>

Hazard Profile

Hazard Description

The NWS defines a tornado as “a violently rotating column of air extending from a thunderstorm to the ground.” It is usually spawned by a thunderstorm and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. Often, vortices remain suspended in the atmosphere as funnel clouds. When the lower tip of a vortex touches the ground, it becomes a tornado.

High winds not associated with tornadoes are profiled separately in this document in **Section 3.4.8**, Thunderstorm/High Wind/Hail/Lightning.

Essentially, tornadoes are a vortex storm with two components of winds. The first is the rotational winds that can measure up to 500 miles per hour, and the second is an uplifting current of great strength. The dynamic strength of both these currents can cause vacuums that can overpressure structures from the inside.

Although tornadoes have been documented in all 50 states, most of them occur in the central United States due to its unique geography and presence of the jet stream. The jet stream is a high-velocity stream of air that separates the cold air of the north from the warm air of the south. During the winter, the jet stream flows west to east from Texas to the Carolina coast. As the sun moves north, so does the jet stream, which at summer solstice flows from Canada across Lake Superior to Maine. During its move northward in the spring and its recession south during the fall, the jet stream crosses Missouri, causing the large thunderstorms that breed tornadoes.

A typical tornado can be described as a funnel-shaped cloud in contact with the earth's surface that is “anchored” to a cloud, usually a cumulonimbus. This contact on average lasts 30 minutes and covers an average distance of 15 miles. The width of the tornado (and its path of destruction) is usually about 300 yards. However, tornadoes can stay on the ground for upward of 300 miles and can be up to a mile wide. The National Weather Service, in reviewing tornadoes occurring in Missouri between 1950 and 1996, calculated the mean path length at 2.27 miles and the mean path area at 0.14 square mile.

The average forward speed of a tornado is 30 miles per hour but may vary from nearly stationary to 70 miles per hour. The average tornado moves from southwest to northeast, but tornadoes have been known to move in any direction. Tornadoes are most likely to occur in the afternoon and evening, but have been known to occur at all hours of the day and night.

Geographic Location

There are no specific likely locations for future occurrences as the threat from this hazard is county-wide.

Severity/Magnitude/Extent

Tornadoes are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 miles per hour and damage paths can be more than one mile wide and 50 miles long. Tornadoes have been known to lift and move objects weighing more than 300 tons a distance of 30 feet, toss homes more than 300 feet from their foundations, and siphon millions of tons of water from water bodies. Tornadoes also can generate a tremendous amount of flying debris or “missiles,” which often become airborne shrapnel that causes additional damage. If wind speeds are high enough, missiles can be thrown at a building with enough force to penetrate windows, roofs, and walls. However, the less spectacular damage is much more common.

Tornado magnitude is classified according to the EF- Scale (or the Enhanced Fujita Scale, based on the original Fujita Scale developed by Dr. Theodore Fujita, a renowned severe storm researcher). The EF- Scale (see **Table 3.43**) attempts to rank tornadoes according to wind speed based on the damage caused. This update to the original F Scale was implemented in the U.S. on February 1, 2007.

Table 3.43. Enhanced F Scale for Tornado Damage

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest ¼-mile (mph)	3 Second Gust (mph)	EF Nu	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Source: The National Weather Service, www.spc.noaa.gov/faq/tornado/ef-scale.html

The wind speeds for the EF scale and damage descriptions are based on information on the NOAA Storm Prediction Center as listed in **Table 3.44**. The damage descriptions are summaries. For the actual EF scale it is necessary to look up the damage indicator (type of structure damaged) and refer to the degrees of damage associated with that indicator. Information on the Enhanced Fujita Scale's damage indicators and degrees of damage is located online at www.spc.noaa.gov/efscale/ef-scale.html.

Table 3.44. Enhanced Fujita Scale with Potential Damage

Enhanced Fujita Scale			
Scale	Wind Speed (mph)	Relative Frequency	Potential Damage
EF0	65-85	53.5%	Light. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage (i.e. those that remain in open fields) are always rated EF0).
EF1	86-110	31.6%	Moderate. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	10.7%	Considerable. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes complete destroyed; large trees snapped or uprooted; light object missiles generated; cars lifted off ground.
EF3	136-165	3.4%	Severe. Entire stores of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166-200	0.7%	Devastating. Well-constructed houses and whole frame houses completely levelled; cars thrown and small missiles generated.
EF5	>200	<0.1%	Explosive. Strong frame houses levelled off foundations and swept away; automobile-sized missiles fly through the air in excess of 300 ft.; steel reinforced concrete structure badly damaged; high rise buildings have significant structural deformation; incredible phenomena will occur.

Source: NOAA Storm Prediction Center, <http://www.spc.noaa.gov/efscale/ef-scale.html>

Enhanced weather forecasting has provided the ability to predict severe weather likely to produce tornadoes days in advance. Tornado watches can be delivered to those in the path of these storms several hours in advance. Lead time for actual tornado warnings is about 30 minutes. Tornadoes have been known to change paths very rapidly, thus limiting the time in which to take shelter. Tornadoes may not be visible on the ground if they occur after sundown or due to blowing dust or driving rain and hail.

Previous Occurrences

In the 23 year period from 1994 to present, there have been 10 tornadoes recorded in Taney County with EF/F Scale ratings ranging from EF0 to EF2 in magnitude. EF0/F0 has been the most frequent EF/F scale magnitude, with seven events. They collectively account for \$215,500 in property damage.

Two EF1/F1 tornados have occurred in Taney County in the last 23 years. The first occurring in Swan, causing \$500,000 in damage. The tornado touched down in rural areas, causing damage to a house, numerous outbuildings, and significant tree damage. The second occurred in Day. The tornado began in Stone County and continued across northeastern Taney County, damaging trees, outbuildings, and a tower, causing \$50,000 in damage.

The most destructive tornado to occur in Taney County in the past 23 years occurred on February 29, 2012 when an EF2 tornado ripped through the Branson area. The tornado began near the Branson and lifted near Kisse Mills. The tornado damaged 14 theaters and attractions, 25 restaurants, 21 hotels, and severally damaged or destroyed nearly 100 homes, including several mobile homes. The tornado caused 37 injuries as it traveled through the business district of Branson. There was heavy damage to the Branson Landing and the Hilton Branson Convention Center Hotel Complex, damaging nearly 70 percent of the Hilton's windows. The total property damage from the tornado was

\$15,000,000.

There are limitations to the use of NCDC tornado data that must be noted. For example, one tornado may contain multiple segments as it moves geographically. A tornado that crosses a county line or state line is considered a separate segment for the purposes of reporting to the NCDC. Also, a tornado that lifts off the ground for less than 5 minutes or 2.5 miles is considered a separate segment. If the tornado lifts off the ground for greater than 5 minutes or 2.5 miles, it is considered a separate tornado. Tornadoes reported in Storm Data and the Storm Events Database are in segments. **Table 3.45** that includes NCDC reported tornado events and damages since 1994 in the planning area.

Table 3.45. Recorded Tornadoes in Taney County , 1994 – 2017*

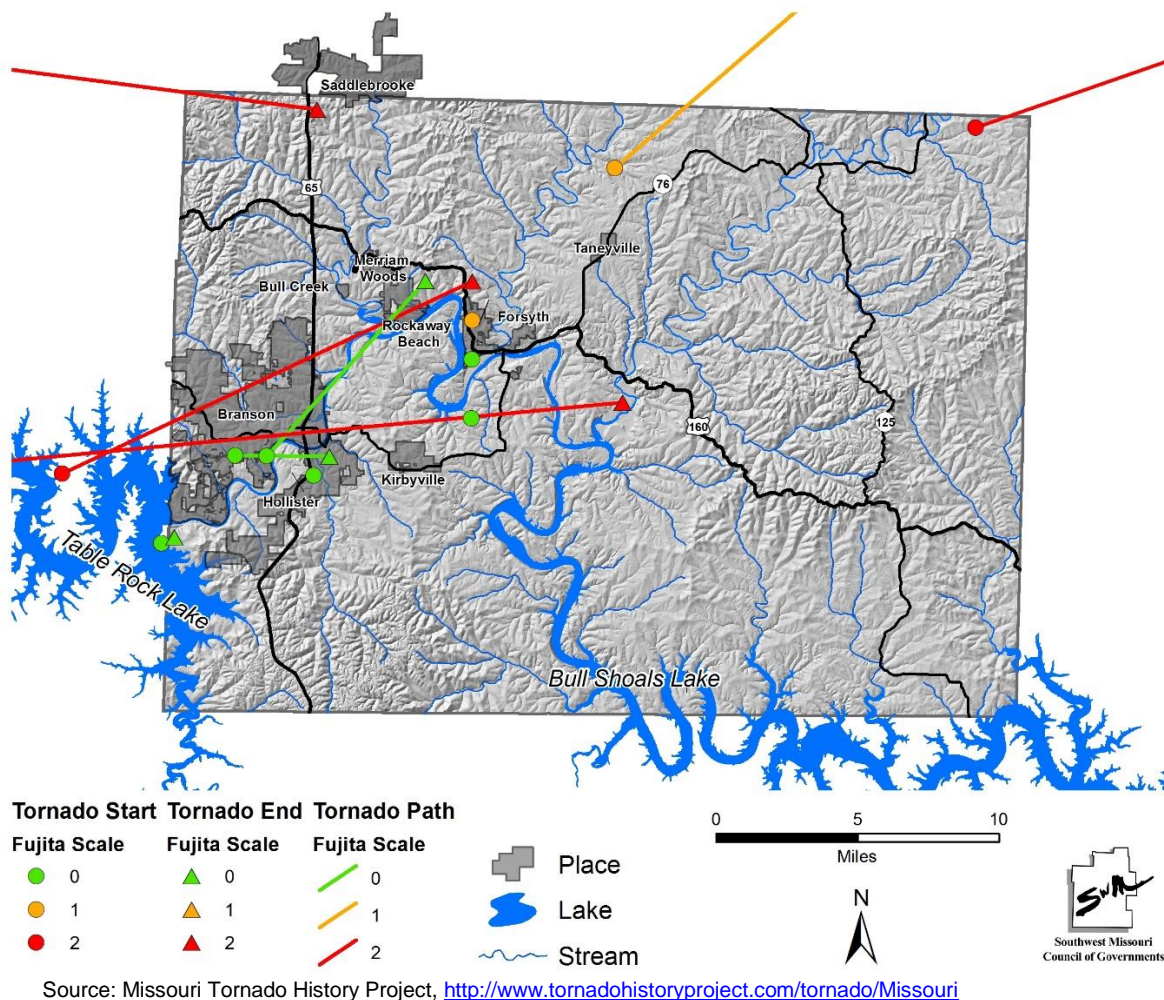
Date	Beginning Location	Ending Location	Length (miles)	Width (yards)	F/EF Rating	Death	Injury	Property Damage	Crop Damages
4/27/1994	Forsyth	Forsyth	0.5	30	F0	0	0	\$500	\$0
6/8/1995	Forsyth	Forsyth	0.1	100	F0	0	0	\$0	\$0
3/11/2006	Branson	Forsyth	8	20	F0	0	0	\$0	\$0
1/8/2008	Branson Memorial Airport	Point Lookout Airport	2.88	20	EF0	0	0	\$75,000	\$0
5/8/2009	Swan	Swan	2.76	150	EF1	0	0	\$500,000	\$0
4/24/2010	Branson Memorial Airport	Branson Memorial Airport	0.51	70	EF0	0	0	\$20,000	\$0
5/22/2011	Day	Day	4.75	200	EF1	0	0	\$50,000	\$0
2/29/2012	Branson Memorial Airport	Kissee Mills	16.54	400	EF2	0	37	\$15,000,000	\$0
3/09/2017	Ike	Ike	0.1	75	EF0	0	0	\$20,000	\$0
3/09/2017	Forsyth	Forsyth	1.9	100	EF0	0	0	\$100,000	\$0
Total						0	37	\$15,765,500	\$0

Source: National Climatic Data Center, <http://www.ncdc.noaa.gov/stormevents/>

* = Through July, 2017

Figure 3.32 shows historic tornado paths in Taney County.

Figure 3.32. Taney County Map of Historic Tornado Events



There are no records in the USDA Risk Management Agency Database that refer to crop damages as a result of tornadoes in the past 10 years.

Probability of Future Occurrence

According to the NCDC storm event records there have been 10 tornado events from 1994 to present. Based on the past occurrence of tornadoes in Taney County, there is a 43% probability that the county will experience a tornado in any given year as of 2017.

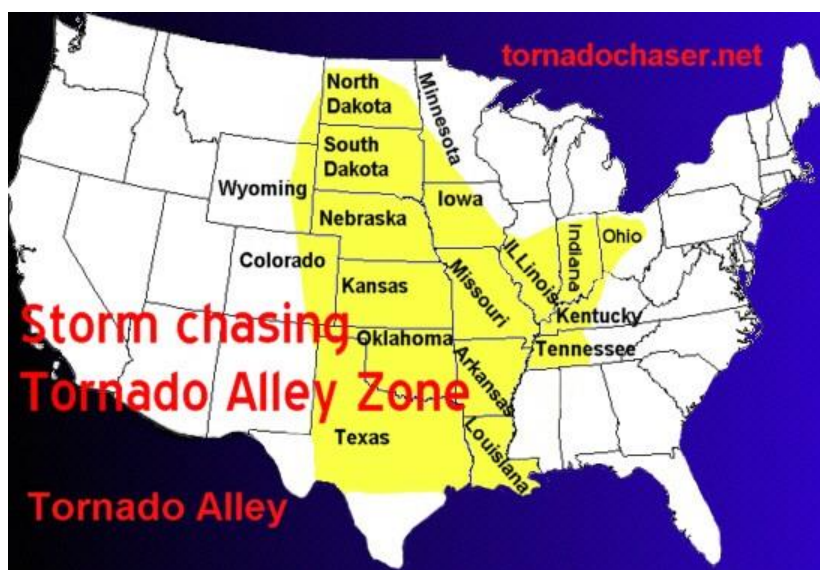
The potential severity of effects from tornadoes will continue to be high. Taney County will continue to experience injuries and property damages from tornadoes. However, technological advances will facilitate earlier warnings than previously available. This, combined with a vigorous public education program and improved construction techniques, provides the potential for significant reductions in the number of deaths and injuries, as well as reduced property damage.

Vulnerability

Vulnerability Overview

Taney County is located in a region of the U.S. with high frequency of dangerous and destructive tornadoes referred to as “Tornado Alley” as is the entire state. **Figure 3.33** illustrates areas where dangerous tornadoes historically have occurred.

Figure 3.33. Tornado Alley in the U.S.



Source: <http://www.tornadochaser.net/tornalley.html>

The 2013 State Plan used a methodology to the vulnerability of each county in the state to determine each county's vulnerability to tornadoes. While this approach attempts to prioritize tornado vulnerable counties, it does not identify any particular geographic patterns to tornado risk. The state's analysis combined annualized losses and frequency of occurrence to determine the greatest likelihood of being impacted by a tornado. The state's vulnerability rating ranged from very high, high, and moderate. The vulnerability rating for Taney County was rated at very high risk.

Potential Losses to Existing Development

During the 23 year period from 1994 to 2017, a total of \$15,765,500 in property losses equates to \$685,456 in average annual losses. The most common tornado events recorded in the county are F0 and F1 magnitude events. Seven of the 10 tornado events on record have been F0 magnitude. There were also two F1, and one F2 magnitude tornadoes recorded in the NCDC data. Potential losses for each jurisdiction were estimated based on the total exposure with applied damage factor of 1%. **Table 3.46** provides estimates for total losses by jurisdiction.

Table 3.46. Estimated Potential Tornado Losses by Jurisdiction

Jurisdiction	Total Exposure (\$)
Taney County	\$15,217,672
Branson	\$9,100,159
Forsyth	\$400,116
Hollister	\$636,342
Merriam Woods	\$73,600
Rockaway Beach	\$95,060
Bull Creek	\$17,778
Bradleyville R-I School District	\$921,915
Branson R-IV School District	\$16,592,034
Forsyth R-III School District	\$3,372,163
Hollister R-V School District	\$10,000,000
Kirbyville R-VI School District	\$1,291,454
Mark Twain R-VIII School District	N/A
Taneyville R-II School District	\$606,310

Previous and Future Development

Development across the county and within incorporated jurisdictions increases the potential for losses. During the 23 year period, the average annual losses countywide was \$685,456, this indicates the potential future losses if the current development were to remain, with no additional. Future development and population increases will increase exposure to damage. It is anticipated that several communities will experience additional new development, but many use building codes which may help reduce the risk of building damage.

Hazard Summary by Jurisdiction

Although tornado events are area-wide hazard, communities with a greater percentage of structures built prior to 1939 are considered to be more vulnerable to the impact of high wind and hail damage. Taneyville, the jurisdiction in Taney County with the highest percentage of homes built before 1939, has 11.7% of its all residential structures, so is at the highest risk of tornado damage.

School and special district facilities are at risk to the damages of tornadoes. Risk to student populations has been mitigated by construction of safe rooms on the Forsyth R-III and Hollister R-V campuses. No other school districts in Taney County have a FEMA rated shelter.

Community Comments on Hazard

Three survey respondents stated that tornado was a threat to their neighborhood. One person listed it as the highest threat, and two stated it was the second highest threat. Both listing tornado as the second highest live in the City of Hollister and in the Hollister R-V school district. It should be noted that FEMA rated shelters are available at the Hollister R-V school district facilities. All 13 survey respondents stated they were concerned about the impact a tornado could have on their property, even if they did not list it as one of the top two concerning hazards.

Problem Statement

Tornados are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 miles per hour and damage paths can be more than one mile wide and 50 miles long. Significant tornado events in Taney County have resulted in 37 injuries, \$15,765,500 in property damage over the last 23 years. Taney County is rated at a very high risk in the 2013 State Hazard Mitigation Plan.

The risk of property damage, injury, and death in the county can be mitigation by the construction of FEMA safe rooms in new schools, daycares, and nursing homes. Additionally, encouraging the purchase and installation of NOAA weather radios, and promoting local severe weather alert applications for mobile communications can provide early warnings for severe weather which could result in lives saved. For communities that do not have the capacity to construct FEMA safe rooms, simply identifying and creating plans that identify strong, safe places in schools, large facilities, and other establishments serving the public may help in mitigating impacts of tornados.

3.4.10 Winter Weather/Snow/Ice/Severe Cold

Some specific sources for this hazard are:

- Wind chill chart, National Weather Service, <http://www.nws.noaa.gov/om/winter/windchill.shtml>;
- Average Number of House per year with Freezing Rain, American Meteorological Society. "Freezing Rain Events in the United States." <http://ams.confex.com/ams/pdfpapers/71872.pdf>;
- USDA Risk Management Agency, Insurance Claims, <http://www.rma.usda.gov/data/cause.htm>
- Any local Road Department data on the cost of winter storm response efforts.
- National Climatic Data Center, Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>

Hazard Profile

Hazard Description

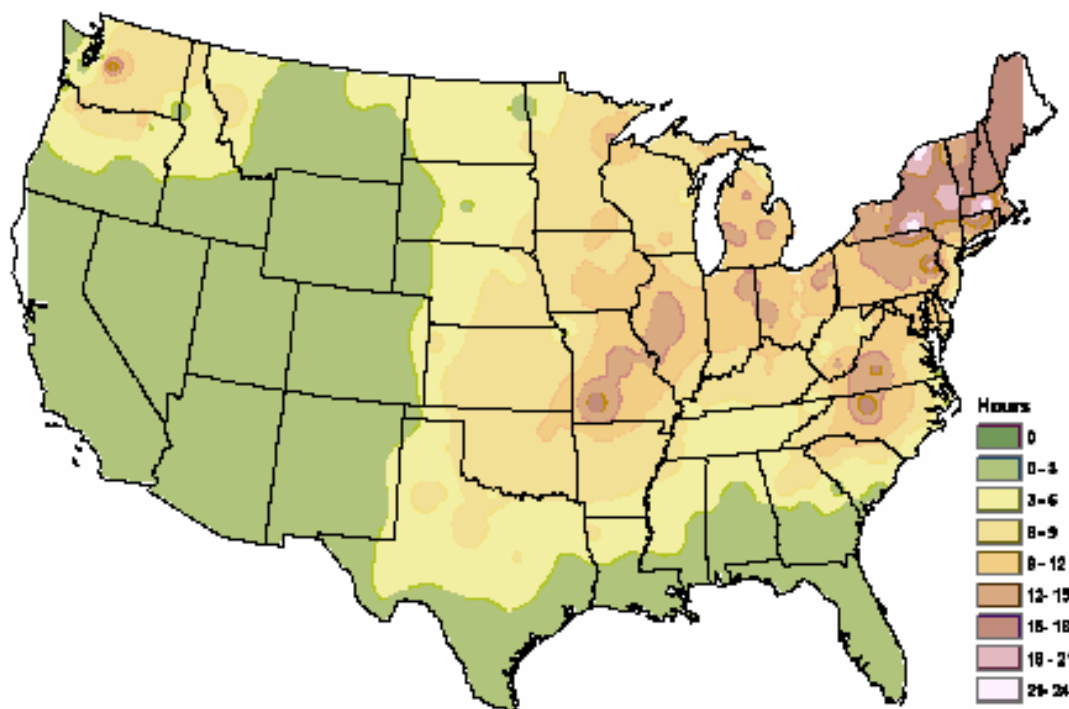
A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. The National Weather Service describes different types of winter storm events as follows.

- **Blizzard**—Winds of 35 miles per hour or more with snow and blowing snow reducing visibility to less than ¼ mile for at least three hours.
- **Blowing Snow**—Wind-driven snow that reduces visibility. Blowing snow may be falling snow and/or snow on the ground picked up by the wind.
- **Snow Squalls**—Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant.
- **Snow Showers**—Snow falling at varying intensities for brief periods of time. Some accumulation is possible.
- **Freezing Rain**—Measurable rain that falls onto a surface with a temperature below freezing. This causes it to freeze to surfaces, such as trees, cars, and roads, forming a coating or glaze of ice. Most freezing-rain events are short lived and occur near sunrise between the months of December and March.
- **Sleet**—Rain drops that freeze into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and does not stick to objects.

Geographic Location

The entire county is vulnerable to heavy snow, ice, extreme cold temperatures and freezing rain. **Figure 3.34** depicts the average number of hours per year with freezing rain. Taney County is located in a zone that can expect 18 – 21 hours of freezing rain per year.

Figure 3.34. NWS Statewide Average Number of Hours per Year with Freezing Rain



Source: American Meteorological Society. "Freezing Rain Events in the United States." <http://ams.confex.com/ams/pdfpapers/71872.pdf>

Severity/Magnitude/Extent

Severe winter storms include extreme cold, heavy snowfall, ice, and strong winds which can push the wind chill well below zero degrees in Taney County. Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. Ice can also become a problem on roadways if the air temperature is high enough that precipitation falls as freezing rain rather than snow.

Extreme cold often accompanies severe winter storms and can lead to hypothermia and frostbite in people without adequate clothing protection. Cold can cause fuel to congeal in storage tanks and supply lines, stopping electric generators. Cold temperatures can also overpower a building's heating system and cause water and sewer pipes to freeze and rupture. Extreme cold also increases the likelihood for ice jams on flat rivers or streams. When combined with high winds from winter storms, extreme cold becomes extreme wind chill, which is hazardous to health and safety.

The National Institute on Aging estimates that more than 2.5 million Americans are elderly and especially vulnerable to hypothermia, with the isolated elders being most at risk. About 10 percent of people over the age of 65 have some kind of bodily temperature-regulating defect, and 3-4 percent of all hospital patients over 65 are hypothermic.

Also at risk are those without shelter, those who are stranded, or who live in a home that is poorly insulated or without heat. Other impacts of extreme cold include asphyxiation (unconsciousness or

death from a lack of oxygen) from toxic fumes from emergency heaters; household fires, which can be caused by fireplaces and emergency heaters; and frozen/burst pipes.

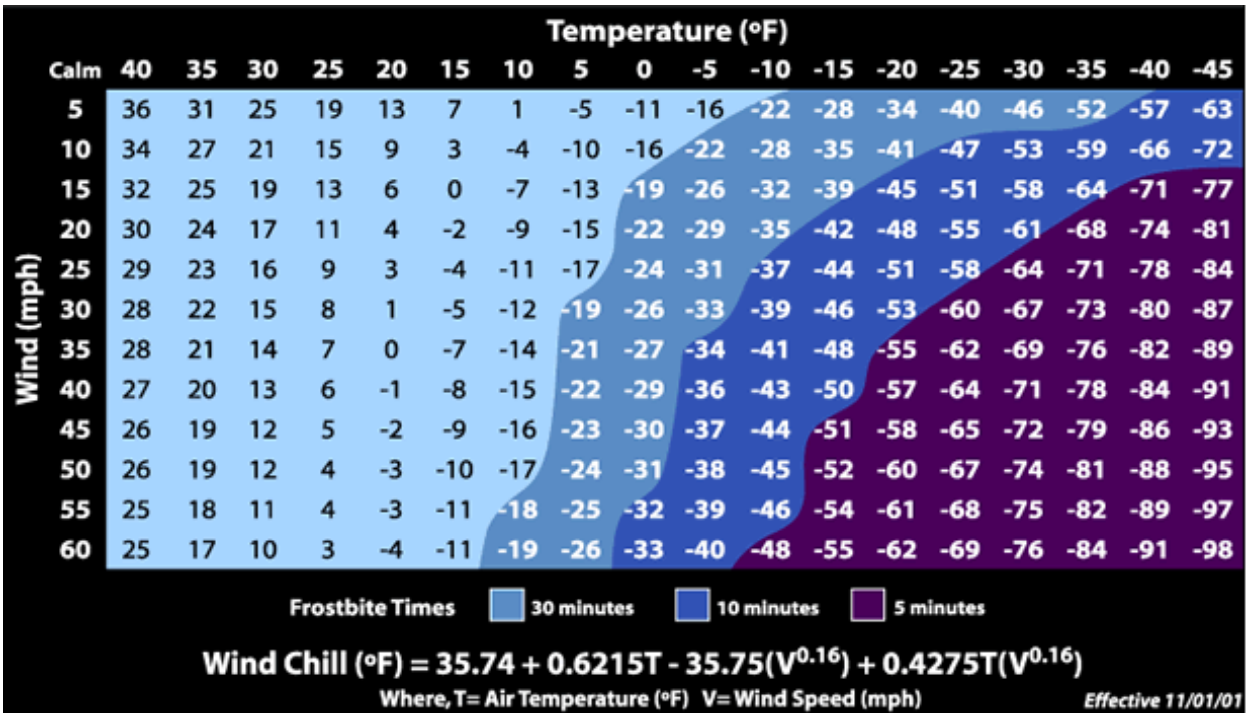
Buildings with overhanging tree limbs are more vulnerable to damage during winter storms when limbs fall. Businesses experience loss of income as a result of closure during power outages. In general heavy winter storms increase wear and tear on roadways though the cost of such damages is difficult to determine. Businesses can experience loss of income as a result of closure during winter storms.

Overhead power lines and infrastructure are also vulnerable to damages from winter storms. In particular ice accumulation during winter storm events damage to power lines due to the ice weight on the lines and equipment. Damages also occur to lines and equipment from falling trees and tree limbs weighted down by ice. Potential losses could include cost of repair or replacement of damaged facilities, and lost economic opportunities for businesses.

Secondary effects from loss of power could include burst water pipes in homes without electricity during winter storms. Public safety hazards include risk of electrocution from downed power lines. Specific amounts of estimated losses are not available due to the complexity and multiple variables associated with this hazard. Standard values for loss of service for utilities reported in FEMA’s 2009 BCA Reference Guide, the economic impact as a result of loss of power is \$126 per person per day of lost service.

Wind can greatly amplify the impact of cold ambient air temperatures. Provided by the National Weather Service, **Figure 3.35** below shows the relationship of wind speed to apparent temperature and typical time periods for the onset of frostbite.

Figure 3.35. Wind Chill Chart



Source: National Weather Service, <http://www.nws.noaa.gov/om/winter/windchill.shtml>

While winter storms, cold, frost, and freeze have the potential to take a substantial toll on crop production in Taney County, there have been no records of crop insurance paid specifically for winter weather damages since 1998. The only record of crop insurance since 1998 in Taney County was in 2017. The payment was for \$1,227 for an unspecified crop and cause of damage.

Previous Occurrences

There were 30 recorded events in the NCDC database for Blizzard, Extreme Cold/Wind Chill, Frost/Freeze, Heavy Snow, Ice Storm, Sleet, and Winter Storm in Taney County from 1997 - 2016. **Table 3.47** includes the number of occurrences of these Winter Weather events. **Table 3.48** includes the two weather events that caused damage, with event narratives listed following the table.

Table 3.47. NCDC Taney County Winter Weather Events Summary, 1998-2017

Type of Event	Number of Occurrences	# of Deaths	# of Injuries	Property Damages	Crop Damages
Severe Cold	2	0	0	0	\$0
Frost/Freeze	1	0	0	\$0	\$1,210,000
Heavy Snow	1	0	0	\$0	\$0
Ice Storm	3	0	0	\$0	\$0
Winter Storm	22	0	0	\$0	\$0

Source: NCDC, data accessed July, 2017

Table 3.48. NCDC Taney County Winter Weather Damaging Events, 1997-2016

Type of Event	Date	# of Deaths	# of Injuries	Property Damages	Crop Damages
Heavy Snow	1/8/1997	0	0	\$20,000	\$0
Frost/Freeze	4/7/2007	0	0	\$0	\$1,210,000
Total		0	0	\$20,000	\$1,210,000

Source: NCDC, data accessed July, 2017

January 1997 Heavy Snow

Six inches or more of snow fell on Southwest Missouri on January 8, 1997. The heaviest band occurred from Cassville to Springfield, where up to ten inches was recorded. Property damages in Taney County amounted to \$20,000.

April 2007 Frost/Freeze

Temperatures reached below freezing on the nights of April 7th, 8th, and 9th causing damage to matured crops in Southwest Missouri. Due to unusually warm conditions in the month of March, vegetation growth began early across the region. Hay crops and fescue seed suffered damage, along with 90% of wheat crop. Total crop damage in Taney County amounted to \$1,210,000.

Probability of Future Occurrence

The probability for all of the different types of winter weather are included as one probability, since one storm generally includes multiple types of events. There were 30 severe winter weather events in

Taney County from 1997 to 2016. This equates to a 100% probability of occurrence in any given year.

Vulnerability

Vulnerability Overview

Severe winter storms include extreme cold, heavy snowfall, ice, and strong winds which can push the wind chill well below zero degrees in the planning area. Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. People over 65 and those living in poverty have an increased risk of hypothermia and frostbite due to extreme cold and wind chill.

In the 2013 State Plan, seven factors were considered in determining overall severe winter storm vulnerability as follows: housing density, likelihood of occurrence, building exposure, crop exposure, average annual property loss ratio, average annual crop insurance claims and social vulnerability. The state ranked each of these criteria using a scale from one to five, one being lowest and five being the highest, to rank each county's vulnerability to severe winter weather. Taney County received a vulnerability rating for each criteria as follows: Housing Density Rating: medium-low, Likelihood rating: low, Property Loss Ratio Rating: medium-low, Crop Exposure Rating: low, Social Vulnerability Index: medium-high. This equates to an overall vulnerability rating of medium-low.

Potential Losses to Existing Development

During the 20 year period from 1997 to 2016, a total of \$20,000 in property damage equates to \$1,000 in average annual losses countywide.

Previous and Future Development

Increased development and any resulting increase in population will increase exposure to damage from severe winter weather. Future commercial development can expect functional downtime and decreased revenues during periods of severe winter weather. Future construction of facilities that will serve vulnerable populations will need to be prepared for extreme weather conditions. Road construction in the county will increase the need for snow removal and salt to keep transportation lifelines open during periods of severe winter weather. Any increase in agriculture crop production will also increase the risk of exposure.

Hazard Summary by Jurisdiction

Severe winter weather can cause power outages and put structures at risk to fires when individuals in homes resort to fuel heaters. The risk of extreme cold deaths and frostbite varies among segments of the populations. People over 65 and those living below the poverty level have an increased vulnerability to severe winter weather. **Table 3.49** includes information on populations over 65 and the percent living below the poverty level by jurisdiction.

Table 3.49. Population over 65 and Percent Living Below the Poverty Level by Jurisdiction

Jurisdiction	% of Families Living Below Poverty Level	Population over 65
Taney County	13.2	10,249
City of Branson	13.3	2,272
City of Forsyth	7.0	658
City of Hollister	25.9	817
City of Merriam Woods	17.9	230
City of Rockaway Beach	22.4	121
Village of Bull Creek	46.9	13
Village of Kirbyville	32.9	23
Village of Saddlebrooke	2.9	62
Village of Taneyville	25.0	55

Source: Census.gov; 2011-2015 ACS 5-year Estimates

Community Comments on Hazard

Three of the thirteen survey respondents selected severe winter weather as the number one threat to their neighborhood, and two additional respondents selected it as the number two threat. Two of these respondents reside in unincorporated Taney County, while the others live in Branson, Rockaway Beach, and Merriam Woods. Four of the five respondents designating severe winter weather as a threat live in the Branson R-IV school district. Twelve of the thirteen community members expressed some level of concern with severe winter weather, with four persons having experienced some severe winter weather type of damage in the past ten years.

Problem Statement

Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. People over 65 and those living in poverty have an increased risk of hypothermia and frostbite due to extreme cold and wind chill.

Organizing outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers can help reduce the potential exposure to harsh winter weather. Additionally, identifying debris disposal and burning locations can assist in facilitating recovery efforts after a significant winter storm or ice incident.

4 MITIGATION STRATEGY

4	MITIGATION STRATEGY	4.1
4.1	<i>Goals.....</i>	4.1
4.2	<i>Identification and Analysis of Mitigation Actions.....</i>	4.2
4.3	<i>Implementation of Mitigation Actions</i>	4.6

44 CFR Requirement §201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

This section presents the mitigation strategy updated by the Mitigation Planning Committee (MPC) based on the risk assessment. The mitigation strategy was developed through a collaborative group process. The process included review of general goal statements to guide the jurisdictions in lessening disaster impacts as well as specific mitigation actions to directly reduce vulnerability to hazards and losses. The following definitions are taken from FEMA’s *Local Hazard Mitigation Review Guide* (October 1, 2012).

- **Mitigation Goals** are general guidelines that explain what you want to achieve. Goals are long-term policy statements and global visions that support the mitigation strategy. The goals address the risk of hazards identified in the plan.
- **Mitigation Actions** are specific actions, projects, activities, or processes taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementing mitigation actions helps achieve the plan’s mission and goals.

4.1 Goals

44 CFR 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.

This planning effort is an update to Taney County’s existing hazard mitigation plan approved by FEMA on January 17, 2013. Therefore, the goals from the 2013 Taney County Hazard Mitigation Plan were reviewed to see if they were still valid, feasible, practical, and applicable to the defined hazard impacts. The MPC conducted a discussion session during their meeting to review and update the plan goals. To ensure that the goals developed for this update were comprehensive and supported State goals, the 2013 State Hazard Mitigation Plan goals were reviewed. The MPC also reviewed the goals from current surrounding county plans.

Discussion of the previously approved goals involved determining the application of the goals to today and validity of the language used. It was determined that the goals still applied and so, were unchanged for this plan update. In the 2013 Plan, the organization of the actions included broad goals and a set of objectives linking the actions to the goals. The MPC opted to keep the goals from the 2013 Plan and eliminate the objective statements, moving forward with broad goals and specific mitigation actions. Objectives seemed to add a layer of complication and potential confusion. During this update process, the intent was to provide a usable set of actions that each

jurisdiction was able to work towards partial or full implementation, and objectives seemed unnecessary.

The Plan update goals and objectives are as follows:

Goal 1: Protect the lives and livelihoods of all citizens.

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure in a disaster.

4.2 Identification and Analysis of Mitigation Actions

44 CFR Requirement §201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

During the second MPC meeting, the results of the risk assessment update were provided to the MPC members for review and the key issues were identified for specific hazards. Changes in risk since adoption of the previously approved plan were discussed.

The MPC determined to include problem statements in the plan update at the end of each hazard profile, which had not been done in the previously approved plan. The problem statements summarize the risk to the planning area presented by each hazard, and include possible methods to reduce that risk. Use of the problem statements allowed the MPC to recognize new and innovative strategies for mitigate risks in the planning area.

Jurisdiction representatives on the MPC were encouraged to review the details of the risk assessment vulnerability analysis specific to their jurisdiction, and the previously identified mitigation actions prior to Meeting #3. Representatives were provided a link to the FEMA's publication, Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013). This document was developed by FEMA as a resource for identification of a range of potential mitigation actions for reducing risk to natural hazards and disasters.

The focus of Meetings #3 and #4 was to update the mitigation strategy. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during Meeting #3:

- A list of actions proposed in the previous mitigation plan and discussing each individually regarding progress made and continued relevance
- Input during meetings
- Responses to Data Collection Questionnaires- where jurisdictions had reported progress made on previous actions

During Meeting #3, few new actions were proposed by the committee, but numerous actions were reworded. Much of the discussion surrounded making actions SMART: specific, measurable, achievable, relevant, and time-bound. SMCOG staff provided some recommended altered language for some items, and general discussion by the MPC provided some significant changes to many actions and to which jurisdictions actions were relevant.

The MPC members reviewed the actions from the previously approved plan for progress made since the plan had been adopted. This was done as part of the data collection questionnaire

process. Each jurisdiction was instructed to provide information regarding the “Action Status” with one of the following status choices:

- Completed, with a description of the progress,
- Not Started/Continue in Plan Update, with a discussion of the reasons for lack of progress,
- In Progress/Continue in Plan Update, with a description of the progress made to date or
- Deleted, with a discussion of the reasons for deletion.

Based on the status updates, there were 20 completed actions, 27 deleted actions, and 213 continuing actions.

Table 4.1 provides a summary of the action status for each jurisdiction:

Table 4.1. Action Status Summary

Jurisdiction	Completed Actions	Deleted Actions	Continuing Actions
Taney County	1.2.3	2.1.2, 2.1.3, 2.2.2, 3.2.1, 3.3.2	1.1.1, 1.1.2, 1.1.3, 1.2.4, 1.2.5, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 2.1.1, 2.2.4, 3.1.1, 3.1.2, 3.2.3, 3.3.1, 3.3.3
City of Branson			1.1.1, 1.1.2, 1.2.1, 1.2.3, 1.2.4, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.2.4, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 3.2.3, 3.3.1, 3.3.2, 3.3.3
City of Forsyth	1.2.1, 3.2.1	2.2.4	1.1.1, 1.1.2, 1.1.3, 1.2.3, 1.2.4, 1.2.5, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 2.1.1, 2.1.2, 2.1.3, 2.1.4, 3.1.1, 3.1.2, 3.2.2, 3.2.3, 3.3.1, 3.3.2
City of Hollister	3.1.4		1.1.1, 1.1.2, 1.1.3, 1.2.3, 1.2.4, 1.2.5, 1.3.1, 1.3.2, 1.3.5, 2.1.1, 2.1.2, 2.1.4, 2.2.2, 2.2.3, 2.2.4, 3.1.1, 3.1.2, 3.1.3, 3.2.2, 3.3.1, 3.3.2, 3.3.3
City of Merriam Woods			1.1.1, 1.1.2, 1.1.3, 1.2.3, 1.2.4, 1.2.5, 1.3.1, 1.3.2, 1.3.4, 1.3.5, 2.1.1, 2.1.2, 2.2.2, 2.2.3, 2.2.4, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.2.2, 3.3.1, 3.3.2, 3.3.3
City of Rockaway Beach	2.1.4	1.2.4, 1.3.1, 2.1.2	1.1.1, 1.1.2, 1.1.3, 1.2.1, 1.2.2, 1.2.3, 1.2.5, 1.3.2, 1.3.5, 2.1.1, 2.2.2, 2.2.3, 2.2.4, 3.1.1, 3.1.2, 3.1.4, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3
Village of Bull Creek	2.1.2, 3.2.1, 3.3.2	3.2.3	1.1.1, 1.1.3, 1.2.3, 1.2.4, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 2.1.1, 2.1.3, 2.2.2, 2.2.3, 2.2.4, 3.1.1, 3.1.2, 3.2.2, 3.3.1,
Bradleyville R-I			1.1.1, 1.1.3, 1.1.4, 1.2.3, 1.2.4, 1.2.5, 1.3.1, 1.3.2, 1.3.5, 3.1.1, 3.2.2, 3.3.1
Branson R-IV	1.3.2		1.1.1, 1.1.4, 1.2.3, 1.2.5, 1.3.1, 1.3.2, 3.1.1, 3.2.2, 3.3.1
Forsyth R-III			1.1.1, 1.1.4, 1.2.3, 1.2.5, 1.3.1, 1.3.2, 3.1.1, 3.3.1
Hollister R-V	1.9		1.1.1, 1.1.4, 1.2.3, 1.3.1, 1.3.2, 3.1.1, 3.3.1

Kirbyville R-VI	1.3.1, 1.3.2, 3.2.2	1.1.3, 1.3.5	1.1.1, 1.1.4, 1.2.3, 1.2.4, 1.2.5, 3.1.1, 3.3.1
Taneyville R-II		1.1.3, 1.3.5	1.1.1, 1.1.4, 1.2.3, 1.2.4, 1.2.5, 1.3.1, 1.3.2, 3.1.1, 3.2.2, 3.3.1
OTC Table Rock		1.1.3, 1.3.1, 3.1.1, 3.3.1	1.1.1, 1.1.4, 1.2.3, 1.2.5, 1.3.2
Taney County Regional Sewer District	1.2.5, 2.1.1, 2.1.2, 2.1.4, 3.2.2, 3.2.3, 3.3.2	1.1.2, 1.1.3, 1.2.3, 1.3.1, 1.3.2, 1.3.5	1.1.1, 1.2.4, 3.1.1
Western Taney County Fire District		1.2.4, 1.2.5, 1.3.2	1.1.1, 1.1.2, 1.2.3, 3.1.3, 3.1.4, 3.3.1, 3.3.3

Table 4.2 provides a summary of the completed and deleted actions from the previous plan.

Table 4.2. Summary of Completed and Deleted Actions from the Previous Plan

Completed Actions	Completion Details (date, amount, funding source)
Taney 1.2.3	NOAA All-hazard Radios were made available to anyone 65+ through the Taney County Senior Board. The Taney County COAD/LTRC purchased and provided radios to all residents that were affected by the February 2012 Tornado.
Forsyth 1.2.1	We are a Storm Ready Community – NWS, We have Outdoor Warning sirens maintained annually by a 3rd party company and been kept in the budget to do so. Updated are Severe Weather Response Plan with Regional and Partner approvals. NWS, State and County Level.
Forsyth 3.2.1	Forsyth has fire education programs in place.
Hollister 3.1.4	Hollister has identified debris disposal and burning locations.
Rockaway Beach 2.1.4	Manholes have been raised
Bull Creek 2.1.2	Utilities were moved from underground to overhead due to issues with flooding
Bull Creek 3.2.1	Burn restrictions are implemented
Bull Creek 3.3.2	Completed
Branson R-IV 1.3.2	Plans were revised on 5/10/15. Each building has a master plan.
Hollister R-V 1.1.4	This goal is accomplished through the district's safety plan and with monthly fire, tornado and intruder drills with students and communicated to parents through Facebook and the school website.
Hollister R-V 1.2.3	Schools are equipped with NOAA radios.
Hollister R-V 1.3.1	This was accomplished by the Hollister School District with the construction of two safe rooms.
Hollister R-V 1.3.2	This has been completed through the safe room construction and the coordinated plan for community use during a tornado warning.
Hollister R-V 3.2.2	The Hollister School Board established the goal of safe room construction which then took four years to accomplish with funding and construction. Minor storm water management on school property was resolved by working with the City of Hollister.
Kirbyville R-VI 1.3.1	This was accomplished by the Kirbyville School District with the construction of two safe rooms.
Kirbyville R-VI 1.3.2	This has been completed through the safe room construction.
Kirbyville R-VI 3.2.2	The Kirbyville School Board established the goal of safe room construction for our students and teachers and used local bonding capacity and not FEMA funds to construction the inclement weather safe rooms built to FEMA specs.

Taney County Sewer 1.2.5	District website includes streaming news and weather alerts
Taney County Sewer 2.1.1	District has elevated or flood-proofed four lift stations that were prone to flooding.
Taney County Sewer 2.1.2	District encourages underground electrical construction methods.
Taney County Sewer 2.1.4	District has assessed its WUTFs and lift stations for flooding and made improvements.
Taney County Sewer 3.2.2	District has completed several hazard mitigation improvements since last plan update.
Taney County Sewer 3.2.3	District maintains easements.
Taney County Sewer 3.3.2	District works with communities/cities that is partners with for sewer treatment on reducing flood damage.
Deleted Actions	Reason for Deletion
Taney 2.1.2	Had not seen benefit in putting utilities underground – not a useful action
Taney 2.1.3	PACE program being rescinded
Taney 2.2.2	Building codes not politically feasible
Taney 3.2.1	County can't place burn restrictions
Taney 3.3.2	Too similar to NFIP actions
Forsyth 2.2.4	Forsyth is no longer an NFIP community due to financial considerations
Rockaway Beach 1.2.4	Not feasible at this time
Rockaway Beach 1.3.1	Not feasible at this time
Rockaway Beach 2.1.2	Not feasible at this time
Bull Creek 3.2.3	Not applicable
Hollister R-V 1.1.1	Not applicable to the school district
Hollister R-V 1.1.3	Not applicable to the school district
Hollister R-V 1.3.5	Not applicable to the school district
Kirbyville R-VI 1.1.3	Not applicable to the school district
Kirbyville R-VI 1.3.5	Not applicable to the school district
Taneyville R-II 1.1.1	Not applicable to the school district
Taneyville R-II 1.1.3	Not applicable to the school district
Taneyville R-II 1.3.5	Not applicable to the school district
OTC Table Rock 1.1.3	Not applicable
OTC Table Rock 1.3.1	Not applicable
OTC Table Rock 3.1.1	Not applicable
OTC Table Rock 3.3.1	Not applicable
Taney County Sewer 1.1.2	Not applicable
Taney County Sewer 1.1.3	Not applicable
Taney County Sewer 1.2.3	Not applicable
Taney County Sewer 1.3.1	Not applicable
Taney County Sewer 1.3.2	Not applicable
Taney County Sewer 1.3.5	Not applicable

Source: Previously approved County Hazard Mitigation Plan; Data Collection Questionnaires.

Many jurisdictions found that actions were still relevant and would be ongoing. Many of the continuing actions were re-worded for the 2017 update and are noted as “revised, continuing” on the action sheets. Many of the actions determined to need deleted were due to limited resources or the actions being misidentified as applying to that jurisdiction in the previous plan update.

The actions listed in Tables 4.1 and 4.2 are numbered according to the 2013 Plan and are not consistent with the new numbering in this plan.

4.3 Implementation of Mitigation Actions

44 CFR Requirement §201.6(c)(3)(ii): The mitigation strategy shall include an action strategy describing how the actions identified in paragraph (c)(2)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefits review of the proposed projects and their associated costs.

Jurisdictional MPC members were encouraged to gather community feedback on proposed actions. The Disaster Mitigation Act requires benefit-cost review as the primary method by which mitigation projects should be prioritized. Implementation may be pursued according to when and where damage occurs, available funding, political will, jurisdictional priority, and priorities identified in the Missouri State Hazard Mitigation Plan. The benefit/cost review at the planning stage primarily consisted of a qualitative analysis, and was not the detailed process required grant funding application. For each action, the plan sets forth a narrative describing the types of benefits that could be realized from action implementation. The cost was estimated as closely as possible, with further refinement to be supplied as project development occurs.

FEMA's STAPLEE methodology was used to assess the costs and benefits, overall feasibility of mitigation actions, and other issues impacting project. During the prioritization process, the MPC used worksheets to assign scores. The worksheets posed questions based on the STAPLEE elements as well as the potential mitigation effectiveness of each action. Scores were based on the responses to the questions as follows:

Definitely yes = 3 points
Maybe yes = 2 points
Probably no = 1
Definitely no = 0

The following questions were asked for each proposed action.

S: Is the action socially acceptable?

T: Is the action technically feasible and potentially successful?

A: Does the jurisdiction have the administrative capability to successfully implement this action?

P: Is the action politically acceptable?

L: Does the jurisdiction have the legal authority to implement the action?

E: Is the action economically beneficial?

E: Will the project have an environmental impact that is either beneficial or neutral? (score "3" if positive and "2" if neutral)

Will the implemented action result in lives saved?

Will the implanted action result in a reduction of disaster damage?

The final scores are listed below in the analysis of each action. The worksheets are attached to this plan as part of Appendix B. The STAPLEE final score for each action, absent other considerations, such as a localized need for a project, determined the priority. Low priority action items were those that had a total score of between 0 and 24. Moderate priority actions were those scoring between 25 and 29. High priority actions scored 30 or above. A blank STAPLEE worksheet is shown in **Figure 4.1**

Figure 4.1. Blank STAPLEE Worksheet

XXXXXX COUNTY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN

Action Title:		Jurisdiction:	
Action ID:			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?			
T: Is it Technically feasible and potentially successful?			
A: Does the jurisdiction have the administrative capacity to execute this action?			
P: Is it Politically acceptable?			
L: Is there Legal authority to implement?			
E: Is it Economically beneficial?			
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)			
Will historic structures be saved or protected?			
Could it be implemented quickly?			
STAPLEE Score			

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	
Mitigation Effectiveness Score		

Total Score (STAPLEE Score + Mitigation Effectiveness Score): _____

Priority Level: ☐ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): _____

In addition to the STAPLEE cost benefit review prioritization, at the fourth MPC meeting, an implementation plan for each action was discussed. An action worksheet was used to develop the implementation plan. The action worksheet format is shown in **Table 4.3**.

Table 4.3. Table 4.3 Mitigation Action Worksheet

Action Worksheet	
Name of Jurisdiction:	
Risk / Vulnerability	
Problem being Mitigated:	Provide a brief description of the problem that the action will address
Hazard(s) Addressed:	List the hazard or hazards that will be addressed by this action
Action or Project	
Action/Project Number:	Insert a unique action number for this action for future tracking purposes. This can be a combination of the jurisdiction name, followed by the goal number and action number (i.e. Joplin1.1)
Name of Action or Project:	
Action or Project Description:	Describe the action or project.
Applicable Goal Statement:	Choose the goal statement that applies to this action
Estimated Cost:	Provide an estimate of the cost to implement this action. This can be accomplished with a range of estimated costs.
Benefits:	Provide a narrative describing the losses that will be avoided by implementing this action. If dollar amounts of avoided losses are known, include them as well.
Plan for Implementation	
Responsible Organization/Department:	Which organization will be responsible for tracking this action? Be specific to include the specific department or position within a department.
Action/Project Priority:	Include the STAPLEE score and Priority (H, M, L)
Timeline for Completion:	How many months/years to complete.
Potential Fund Sources:	List specific funding sources that may be used to pay for the implementation of the action.
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Indicate status as New, Continuing Not Started, or Continuing in Progress)
Report of Progress	

The following section organizes the actions for each jurisdiction participating in the Plan, the goal statement that each action falls under, and the completed worksheet for each new and continuing mitigation action.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Taney 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	32, H
Timeline for Completion:	5 Years/Ongoing
Potential Fund Sources:	General County Funds
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	Media interviews/coverage; social media posts

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of public involvement in mitigation activities
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Taney 1.3
Name of Action or Project:	Citizen Preparedness
Action or Project Description:	Promote participation in citizen preparedness activities, such as: Citizen Corps, CERT, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Increases citizen awareness of mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	39, H
Timeline for Completion:	5 years – continuous
Potential Fund Sources:	General County Funds
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Revised, continuing
Report of Progress	Provide public information on programs

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Taney 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$30 per radio
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	36, H
Timeline for Completion:	3 years
Potential Fund Sources:	County offices budget
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Revised, continuing
Report of Progress	Ordered 3; programmed radios for 5 county offices

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Taney 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Existing staff costs + \$1000 advertising
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	36, H
Timeline for Completion:	5 years – continuous
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Promote radios during every spring and fall; target senior groups and past disaster survivors, and low income

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Taney 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Existing staff costs + \$1000 advertising
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	38, H
Timeline for Completion:	5 years – continuous
Potential Fund Sources:	County funds
Local Planning Mechanisms to be Used in Implementation, if any:	EOP – Annex A: Alert & warning
Progress Report	
Action Status	Revised, continuing
Report of Progress	Provide information on available apps during presentations, interviews & social media

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Taney 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$1 million +
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	38, H
Timeline for Completion:	5 years
Potential Fund Sources:	FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	Talk with interested agencies/jurisdictions and provide information

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Taney 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	37, H
Timeline for Completion:	5 years – continuous
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Taney County EOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Review EOP annually. Meet with businesses/facilities upon request to provide guidance on selecting safe places

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of safe rooms
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Taney 1.12
Name of Action or Project:	Safe Room Education
Action or Project Description:	Promote and distribute FEMA publication 320 which provides information on construction plans and cost estimates for building safe rooms in homes or small businesses, and cost estimates for construction.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Existing staff costs + \$1000 advertising
Benefits:	Improves education on safe room construction
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	36, H
Timeline for Completion:	5 years – continuous
Potential Fund Sources:	County Funds, FEMA Publication
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Provide 320 publication to anyone who requests

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to extreme temperatures
Hazard(s) Addressed:	Winter, heat
Action or Project	
Action/Project Number:	Taney 1.13
Name of Action or Project:	Heating and Cooling Centers
Action or Project Description:	Organize outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers in the community.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	Local non-profits
Action/Project Priority:	32, H
Timeline for Completion:	5 years – continuous
Potential Fund Sources:	Donations, non-profit funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Work with local non-profits and help spread information on actions

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Flood damage to properties and infrastructure
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Taney 2.1
Name of Action or Project:	Flood Mitigation
Action or Project Description:	Acquire, elevate or flood-proof properties and critical infrastructure within flood hazard areas.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$1 million +
Benefits:	Reduces risk of flood damage to properties and infrastructure
Plan for Implementation	
Responsible Organization/Department:	Taney County Planning and Zoning
Action/Project Priority:	27, M
Timeline for Completion:	2-5 years
Potential Fund Sources:	HMGP, CDBG, County funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Purchased flood damaged homes in one area

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Exposure of utilities to natural hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter
Action or Project	
Action/Project Number:	Taney 2.2
Name of Action or Project:	Utility Relocation
Action or Project Description:	Encourage utilities to relocate and/or place underground infrastructure.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A
Benefits:	Protects vulnerable utilities from natural hazards
Plan for Implementation	
Responsible Organization/Department:	Individual utility companies
Action/Project Priority:	34, H
Timeline for Completion:	N/A
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Taney 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	44, H
Timeline for Completion:	5 years – continuous
Potential Fund Sources:	County funds, federal funds USACE, private
Local Planning Mechanisms to be Used in Implementation, if any:	Dam Emergency Action Plans
Progress Report	
Action Status	New
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Poor land use practices can lead to greater damage in hazard events
Hazard(s) Addressed:	Tornado, Thunderstorm, Flood, Winter, Earthquake, Dam Failure, Wildfire, Sinkhole
Action or Project	
Action/Project Number:	Taney 2.5
Name of Action or Project:	Update Codes
Action or Project Description:	Adopt updated international codes and land use development policies, where applicable
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$200,000
Benefits:	Decreases the exposure of buildings to hazard events
Plan for Implementation	
Responsible Organization/Department:	County Commission
Action/Project Priority:	25, M
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funding, external funding
Local Planning Mechanisms to be Used in Implementation, if any:	No local backing at this time
Progress Report	
Action Status	Revised, continuing
Report of Progress	No local backing at this time

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Extra runoff can exacerbate flash flooding
Hazard(s) Addressed:	Thunderstorm, Flood
Action or Project	
Action/Project Number:	Taney 2.6
Name of Action or Project:	Runoff Ordinance Enforcement
Action or Project Description:	Enforce measures to control runoff from developing areas outside the floodplain where ordinances have not been enacted.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	No local backing, will not happen at this time
Benefits:	Reduces extra runoff, helping reduce levels of flash flooding
Plan for Implementation	
Responsible Organization/Department:	N/A
Action/Project Priority:	25, M
Timeline for Completion:	No local backing
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	No local backing

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Exposure of structures to flooding
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Taney 2.7
Name of Action or Project:	NFIP Requirement Enforcement
Action or Project Description:	Communities in Taney County that participate in NFIP will enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SPFAs).
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$200,00
Benefits:	Mitigates the damage to structures in flooding events
Plan for Implementation	
Responsible Organization/Department:	Planning and Zoning
Action/Project Priority:	40, H
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds and permit fees
Local Planning Mechanisms to be Used in Implementation, if any:	Ongoing
Progress Report	
Action Status	Revised, continuing
Report of Progress	Ongoing, updated after each flooding event

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Poor maintenance of waterways
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Taney 2.8
Name of Action or Project:	Waterway Maintenance
Action or Project Description:	Work with regulatory agencies to obtain appropriate permits to maintain waterways in order to reduce the impact of flooding.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$1,000-\$10,000
Benefits:	Helps reduce the impact and extent of flooding
Plan for Implementation	
Responsible Organization/Department:	Corps of Engineers, DNR
Action/Project Priority:	30, H
Timeline for Completion:	Ongoing, as waterways fill back up
Potential Fund Sources:	Federal grants.
Local Planning Mechanisms to be Used in Implementation, if any:	Meetings with Corps of Engineers and DNR to get them to move forward
Progress Report	
Action Status	New
Report of Progress	Difficult at best to get anything done

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taney 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$10,000+
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Taney County Emergency Management
Action/Project Priority:	34, H
Timeline for Completion:	5 years – continuing
Potential Fund Sources:	State Training Budget, County Funds
Local Planning Mechanisms to be Used in Implementation, if any:	NIMS Resolutions
Progress Report	
Action Status	Revised, continuing
Report of Progress	Encourage NIMS training for public officials

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Poor 911 addressing makes emergency response difficult
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taney 3.2
Name of Action or Project:	911 Addressing
Action or Project Description:	Educate the public on the importance of and enforce visible 911 addressing.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$10,000+
Benefits:	Improved emergency response during and after hazard events
Plan for Implementation	
Responsible Organization/Department:	Taney County All Administration
Action/Project Priority:	31, H
Timeline for Completion:	5 years – continuing
Potential Fund Sources:	General County funds
Local Planning Mechanisms to be Used in Implementation, if any:	County Ordinance
Progress Report	
Action Status	Revised, continuing
Report of Progress	Provide addressing for land owners and inform the importance of visible addresses

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Inability to dispose of debris after hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter, Earthquake, Dam Failure
Action or Project	
Action/Project Number:	Taney 3.5
Name of Action or Project:	Debris Disposal
Action or Project Description:	Identify debris disposal and burning locations in community to facilitate recovery from large scale hazard events.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A
Benefits:	Recovery from hazards will be helped by identifying debris disposal locations
Plan for Implementation	
Responsible Organization/Department:	Taney County Road & Bridge
Action/Project Priority:	32, H
Timeline for Completion:	2 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Designated one location for household and one for vegetative

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of hazard mitigation principles in city and county plans
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taney 3.7
Name of Action or Project:	Hazard Mitigation in Plans
Action or Project Description:	Integrate hazard mitigation into comprehensive plans and storm water management policies.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-\$500
Benefits:	Plans will have include hazard mitigation principles, improving resilience to hazard events
Plan for Implementation	
Responsible Organization/Department:	Planning and Zoning
Action/Project Priority:	33, H
Timeline for Completion:	1-5 years
Potential Fund Sources:	N/A; county funds
Local Planning Mechanisms to be Used in Implementation, if any:	Development guidance code, NFIP enforcement
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taney 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Taney County Grants Oversight
Action/Project Priority:	40, H
Timeline for Completion:	5 years – continuing
Potential Fund Sources:	County funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Keep updated on available grants & funding opportunities

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Poor coordination about infrastructure development can lead to flood damage
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Taney 3.9
Name of Action or Project:	Infrastructure Coordination
Action or Project Description:	Continue coordination to promote infrastructure development practices that reduce damage from flooding.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$1,000
Benefits:	Better infrastructure development will decrease damage during flood events
Plan for Implementation	
Responsible Organization/Department:	County Commission and Emergency Management
Action/Project Priority:	39, H
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds, grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	Taney County
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taney 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$30,000
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	Taney County Information Systems
Action/Project Priority:	45, H
Timeline for Completion:	5 years – continuing
Potential Fund Sources:	County funds
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Continuing
Report of Progress	Work with IS department after each event to ensure data is updated

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Branson 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$12,000 + existing staff costs
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 44, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP, City Codes
Progress Report	
Action Status	Revised, continuing
Report of Progress	Ongoing use of social media platforms

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Building loss in wildfire events
Hazard(s) Addressed:	Wildfire
Action or Project	
Action/Project Number:	Branson 1.2
Name of Action or Project:	Fire-Resistant Construction
Action or Project Description:	Encourage the use of non-combustible materials for new construction, and fire resistant landscaping techniques and planting materials in wildfire hazard areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$500 + existing staff costs
Benefits:	Reduction of property loss during wildfires.
Plan for Implementation	
Responsible Organization/Department:	FD, EMD, Planning
Action/Project Priority:	STAPLEE score: 35, Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP, Fire Codes
Progress Report	
Action Status	Revised, continuing
Report of Progress	Ongoing, public education, use of fire wise program

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of public involvement in mitigation activities
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Branson 1.3
Name of Action or Project:	Citizen Preparedness
Action or Project Description:	Promote participation in citizen preparedness activities, such as: Citizen Corps, CERT, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$2,500 + existing staff costs
Benefits:	Increases citizen awareness of mitigation activities
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Continued development of CERT classes/program

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Poor tornado warning due to poor siren maintenance
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Branson 1.5
Name of Action or Project:	Siren Maintenance
Action or Project Description:	Maintain outdoor warning sirens in public areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$20,000+
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	5 Years
Potential Fund Sources:	Capital budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP, City Ordinances
Progress Report	
Action Status	Revised, continuing
Report of Progress	Testing done monthly; maintenance done as needed

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Branson 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$2,500 + existing staff costs
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Radios have been installed in many of these facilities and maintaining

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Branson 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$500 + existing staff costs
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Continually promoting purchases

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Branson 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$500 + existing staff costs
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Continually promoting

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Branson 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$500
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 34, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	HMGP, General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	"Open for business" dev. meetings

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Branson 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Continuing to develop plans for large-scale public events, use of site/staff document, and education on staff locations

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of safe rooms
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Branson 1.12
Name of Action or Project:	Safe Room Education
Action or Project Description:	Promote and distribute FEMA publication 320 which provides information on construction plans and cost estimates for building safe rooms in homes or small businesses, and cost estimates for construction.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$500
Benefits:	Improves education on safe room construction
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 33, Priority: High
Timeline for Completion:	1-5 years/ongoing
Potential Fund Sources:	HMGP, general funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Communicated with properties and at each construction project

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to extreme temperatures
Hazard(s) Addressed:	Winter, heat
Action or Project	
Action/Project Number:	Branson 1.13
Name of Action or Project:	Heating and Cooling Centers
Action or Project Description:	Organize outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers in the community.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Communication ongoing to keep resources updated

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Flood damage to properties and infrastructure
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Branson 2.1
Name of Action or Project:	Flood Mitigation
Action or Project Description:	Acquire, elevate or flood-proof properties and critical infrastructure within flood hazard areas.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$10,000 - \$100,000
Benefits:	Reduces risk of flood damage to properties and infrastructure
Plan for Implementation	
Responsible Organization/Department:	Utilities
Action/Project Priority:	STAPLEE score: 37, Priority: High
Timeline for Completion:	1-5 years
Potential Fund Sources:	Capital budget, Mitigation grants (HMGP/FMA)
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Very few properties left to buy out

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Exposure of utilities to natural hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter
Action or Project	
Action/Project Number:	Branson 2.2
Name of Action or Project:	Utility Relocation
Action or Project Description:	Encourage utilities to relocate and/or place underground infrastructure.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$0-\$500
Benefits:	Protects vulnerable utilities from natural hazards
Plan for Implementation	
Responsible Organization/Department:	Planning
Action/Project Priority:	STAPLEE score: 25, Priority: Medium
Timeline for Completion:	20 years
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Continuing to work with electric companies to encourage burying of utilities

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Failure of wastewater treatment facilities in hazard events
Hazard(s) Addressed:	Flood, Drought, Dam failure.
Action or Project	
Action/Project Number:	Branson 2.3
Name of Action or Project:	Wastewater Treatment Resilience
Action or Project Description:	Ensure that wastewater treatment systems will function during flood and drought events.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Ensures that wastewater treatment will be able to withstand natural hazards
Plan for Implementation	
Responsible Organization/Department:	Utilities, WWTP
Action/Project Priority:	STAPLEE score: 36, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Utilities funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Continuing
Report of Progress	Ongoing efforts to mitigate effects of flooding

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Branson 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 37, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	New
Report of Progress	Continual training/planning with EM partners/Corps of Engineers

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Poor land use practices can lead to greater damage in hazard events
Hazard(s) Addressed:	Tornado, Thunderstorm, Flood, Winter, Earthquake, Dam Failure, Wildfire, Sinkhole.
Action or Project	
Action/Project Number:	Branson 2.5
Name of Action or Project:	Update Codes
Action or Project Description:	Adopt updated international codes and land use development policies, where applicable.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Decreases the exposure of buildings to hazard events
Plan for Implementation	
Responsible Organization/Department:	Planning, FD, Utilities
Action/Project Priority:	STAPLEE score: 47, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds, utilities funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP, City Codes (IBC, PMC)
Progress Report	
Action Status	Revised, continuing
Report of Progress	Ongoing. Typically using ICC 3-year code cycle

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Exposure of structures to flooding
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Branson 2.7
Name of Action or Project:	NFIP Requirement Enforcement
Action or Project Description:	Communities in Taney County that participate in NFIP will enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SPFAs).
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Mitigates the damage to structures in flooding events
Plan for Implementation	
Responsible Organization/Department:	Planning
Action/Project Priority:	STAPLEE score: 47, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Planning staff monitor all projects

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Branson 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 37, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Poor 911 addressing makes emergency response difficult
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Branson 3.2
Name of Action or Project:	911 Addressing
Action or Project Description:	Educate the public on the importance of and enforce visible 911 addressing.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Improved emergency response during and after hazard events
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 34, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	County/city codes – IFC
Progress Report	
Action Status	Revised, continuing
Report of Progress	Ongoing

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of water rescue capability
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Branson 3.4
Name of Action or Project:	Water Rescue
Action or Project Description:	Enhance water rescue capabilities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$25,000+
Benefits:	Emergency response teams will be better equipped to perform water rescues during flood events
Plan for Implementation	
Responsible Organization/Department:	FD
Action/Project Priority:	STAPLEE score: 27, Priority: Medium
Timeline for Completion:	1-5 years/Ongoing
Potential Fund Sources:	General funds, capital budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	Purchased minimal equipment and staff have researched future purchases

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Inability to dispose of debris after hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter, Earthquake, Dam Failure
Action or Project	
Action/Project Number:	Branson 3.5
Name of Action or Project:	Debris Disposal
Action or Project Description:	Identify debris disposal and burning locations in community to facilitate recovery from large scale hazard events.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Recovery from hazards will be helped by identifying debris disposal locations
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	1 st half of 2018
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of hazard mitigation principles in city and county plans
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Branson 3.7
Name of Action or Project:	Hazard Mitigation in Plans
Action or Project Description:	Integrate hazard mitigation into comprehensive plans and storm water management policies.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Plans will have include hazard mitigation principles, improving resilience to hazard events
Plan for Implementation	
Responsible Organization/Department:	FD, EMD
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	6 months (by mid-2018)
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	Comprehensive Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	Staff updating as applicable

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Branson 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	EMD/Finances
Action/Project Priority:	STAPLEE score: 32, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Poor coordination about infrastructure development can lead to flood damage
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Branson 3.9
Name of Action or Project:	Infrastructure Coordination
Action or Project Description:	Continue coordination to promote infrastructure development practices that reduce damage from flooding.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-\$500
Benefits:	Better infrastructure development will decrease damage during flood events
Plan for Implementation	
Responsible Organization/Department:	EMD
Action/Project Priority:	STAPLEE score: 45, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	Planning Department Regulations
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Branson
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Branson 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	Engineering
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Continuing
Report of Progress	

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Forsyth 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	30, H
Timeline for Completion:	3-6 months
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	City Council
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Building loss in wildfire events
Hazard(s) Addressed:	Wildfire
Action or Project	
Action/Project Number:	Forsyth 1.2
Name of Action or Project:	Fire-Resistant Construction
Action or Project Description:	Encourage the use of non-combustible materials for new construction, and fire resistant landscaping techniques and planting materials in wildfire hazard areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$500
Benefits:	Reduction of property loss during wildfires.
Plan for Implementation	
Responsible Organization/Department:	Building Department, Fire Department
Action/Project Priority:	37, H
Timeline for Completion:	2 years
Potential Fund Sources:	General funds, MDC
Local Planning Mechanisms to be Used in Implementation, if any:	Fire Wise, Wildfire Protection Program, MDC
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of public involvement in mitigation activities
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Forsyth 1.3
Name of Action or Project:	Citizen Preparedness
Action or Project Description:	Promote participation in citizen preparedness activities, such as: Citizen Corps, CERT, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$100
Benefits:	Increases citizen awareness of mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	29, M
Timeline for Completion:	2 years
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	LEPC, Comp Plan, Chiefs
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Poor tornado warning due to poor siren maintenance
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Forsyth 1.5
Name of Action or Project:	Siren Maintenance
Action or Project Description:	Maintain outdoor warning sirens in public areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$3,000-\$4,000
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Fire department, EMD
Action/Project Priority:	39, H
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds, fire department
Local Planning Mechanisms to be Used in Implementation, if any:	City Comp plan, Storm awareness plan, NWS
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Forsyth 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$500
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	33, H
Timeline for Completion:	2 years
Potential Fund Sources:	State, federal, local funding
Local Planning Mechanisms to be Used in Implementation, if any:	City Severe Weather Response Plan, NWS
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Forsyth 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	36, H
Timeline for Completion:	1-2 years
Potential Fund Sources:	General funds, grants, state/federal/local
Local Planning Mechanisms to be Used in Implementation, if any:	City Severe Weather Response Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Forsyth 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$2500
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	20, L
Timeline for Completion:	5 years
Potential Fund Sources:	Grants, state/federal funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Forsyth 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	EMD, Administration
Action/Project Priority:	19, L
Timeline for Completion:	5 years
Potential Fund Sources:	General funds, grants
Local Planning Mechanisms to be Used in Implementation, if any:	Severe Weather Response Plan, NWS Support
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Forsyth 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$200
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	30, H
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	Severe Weather Response Plan, NWS
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of safe rooms
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Forsyth 1.12
Name of Action or Project:	Safe Room Education
Action or Project Description:	Promote and distribute FEMA publication 320 which provides information on construction plans and cost estimates for building safe rooms in homes or small businesses, and cost estimates for construction.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100
Benefits:	Improves education on safe room construction
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	26, M
Timeline for Completion:	1 year – ongoing
Potential Fund Sources:	FEMA Grants
Local Planning Mechanisms to be Used in Implementation, if any:	FEMA, Severe Weather Response Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to extreme temperatures
Hazard(s) Addressed:	Winter, heat
Action or Project	
Action/Project Number:	Forsyth 1.13
Name of Action or Project:	Heating and Cooling Centers
Action or Project Description:	Organize outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers in the community.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$1,000
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	Local non-profits
Action/Project Priority:	21, L
Timeline for Completion:	5 years – ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Flood damage to properties and infrastructure
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Forsyth 2.1
Name of Action or Project:	Flood Mitigation
Action or Project Description:	Acquire, elevate or flood-proof properties and critical infrastructure within flood hazard areas.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$5,000-\$1,000,000
Benefits:	Reduces risk of flood damage to properties and infrastructure
Plan for Implementation	
Responsible Organization/Department:	City Council
Action/Project Priority:	2, L
Timeline for Completion:	Ongoing
Potential Fund Sources:	Federal funding- FMA, HMGP grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Exposure of utilities to natural hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter
Action or Project	
Action/Project Number:	Forsyth 2.2
Name of Action or Project:	Utility Relocation
Action or Project Description:	Encourage utilities to relocate and/or place underground infrastructure.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$100-\$1,000
Benefits:	Protects vulnerable utilities from natural hazards
Plan for Implementation	
Responsible Organization/Department:	Building Department, Public Works
Action/Project Priority:	15, L
Timeline for Completion:	2-5 years
Potential Fund Sources:	Utility, General funds, grants
Local Planning Mechanisms to be Used in Implementation, if any:	Utilities Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Forsyth 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$50
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Empire, Table Rock, EMD
Action/Project Priority:	38, H
Timeline for Completion:	3-5 years – ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Dam Emergency Plan, Empire and Corps of Engineers
Progress Report	
Action Status	New
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Poor land use practices can lead to greater damage in hazard events
Hazard(s) Addressed:	Tornado, Thunderstorm, Flood, Winter, Earthquake, Dam Failure, Wildfire, Sinkhole.
Action or Project	
Action/Project Number:	Forsyth 2.5
Name of Action or Project:	Update Codes
Action or Project Description:	Adopt updated international codes and land use development policies, where applicable.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$500-\$1,000
Benefits:	Decreases the exposure of buildings to hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	28, M
Timeline for Completion:	3-5 years – ongoing
Potential Fund Sources:	General funds, local, state, federal
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Extra runoff can exacerbate flash flooding
Hazard(s) Addressed:	Thunderstorm, Flood
Action or Project	
Action/Project Number:	Forsyth 2.6
Name of Action or Project:	Runoff Ordinance Enforcement
Action or Project Description:	Enforce measures to control runoff from developing areas outside the floodplain where ordinances have not been enacted.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$500
Benefits:	Reduces extra runoff, helping reduce levels of flash flooding
Plan for Implementation	
Responsible Organization/Department:	Administration, Building Department, Public Works
Action/Project Priority:	27, M
Timeline for Completion:	3-5 years – ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	City Land Use and Comprehensive Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Poor maintenance of waterways
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Forsyth 2.8
Name of Action or Project:	Waterway Maintenance
Action or Project Description:	Work with regulatory agencies to obtain appropriate permits to maintain waterways in order to reduce the impact of flooding.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$1,000-\$10,000
Benefits:	Helps reduce the impact and extent of flooding
Plan for Implementation	
Responsible Organization/Department:	Council, Corps of Engineers
Action/Project Priority:	14, L
Timeline for Completion:	3-5 years – ongoing
Potential Fund Sources:	State, Federal
Local Planning Mechanisms to be Used in Implementation, if any:	Comprehensive Plan
Progress Report	
Action Status	New
Report of Progress	

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Forsyth 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$1500
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	EMD
Action/Project Priority:	32, H
Timeline for Completion:	3-5 years – ongoing
Potential Fund Sources:	State, Federal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Poor 911 addressing makes emergency response difficult
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Forsyth 3.2
Name of Action or Project:	911 Addressing
Action or Project Description:	Educate the public on the importance of and enforce visible 911 addressing.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$15 per home/business
Benefits:	Improved emergency response during and after hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration, Fire, Police, 911
Action/Project Priority:	46, H
Timeline for Completion:	Ongoing
Potential Fund Sources:	General funds, home/business owners
Local Planning Mechanisms to be Used in Implementation, if any:	City ordinance
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Firefighting water sources running out during wildfires
Hazard(s) Addressed:	Wildfire and drought
Action or Project	
Action/Project Number:	Forsyth 3.3
Name of Action or Project:	Water Inventory
Action or Project Description:	Inventory alternative firefighting water sources.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$1,000-\$20,000
Benefits:	Ensures that fires can be effectively fought during droughts or shortages
Plan for Implementation	
Responsible Organization/Department:	Fire department, administration
Action/Project Priority:	39, H
Timeline for Completion:	2 years – ongoing
Potential Fund Sources:	General funds, grant funding
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of water rescue capability
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Forsyth 3.4
Name of Action or Project:	Water Rescue
Action or Project Description:	Enhance water rescue capabilities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$10,000
Benefits:	Emergency response teams will be better equipped to perform water rescues during flood events
Plan for Implementation	
Responsible Organization/Department:	Fire department
Action/Project Priority:	24, L
Timeline for Completion:	3-5 years – ongoing
Potential Fund Sources:	State, federal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Inability to dispose of debris after hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter, Earthquake, Dam Failure
Action or Project	
Action/Project Number:	Forsyth 3.5
Name of Action or Project:	Debris Disposal
Action or Project Description:	Identify debris disposal and burning locations in community to facilitate recovery from large scale hazard events.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100
Benefits:	Recovery from hazards will be helped by identifying debris disposal locations
Plan for Implementation	
Responsible Organization/Department:	Administration, Public Works, EMD
Action/Project Priority:	30, H
Timeline for Completion:	3-5 years – ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status	Continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of hazard mitigation principles in city and county plans
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Forsyth 3.7
Name of Action or Project:	Hazard Mitigation in Plans
Action or Project Description:	Integrate hazard mitigation into comprehensive plans and storm water management policies.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100
Benefits:	Plans will have include hazard mitigation principles, improving resilience to hazard events
Plan for Implementation	
Responsible Organization/Department:	EMD
Action/Project Priority:	30, H
Timeline for Completion:	3-5 years - ongoing
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	City Emergency Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Forsyth 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	28, M
Timeline for Completion:	3-5 years, ongoing
Potential Fund Sources:	General funds, grants
Local Planning Mechanisms to be Used in Implementation, if any:	City Emergency Management Plan
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Poor coordination about infrastructure development can lead to flood damage
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Forsyth 3.9
Name of Action or Project:	Infrastructure Coordination
Action or Project Description:	Continue coordination to promote infrastructure development practices that reduce damage from flooding.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Better infrastructure development will decrease damage during flood events
Plan for Implementation	
Responsible Organization/Department:	Administration, Public Works
Action/Project Priority:	28, M
Timeline for Completion:	3-5 years
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Forsyth
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Forsyth 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	Administration, EMD
Action/Project Priority:	32, H
Timeline for Completion:	3-5 years – ongoing
Potential Fund Sources:	General funds, state funding
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Hollister 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Executive
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	Foundation Grants/Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Building loss in wildfire events
Hazard(s) Addressed:	Wildfire
Action or Project	
Action/Project Number:	Hollister 1.2
Name of Action or Project:	Fire-Resistant Construction
Action or Project Description:	Encourage the use of non-combustible materials for new construction, and fire resistant landscaping techniques and planting materials in wildfire hazard areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-500
Benefits:	Reduction of property loss during wildfires.
Plan for Implementation	
Responsible Organization/Department:	Planning/Building
Action/Project Priority:	STAPLEE score: 25 Priority: Medium
Timeline for Completion:	1 year
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Continue to implement codes.
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of public involvement in mitigation activities
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Hollister 1.3
Name of Action or Project:	Citizen Preparedness
Action or Project Description:	Promote participation in citizen preparedness activities, such as: Citizen Corps, CERT, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Increases citizen awareness of mitigation activities
Plan for Implementation	
Responsible Organization/Department:	All departments
Action/Project Priority:	STAPLEE score: 21 Priority: Low
Timeline for Completion:	On-going
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Hollister 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$800
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Executive/Planning
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	1 year
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Hollister 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-500
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Executive
Action/Project Priority:	STAPLEE score: 23 Priority: Low
Timeline for Completion:	On-going
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Social Media/Website/Electronic News Letter
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Hollister 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-100
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Police Department, Executive
Action/Project Priority:	STAPLEE score: 45 Priority: High
Timeline for Completion:	Already in place – on-going
Potential Fund Sources:	None needed
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Hollister 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	Executive
Action/Project Priority:	STAPLEE score: 26 Priority: Medium
Timeline for Completion:	Currently in place
Potential Fund Sources:	FEMA
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Hollister 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$1,000-2,000
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Executive Department
Action/Project Priority:	STAPLEE score: 21 Priority: Low
Timeline for Completion:	2 years
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Additional plan writer.
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of safe rooms
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Hollister 1.12
Name of Action or Project:	Safe Room Education
Action or Project Description:	Promote and distribute FEMA publication 320 which provides information on construction plans and cost estimates for building safe rooms in homes or small businesses, and cost estimates for construction.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$500
Benefits:	Improves education on safe room construction
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Action/Project Priority:	STAPLEE score: 18 Priority: Low
Timeline for Completion:	2 years
Potential Fund Sources:	FEMA Grant
Local Planning Mechanisms to be Used in Implementation, if any:	On board project person
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to extreme temperatures
Hazard(s) Addressed:	Winter, heat
Action or Project	
Action/Project Number:	Hollister 1.13
Name of Action or Project:	Heating and Cooling Centers
Action or Project Description:	Organize outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers in the community.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	Executive
Action/Project Priority:	STAPLEE score:20 Priority: Low
Timeline for Completion:	In place currently/on-going
Potential Fund Sources:	None needed
Local Planning Mechanisms to be Used in Implementation, if any:	Social media, news letters
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Flood damage to properties and infrastructure
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Hollister 2.1
Name of Action or Project:	Flood Mitigation
Action or Project Description:	Acquire, elevate or flood-proof properties and critical infrastructure within flood hazard areas.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$100,000
Benefits:	Reduces risk of flood damage to properties and infrastructure
Plan for Implementation	
Responsible Organization/Department:	Executive
Action/Project Priority:	STAPLEE score: 33 Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	NFIP, Building codes, local contact
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Exposure of utilities to natural hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter
Action or Project	
Action/Project Number:	Hollister 2.2
Name of Action or Project:	Utility Relocation
Action or Project Description:	Encourage utilities to relocate and/or place underground infrastructure.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$50,000
Benefits:	Protects vulnerable utilities from natural hazards
Plan for Implementation	
Responsible Organization/Department:	Planning department, Suddenlink (private)
Action/Project Priority:	STAPLEE score: 25 Priority: Medium
Timeline for Completion:	2 years
Potential Fund Sources:	Private funding
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Failure of wastewater treatment facilities in hazard events
Hazard(s) Addressed:	Flood, Drought, Dam failure.
Action or Project	
Action/Project Number:	Hollister 2.3
Name of Action or Project:	Wastewater Treatment Resilience
Action or Project Description:	Ensure that wastewater treatment systems will function during flood and drought events.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$50,000
Benefits:	Ensures that wastewater treatment will be able to withstand natural hazards
Plan for Implementation	
Responsible Organization/Department:	Public works
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	Always in progress
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Routine maintenance
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Hollister 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$0-200
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	City/county Emergency Management
Action/Project Priority:	STAPLEE score: 46 Priority: High
Timeline for Completion:	2 months
Potential Fund Sources:	Operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Poor land use practices can lead to greater damage in hazard events
Hazard(s) Addressed:	Tornado, Thunderstorm, Flood, Winter, Earthquake, Dam Failure, Wildfire, Sinkhole.
Action or Project	
Action/Project Number:	Hollister 2.5
Name of Action or Project:	Update Codes
Action or Project Description:	Adopt updated international codes and land use development policies, where applicable.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$4,000
Benefits:	Decreases the exposure of buildings to hazard events
Plan for Implementation	
Responsible Organization/Department:	Planning
Action/Project Priority:	STAPLEE score: 41 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Routine Operations
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Extra runoff can exacerbate flash flooding
Hazard(s) Addressed:	Thunderstorm, Flood
Action or Project	
Action/Project Number:	Hollister 2.6
Name of Action or Project:	Runoff Ordinance Enforcement
Action or Project Description:	Enforce measures to control runoff from developing areas outside the floodplain.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Reduces extra runoff, helping reduce levels of flash flooding
Plan for Implementation	
Responsible Organization/Department:	Planning
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	Already in place/on-going
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Exposure of structures to flooding
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Hollister 2.7
Name of Action or Project:	NFIP Requirement Enforcement
Action or Project Description:	Communities in Taney County that participate in NFIP will enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SPFAs).
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Mitigates the damage to structures in flooding events
Plan for Implementation	
Responsible Organization/Department:	Planning/Building department
Action/Project Priority:	STAPLEE score: 43 Priority: High
Timeline for Completion:	Already in place/on-going
Potential Fund Sources:	Already in place
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Poor maintenance of waterways
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Hollister 2.8
Name of Action or Project:	Waterway Maintenance
Action or Project Description:	Work with regulatory agencies to obtain appropriate permits to maintain waterways in order to reduce the impact of flooding.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$0-20,000
Benefits:	Helps reduce the impact and extent of flooding
Plan for Implementation	
Responsible Organization/Department:	Public Works
Action/Project Priority:	STAPLEE score: 41 Priority: High
Timeline for Completion:	Perpetual
Potential Fund Sources:	Operating budget/exchange for value
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Hollister 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-1,000
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	Operating budget, no cost opportunities
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Poor 911 addressing makes emergency response difficult
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Hollister 3.2
Name of Action or Project:	911 Addressing
Action or Project Description:	Educate the public on the importance of and enforce visible 911 addressing.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$200
Benefits:	Improved emergency response during and after hazard events
Plan for Implementation	
Responsible Organization/Department:	Police department, Building, Fire
Action/Project Priority:	STAPLEE score: 23 Priority: Low
Timeline for Completion:	On-going
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Firefighting water sources running out during wildfires
Hazard(s) Addressed:	Wildfire and drought
Action or Project	
Action/Project Number:	Hollister 3.3
Name of Action or Project:	Water Inventory
Action or Project Description:	Inventory alternative firefighting water sources.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100-300
Benefits:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Plan for Implementation	
Responsible Organization/Department:	Fire department
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of water rescue capability
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Hollister 3.4
Name of Action or Project:	Water Rescue
Action or Project Description:	Enhance water rescue capabilities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	Unknown
Benefits:	Emergency response teams will be better equipped to perform water rescues during flood events
Plan for Implementation	
Responsible Organization/Department:	Fire Department
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of hazard mitigation principles in city and county plans
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Hollister 3.7
Name of Action or Project:	Hazard Mitigation in Plans
Action or Project Description:	Integrate hazard mitigation into comprehensive plans and storm water management policies.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-200
Benefits:	Plans will have include hazard mitigation principles, improving resilience to hazard events
Plan for Implementation	
Responsible Organization/Department:	Executive
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	1 year/on-going
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Hollister 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Executive
Action/Project Priority:	STAPLEE score: 25 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Poor coordination about infrastructure development can lead to flood damage
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Hollister 3.9
Name of Action or Project:	Infrastructure Coordination
Action or Project Description:	Continue coordination to promote infrastructure development practices that reduce damage from flooding.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	Unknown
Benefits:	Better infrastructure development will decrease damage during flood events
Plan for Implementation	
Responsible Organization/Department:	Executive
Action/Project Priority:	STAPLEE score: 25 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Hollister
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Hollister 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$1,800
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	Planning Department
Action/Project Priority:	STAPLEE score: 43 Priority: High
Timeline for Completion:	Already in existence/on-going
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Maintain as current
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Merriam Woods 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Police Department
Action/Project Priority:	STAPLEE score: 27 Priority: Medium
Timeline for Completion:	12 months
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Use social media.
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Building loss in wildfire events
Hazard(s) Addressed:	Wildfire
Action or Project	
Action/Project Number:	Merriam Woods 1.2
Name of Action or Project:	Fire-Resistant Construction
Action or Project Description:	Encourage the use of non-combustible materials for new construction, and fire resistant landscaping techniques and planting materials in wildfire hazard areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Reduction of property loss during wildfires.
Plan for Implementation	
Responsible Organization/Department:	Building Inspector
Action/Project Priority:	STAPLEE score: 26 Priority: Medium
Timeline for Completion:	3-4 years
Potential Fund Sources:	Building permit fees
Local Planning Mechanisms to be Used in Implementation, if any:	Board of Aldermen
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of public involvement in mitigation activities
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Merriam Woods 1.3
Name of Action or Project:	Citizen Preparedness
Action or Project Description:	Promote participation in citizen preparedness activities, such as: Citizen Corps, CERT, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Increases citizen awareness of mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Police Department, Board of Aldermen
Action/Project Priority:	STAPLEE score: 34 Priority: High
Timeline for Completion:	12-15 months
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Merriam Woods 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$200
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Police Department
Action/Project Priority:	STAPLEE score: 35 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	General Revenue Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Merriam Woods 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Police Department
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Monthly City Council meetings
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Merriam Woods 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Administration
Action/Project Priority:	STAPLEE score: 21 Priority: Low
Timeline for Completion:	On-going
Potential Fund Sources:	Grants, General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Merriam Woods 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Cost unknown
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	City Administration
Action/Project Priority:	STAPLEE score: 23 Priority: Low
Timeline for Completion:	On-going
Potential Fund Sources:	General fund, Grants
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Merriam Woods 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Administration
Action/Project Priority:	STAPLEE score: 25 Priority: Low
Timeline for Completion:	On-going
Potential Fund Sources:	Grants, General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of safe rooms
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Merriam Woods 1.12
Name of Action or Project:	Safe Room Education
Action or Project Description:	Promote and distribute FEMA publication 320 which provides information on construction plans and cost estimates for building safe rooms in homes or small businesses, and cost estimates for construction.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$500
Benefits:	Improves education on safe room construction
Plan for Implementation	
Responsible Organization/Department:	Planning and Zoning, City Administration
Action/Project Priority:	STAPLEE score: 27 Priority: Medium
Timeline for Completion:	5+ years
Potential Fund Sources:	Grants, General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to extreme temperatures
Hazard(s) Addressed:	Winter, heat
Action or Project	
Action/Project Number:	Merriam Woods 1.13
Name of Action or Project:	Heating and Cooling Centers
Action or Project Description:	Organize outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers in the community.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$500
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	Police Department, Board of Aldermen
Action/Project Priority:	STAPLEE score: 30 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Flood damage to properties and infrastructure
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Merriam Woods 2.1
Name of Action or Project:	Flood Mitigation
Action or Project Description:	Acquire, elevate or flood-proof properties and critical infrastructure within flood hazard areas.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$10,000-\$100,000
Benefits:	Reduces risk of flood damage to properties and infrastructure
Plan for Implementation	
Responsible Organization/Department:	Utilities
Action/Project Priority:	STAPLEE score: 19 Priority: Low
Timeline for Completion:	1-5 years
Potential Fund Sources:	Mitigation Grants
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Exposure of utilities to natural hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter
Action or Project	
Action/Project Number:	Merriam Woods 2.2
Name of Action or Project:	Utility Relocation
Action or Project Description:	Encourage utilities to relocate and/or place underground infrastructure.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$0-\$500
Benefits:	Protects vulnerable utilities from natural hazards
Plan for Implementation	
Responsible Organization/Department:	Planning and Zoning
Action/Project Priority:	STAPLEE score: 21 Priority: Low
Timeline for Completion:	5+ years
Potential Fund Sources:	Grants, General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Merriam Woods 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Police and Fire Department
Action/Project Priority:	STAPLEE score: 24 Priority: Low
Timeline for Completion:	5+ years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Poor land use practices can lead to greater damage in hazard events
Hazard(s) Addressed:	Tornado, Thunderstorm, Flood, Winter, Earthquake, Dam Failure, Wildfire, Sinkhole.
Action or Project	
Action/Project Number:	Merriam Woods 2.5
Name of Action or Project:	Update Codes
Action or Project Description:	Adopt updated international codes and land use development policies, where applicable.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A
Benefits:	Decreases the exposure of buildings to hazard events
Plan for Implementation	
Responsible Organization/Department:	Building inspector, Board of Aldermen
Action/Project Priority:	STAPLEE score: 32 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Extra runoff can exacerbate flash flooding
Hazard(s) Addressed:	Thunderstorm, Flood
Action or Project	
Action/Project Number:	Merriam Woods 2.6
Name of Action or Project:	Runoff Ordinance Enforcement
Action or Project Description:	Enforce measures to control runoff from developing areas outside the floodplain where ordinances have not been enacted.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A
Benefits:	Reduces extra runoff, helping reduce levels of flash flooding
Plan for Implementation	
Responsible Organization/Department:	City Administration
Action/Project Priority:	STAPLEE score: 28 Priority: Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Exposure of structures to flooding
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Merriam Woods 2.7
Name of Action or Project:	NFIP Requirement Enforcement
Action or Project Description:	Communities in Taney County that participate in NFIP will enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SPFAs).
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A
Benefits:	Mitigates the damage to structures in flooding events
Plan for Implementation	
Responsible Organization/Department:	Planning and Zoning
Action/Project Priority:	STAPLEE score: 28 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Poor maintenance of waterways
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Merriam Woods 2.8
Name of Action or Project:	Waterway Maintenance
Action or Project Description:	Work with regulatory agencies to obtain appropriate permits to maintain waterways in order to reduce the impact of flooding.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$1,000-\$10,000
Benefits:	Helps reduce the impact and extent of flooding
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen
Action/Project Priority:	STAPLEE score: 30 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Merriam Woods 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-\$300
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen, Police Department
Action/Project Priority:	STAPLEE score: 29 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Poor 911 addressing makes emergency response difficult
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Merriam Woods 3.2
Name of Action or Project:	911 Addressing
Action or Project Description:	Educate the public on the importance of and enforce visible 911 addressing.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A
Benefits:	Improved emergency response during and after hazard events
Plan for Implementation	
Responsible Organization/Department:	Police Department, Code Enforcement
Action/Project Priority:	STAPLEE score: 27 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	County/city codes
Progress Report	
Action Status	Revised, continuing
Report of Progress	On-going

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Firefighting water sources running out during wildfires
Hazard(s) Addressed:	Wildfire and drought
Action or Project	
Action/Project Number:	Merriam Woods 3.3
Name of Action or Project:	Water Inventory
Action or Project Description:	Inventory alternative firefighting water sources.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100-\$300
Benefits:	Ensure and enhance continued operation of government, emergency functions, and critical infrastructure in a disaster.
Plan for Implementation	
Responsible Organization/Department:	Fire Department
Action/Project Priority:	STAPLEE score: 29 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of water rescue capability
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Merriam Woods 3.4
Name of Action or Project:	Water Rescue
Action or Project Description:	Enhance water rescue capabilities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$25,000+
Benefits:	Emergency response teams will be better equipped to perform water rescues during flood events
Plan for Implementation	
Responsible Organization/Department:	Western Taney County Fire Department
Action/Project Priority:	STAPLEE score: 26 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	Mitigation Grants, General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Inability to dispose of debris after hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter, Earthquake, Dam Failure
Action or Project	
Action/Project Number:	Merriam Woods 3.5
Name of Action or Project:	Debris Disposal
Action or Project Description:	Identify debris disposal and burning locations in community to facilitate recovery from large scale hazard events.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No cost
Benefits:	Recovery from hazards will be helped by identifying debris disposal locations
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen
Action/Project Priority:	STAPLEE score: 30 Priority: High
Timeline for Completion:	12 months
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of hazard mitigation principles in city and county plans
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Merriam Woods 3.7
Name of Action or Project:	Hazard Mitigation in Plans
Action or Project Description:	Integrate hazard mitigation into comprehensive plans and storm water management policies.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No cost
Benefits:	Plans will have include hazard mitigation principles, improving resilience to hazard events
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen
Action/Project Priority:	STAPLEE score: 33 Priority: High
Timeline for Completion:	1-5 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Merriam Woods 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No cost
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Police Department, City Clerk, Board of Aldermen
Action/Project Priority:	STAPLEE score: 32 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Poor coordination about infrastructure development can lead to flood damage
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Merriam Woods 3.9
Name of Action or Project:	Infrastructure Coordination
Action or Project Description:	Continue coordination to promote infrastructure development practices that reduce damage from flooding.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-\$500
Benefits:	Better infrastructure development will decrease damage during flood events
Plan for Implementation	
Responsible Organization/Department:	Building Inspector, Board of Aldermen
Action/Project Priority:	STAPLEE score: 29 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Merriam Woods
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Merriam Woods 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	Unknown
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen, City Clerk
Action/Project Priority:	STAPLEE score: 28 Priority: Medium
Timeline for Completion:	On-going
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Rockaway Beach 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100 annually
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	City clerk, Administration
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	3 months/On-going
Potential Fund Sources:	General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Building loss in wildfire events
Hazard(s) Addressed:	Wildfire
Action or Project	
Action/Project Number:	Rockaway Beach 1.2
Name of Action or Project:	Fire-Resistant Construction
Action or Project Description:	Encourage the use of non-combustible materials for new construction, and fire resistant landscaping techniques and planting materials in wildfire hazard areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknow
Benefits:	Reduction of property loss during wildfires.
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Action/Project Priority:	STAPLEE score: 45 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	Building Fund
Local Planning Mechanisms to be Used in Implementation, if any:	Building Code
Progress Report	
Action Status	Revised, continuing
Report of Progress	On-going

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Lack of public involvement in mitigation activities
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Rockaway Beach 1.3
Name of Action or Project:	Citizen Preparedness
Action or Project Description:	Promote participation in citizen preparedness activities, such as: Citizen Corps, CERT, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$800
Benefits:	Increases citizen awareness of mitigation activities
Plan for Implementation	
Responsible Organization/Department:	City Committee for Neighborhood Water
Action/Project Priority:	STAPLEE score: 27 Priority: Medium
Timeline for Completion:	12 months/on-going
Potential Fund Sources:	Special fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Poor tornado warning due to poor siren maintenance
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Rockaway Beach 1.5
Name of Action or Project:	Siren Maintenance
Action or Project Description:	Maintain outdoor warning sirens in public areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen
Action/Project Priority:	STAPLEE score: 43 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	Grants (HMGP), general fund
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Slow siren response to tornado
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Rockaway Beach 1.6
Name of Action or Project:	Siren Radio Control
Action or Project Description:	Improve effectiveness of outdoor warning sirens by making all existing sirens radio activated.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Improves tornado siren effectiveness
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen
Action/Project Priority:	STAPLEE score: 43 Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	Grants (HMGP), General fund
Local Planning Mechanisms to be Used in Implementation, if any:	LEOP
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Rockaway Beach 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$1,000 annually
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Aldermen
Action/Project Priority:	STAPLEE score: 27 Priority: Medium
Timeline for Completion:	6+ months
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Rockaway Beach 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$50 annually
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Rockaway Beach 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100 annually
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	3 + months
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Lack of safe rooms
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Rockaway Beach 1.12
Name of Action or Project:	Safe Room Education
Action or Project Description:	Promote and distribute FEMA publication 320 which provides information on construction plans and cost estimates for building safe rooms in homes or small businesses, and cost estimates for construction.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$50 annually
Benefits:	Improves education on safe room construction
Plan for Implementation	
Responsible Organization/Department:	Utility/City Clerk
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	12+ months
Potential Fund Sources:	General Funds, Grants (HMGP)
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to extreme temperatures
Hazard(s) Addressed:	Winter, heat
Action or Project	
Action/Project Number:	Rockaway Beach 1.13
Name of Action or Project:	Heating and Cooling Centers
Action or Project Description:	Organize outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers in the community.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	Administration, City Aldermen
Action/Project Priority:	STAPLEE score: 30 Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Flood damage to properties and infrastructure
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Rockaway Beach 2.1
Name of Action or Project:	Flood Mitigation
Action or Project Description:	Acquire, elevate or flood-proof properties and critical infrastructure within flood hazard areas.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$5 million
Benefits:	Reduces risk of flood damage to properties and infrastructure
Plan for Implementation	
Responsible Organization/Department:	Building inspector, City
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	5+ years
Potential Fund Sources:	Grants (HMGP)
Local Planning Mechanisms to be Used in Implementation, if any:	Flood Mitigation Assistance
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Poor land use practices can lead to greater damage in hazard events
Hazard(s) Addressed:	Tornado, Thunderstorm, Flood, Winter, Earthquake, Dam Failure, Wildfire, Sinkhole.
Action or Project	
Action/Project Number:	Rockaway Beach 2.5
Name of Action or Project:	Update Codes
Action or Project Description:	Adopt updated international codes and land use development policies, where applicable.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$100 annually
Benefits:	Decreases the exposure of buildings to hazard events
Plan for Implementation	
Responsible Organization/Department:	Aldermen, City Clerk, Building Inspector
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	2-3 years
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	No flood zone building

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Extra runoff can exacerbate flash flooding
Hazard(s) Addressed:	Thunderstorm, Flood
Action or Project	
Action/Project Number:	Rockaway Beach 2.6
Name of Action or Project:	Runoff Ordinance Enforcement
Action or Project Description:	Enforce measures to control runoff from developing areas outside the floodplain where ordinances have not been enacted.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$100 annually
Benefits:	Reduces extra runoff, helping reduce levels of flash flooding
Plan for Implementation	
Responsible Organization/Department:	Aldermen, City Clerk
Action/Project Priority:	STAPLEE score: 41 Priority: High
Timeline for Completion:	2 years
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	Storm Water/Drainage Ordinance
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Exposure of structures to flooding
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Rockaway Beach 2.7
Name of Action or Project:	NFIP Requirement Enforcement
Action or Project Description:	Communities in Taney County that participate in NFIP will enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SPFAs).
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	Unknown
Benefits:	Mitigates the damage to structures in flooding events
Plan for Implementation	
Responsible Organization/Department:	City Aldermen
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	4+ years
Potential Fund Sources:	Grants (HMGP)
Local Planning Mechanisms to be Used in Implementation, if any:	NFIP
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Rockaway Beach 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$1,000 annually
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	City, Aldermen
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	12+ months
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Poor 911 addressing makes emergency response difficult
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Rockaway Beach 3.2
Name of Action or Project:	911 Addressing
Action or Project Description:	Educate the public on the importance of and enforce visible 911 addressing.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$150 annually
Benefits:	Improved emergency response during and after hazard events
Plan for Implementation	
Responsible Organization/Department:	Police Department, City Aldermen
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Inability to dispose of debris after hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter, Earthquake, Dam Failure
Action or Project	
Action/Project Number:	Rockaway Beach 3.5
Name of Action or Project:	Debris Disposal
Action or Project Description:	Identify debris disposal and burning locations in community to facilitate recovery from large scale hazard events.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$3,000-5,000 annually
Benefits:	Recovery from hazards will be helped by identifying debris disposal locations
Plan for Implementation	
Responsible Organization/Department:	Waster Services, City, Aldermen
Action/Project Priority:	STAPLEE score: 33 Priority: High
Timeline for Completion:	12 months
Potential Fund Sources:	Grants (HMGP), General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Lack of hazard mitigation principles in city and county plans
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Rockaway Beach 3.7
Name of Action or Project:	Hazard Mitigation in Plans
Action or Project Description:	Integrate hazard mitigation into comprehensive plans and storm water management policies.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$500
Benefits:	Plans will have include hazard mitigation principles, improving resilience to hazard events
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	4+ years
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Update, review, and improve Hazard Mitigation Plan

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Rockaway Beach 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$500
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	4+ years
Potential Fund Sources:	General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Poor coordination about infrastructure development can lead to flood damage
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Rockaway Beach 3.9
Name of Action or Project:	Infrastructure Coordination
Action or Project Description:	Continue coordination to promote infrastructure development practices that reduce damage from flooding.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	Unknown
Benefits:	Better infrastructure development will decrease damage during flood events
Plan for Implementation	
Responsible Organization/Department:	Planning and Zoning
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Consult outside agencies

Action Worksheet	
Name of Jurisdiction:	City of Rockaway Beach
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Rockaway Beach 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100 annually
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	On-going and updated PRN.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Bull Creek 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$100
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 45 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Building loss in wildfire events
Hazard(s) Addressed:	Wildfire
Action or Project	
Action/Project Number:	Bull Creek 1.2
Name of Action or Project:	Fire-Resistant Construction
Action or Project Description:	Encourage the use of non-combustible materials for new construction, and fire resistant landscaping techniques and planting materials in wildfire hazard areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$100
Benefits:	Reduction of property loss during wildfires.
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of public involvement in mitigation activities
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Bull Creek 1.3
Name of Action or Project:	Citizen Preparedness
Action or Project Description:	Promote participation in citizen preparedness activities, such as: Citizen Corps, CERT, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100-\$200 Monthly
Benefits:	Increases citizen awareness of mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Board of Trustees
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Trustees has adopted a Citizens on Patrol Program. The program has radios, colored vests, flash lights, clip boards, and a golf cart for patrols

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Bull Creek 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$50-\$100
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Floodplain Manager
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Bull Creek has purchased a NOAA radio for city hall

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Bull Creek 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$50-\$100
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Private funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Bull Creek 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$100
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Bull Creek 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Bull Creek 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$100
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of safe rooms
Hazard(s) Addressed:	Tornado
Action or Project	
Action/Project Number:	Bull Creek 1.12
Name of Action or Project:	Safe Room Education
Action or Project Description:	Promote and distribute FEMA publication 320 which provides information on construction plans and cost estimates for building safe rooms in homes or small businesses, and cost estimates for construction.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$100
Benefits:	Improves education on safe room construction
Plan for Implementation	
Responsible Organization/Department:	EMD
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to extreme temperatures
Hazard(s) Addressed:	Winter, heat
Action or Project	
Action/Project Number:	Bull Creek 1.13
Name of Action or Project:	Heating and Cooling Centers
Action or Project Description:	Organize outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers in the community.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-\$100
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Flood damage to properties and infrastructure
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Bull Creek 2.1
Name of Action or Project:	Flood Mitigation
Action or Project Description:	Acquire, elevate or flood-proof properties and critical infrastructure within flood hazard areas.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$0-\$100
Benefits:	Reduces risk of flood damage to properties and infrastructure
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Bull Creek 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$0-\$200
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Poor land use practices can lead to greater damage in hazard events
Hazard(s) Addressed:	Tornado, Thunderstorm, Flood, Winter, Earthquake, Dam Failure, Wildfire, Sinkhole.
Action or Project	
Action/Project Number:	Bull Creek 2.5
Name of Action or Project:	Update Codes
Action or Project Description:	Adopt updated international codes and land use development policies, where applicable.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$0-\$50
Benefits:	Decreases the exposure of buildings to hazard events
Plan for Implementation	
Responsible Organization/Department:	Board of Trustees
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Extra runoff can exacerbate flash flooding
Hazard(s) Addressed:	Thunderstorm, Flood
Action or Project	
Action/Project Number:	Bull Creek 2.6
Name of Action or Project:	Runoff Ordinance Enforcement
Action or Project Description:	Enforce measures to control runoff from developing areas outside the floodplain where ordinances have not been enacted.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Reduces extra runoff, helping reduce levels of flash flooding
Plan for Implementation	
Responsible Organization/Department:	Board of Trustees
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Exposure of structures to flooding
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Bull Creek 2.7
Name of Action or Project:	NFIP Requirement Enforcement
Action or Project Description:	Communities in Taney County that participate in NFIP will enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SPFAs).
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Mitigates the damage to structures in flooding events
Plan for Implementation	
Responsible Organization/Department:	Board of Trustees
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Poor maintenance of waterways
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Bull Creek 2.8
Name of Action or Project:	Waterway Maintenance
Action or Project Description:	Work with regulatory agencies to obtain appropriate permits to maintain waterways in order to reduce the impact of flooding.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$500-\$5,000
Benefits:	Helps reduce the impact and extent of flooding
Plan for Implementation	
Responsible Organization/Department:	Board of Trustees
Action/Project Priority:	STAPLEE score: 42 Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	General Funds, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Bull Creek 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100-\$200
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	EMD
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Poor 911 addressing makes emergency response difficult
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Bull Creek 3.2
Name of Action or Project:	911 Addressing
Action or Project Description:	Educate the public on the importance of and enforce visible 911 addressing.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-\$100
Benefits:	Improved emergency response during and after hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of water rescue capability
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Bull Creek 3.4
Name of Action or Project:	Water Rescue
Action or Project Description:	Enhance water rescue capabilities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100-\$1000
Benefits:	Emergency response teams will be better equipped to perform water rescues during flood events
Plan for Implementation	
Responsible Organization/Department:	Public Works
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of hazard mitigation principles in city and county plans
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Bull Creek 3.7
Name of Action or Project:	Hazard Mitigation in Plans
Action or Project Description:	Integrate hazard mitigation into comprehensive plans and storm water management policies.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Plans will have include hazard mitigation principles, improving resilience to hazard events
Plan for Implementation	
Responsible Organization/Department:	Board of Trustees
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Bull Creek 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	EMD
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Poor coordination about infrastructure development can lead to flood damage
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Bull Creek 3.9
Name of Action or Project:	Infrastructure Coordination
Action or Project Description:	Continue coordination to promote infrastructure development practices that reduce damage from flooding.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-\$100
Benefits:	Better infrastructure development will decrease damage during flood events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Bull Creek
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Bull Creek 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$8,000
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	Public Works
Action/Project Priority:	STAPLEE score: 47 Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Sewer/Water/General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Saddlebrooke 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$2,000
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Trustees of the Village.
Action/Project Priority:	STAPLEE score: 35 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Reviewed the actions and hazard programs with community as documented in minutes.

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Saddlebrooke 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$200
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	1 year
Potential Fund Sources:	General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Saddlebrooke 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$50
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	Document included in welcoming package and on website/On-going
Potential Fund Sources:	General funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Saddlebrooke 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$50-200
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Saddlebrooke 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100-500
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	3 years
Potential Fund Sources:	General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Exposure of structures to flooding
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Saddlebrooke 2.7
Name of Action or Project:	NFIP Requirement Enforcement
Action or Project Description:	Communities in Taney County that participate in NFIP will enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SPFAs).
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$2,000-5,000
Benefits:	Mitigates the damage to structures in flooding events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees.
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	Immediate/On-going through Flood Plain Administrator (Trustee)
Potential Fund Sources:	General fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing

Report of Progress	N/A
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Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Poor maintenance of waterways
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Saddlebrooke 2.8
Name of Action or Project:	Waterway Maintenance
Action or Project Description:	Work with regulatory agencies to obtain appropriate permits to maintain waterways in order to reduce the impact of flooding.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$1,000-\$10,000
Benefits:	Helps reduce the impact and extent of flooding
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	Immediate/On-going
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Saddlebrooke 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$3,000-5,000
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 37 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General Fund

Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Poor 911 addressing makes emergency response difficult
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Saddlebrooke 3.2
Name of Action or Project:	911 Addressing
Action or Project Description:	Educate the public on the importance of and enforce visible 911 addressing.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$50-100
Benefits:	Improved emergency response during and after hazard events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 43 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Lack of hazard mitigation principles in city and county plans
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Saddlebrooke 3.7
Name of Action or Project:	Hazard Mitigation in Plans
Action or Project Description:	Integrate hazard mitigation into comprehensive plans and storm water management policies.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$50-200
Benefits:	Plans will have include hazard mitigation principles, improving resilience to hazard events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 36 Priority: High

Timeline for Completion:	2 years
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Saddlebrooke 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$200-500
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 43 Priority: High
Timeline for Completion:	5+ years
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Poor coordination about infrastructure development can lead to flood damage
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Saddlebrooke 3.9
Name of Action or Project:	Infrastructure Coordination
Action or Project Description:	Continue coordination to promote infrastructure development practices that reduce damage from flooding.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$50-300
Benefits:	Better infrastructure development will decrease damage during flood events
Plan for Implementation	
Responsible Organization/Department:	Village Trustees

Action/Project Priority:	STAPLEE score: 44 Priority: High
Timeline for Completion:	5+ years
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Village of Saddlebrooke
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Saddlebrooke 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$2,500-4,000
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	Village Trustees
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	36 months
Potential Fund Sources:	General Fund
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Bradleyville R-I
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Bradleyville R-I 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-100
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	5 years/on-going
Potential Fund Sources:	Local effort – county taxes
Local Planning Mechanisms to be Used in Implementation, if any:	Administration/Re-evaluation
Progress Report	
Action Status	Revised, continuing
Report of Progress	Started-Discussion with school board

Action Worksheet	
Name of Jurisdiction:	Bradleyville R-I
Risk / Vulnerability	
Problem being Mitigated:	Poor education about hazard mitigation
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Bradleyville R-I 1.4
Name of Action or Project:	Mitigation Education
Action or Project Description:	Promote natural hazard mitigation educational programs in school communications and curriculum, where feasible.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost – Personnel and materials available
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	5 years/on-going
Potential Fund Sources:	State and local revenue available to schools.
Local Planning Mechanisms to be Used in Implementation, if any:	Review of curriculum
Progress Report	
Action Status	Continuing
Report of Progress	Continuing classes concerning all types of hazards.

Action Worksheet	
Name of Jurisdiction:	Bradleyville R-I
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Bradleyville R-I 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration, media classes
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	5 years/on-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Administration Evaluation
Progress Report	
Action Status	Revised, continuing
Report of Progress	List or add to Facebook page, mass texting.

Action Worksheet	
Name of Jurisdiction:	Bradleyville R-I
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Bradleyville R-I 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$500,000-1,000,000
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	School Board and Administration
Action/Project Priority:	STAPLEE score: 31 Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	FEMA Grants or other grants/donations
Local Planning Mechanisms to be Used in Implementation, if any:	Administration research costs.
Progress Report	
Action Status	Revised, continuing
Report of Progress	No Started. Cost is prohibitive. Cannot match any grants – lack of funding.

Action Worksheet	
Name of Jurisdiction:	Bradleyville R-I
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Bradleyville R-I 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration, staff
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	Immediate/on-going
Potential Fund Sources:	No extra cost to district.
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency drills include in each year's calendar.
Progress Report	
Action Status	Revised, continuing
Report of Progress	We keep current plans and routinely practice drills. We do not provide any safe places for the public.

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Bradleyville R-I
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Bradleyville R-I 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-300
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 37 Priority: High
Timeline for Completion:	Ongoing/5 years
Potential Fund Sources:	Local Tax Revenue
Local Planning Mechanisms to be Used in Implementation, if any:	Administration

Progress Report	
Action Status	Revised, continuing
Report of Progress	Participation in Hazard Mitigation Planning Research webinars, Articles, available training sessions.

Action Worksheet	
Name of Jurisdiction:	Bradleyville R-I
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Bradleyville R-I 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No cost
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 43 Priority: High
Timeline for Completion:	1 year
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Administration continue to research.
Progress Report	
Action Status	Continuing
Report of Progress	Checking for feasibility of saferoom.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Taneyville R-II 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Taneyville School
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	12-18 months/on-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Annual re-evaluation
Progress Report	
Action Status	Revised, continuing
Report of Progress	On-going

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Poor education about hazard mitigation
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Taneyville R-II 1.4
Name of Action or Project:	Mitigation Education
Action or Project Description:	Promote natural hazard mitigation educational programs in school communications and curriculum, where feasible.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Blended with current programs and facilities.
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Taneyville Schools and faculty
Action/Project Priority:	STAPLEE score: 43 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Annual evaluation
Progress Report	
Action Status	Continuing
Report of Progress	On-going

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Taneyville R-II 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$35-60
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 34 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	Fund 2 Operation Expenses
Local Planning Mechanisms to be Used in Implementation, if any:	Annual Evaluation
Progress Report	
Action Status	Revised, continuing
Report of Progress	Annual evaluation/Monitoring Equipment

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Taneyville R-II 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Annual Evaluation
Progress Report	
Action Status	Revised, continuing
Report of Progress	Continual communication to parents about apps/notifications using social media.

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Taneyville R-II 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$180,000-1,000,000
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	Board of Education and Administration
Action/Project Priority:	STAPLEE score: 37 Priority: High
Timeline for Completion:	5+ years
Potential Fund Sources:	FEMA, funds for capital projects
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Cost is the biggest barrier

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Taneyville R-II 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Updated every August

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Taneyville R-II 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	No cost
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Administration and Board of Education
Action/Project Priority:	STAPLEE score: 27 Priority: Medium
Timeline for Completion:	3-5+ years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taneyville R-II 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No cost
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	Annually

Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Open school resources for community training throughout each year.

Action Worksheet	
Name of Jurisdiction:	Taneyville R-II
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taneyville R-II 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-potential matching cost
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	Continuous
Potential Fund Sources:	Fund for Capital Improvement
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	1-5 years depending on funding available.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Forsyth R-III 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	School Administration
Action/Project Priority:	STAPLEE score: 37 Priority: High

Timeline for Completion:	12-18 months. On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Administration annual evaluation
Progress Report	
Action Status	Revised, continuing
Report of Progress	Re-evaluate annually

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Poor education about hazard mitigation
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Forsyth R-III 1.4
Name of Action or Project:	Mitigation Education
Action or Project Description:	Promote natural hazard mitigation educational programs in school communications and curriculum, where feasible.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-500
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Science Department
Action/Project Priority:	STAPLEE score: 37 Priority: High
Timeline for Completion:	3-5 years
Potential Fund Sources:	Local/state funds or any other resources for curriculum
Local Planning Mechanisms to be Used in Implementation, if any:	Teachers evaluation of curriculum
Progress Report	
Action Status	Continuing
Report of Progress	Teachers/Administration re-evaluation

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Forsyth R-III 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 37 Priority: High
Timeline for Completion:	12-18 months

Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Yearly information sent home to parents and students.

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Forsyth R-III 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$300-800
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	3-5 years
Potential Fund Sources:	State/local funds. Work with local/city officials on low cost systems.
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Map of district with radio coverage

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Forsyth R-III 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$300,000-1,000,000
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	Central Officer Administration
Action/Project Priority:	STAPLEE score: 33 Priority: High
Timeline for Completion:	3-5 years
Potential Fund Sources:	Local/state/FEMA

Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	No action. Just built a shelter in the last 5 years.

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Forsyth R-III 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost.
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration with help from City Fire Department
Action/Project Priority:	STAPLEE score: 37 Priority: High
Timeline for Completion:	3-12 months. On-going if building changes
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	District walk through and evaluation of grounds with Administration and Forsyth Fire Department.
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Forsyth R-III 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	No cost
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	

Responsible Organization/Department:	Central Office Administration
Action/Project Priority:	STAPLEE score: 33 Priority: High
Timeline for Completion:	1-4 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Empire Electric and Forsyth City
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Forsyth R-III 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No cost
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Central Office Administration
Action/Project Priority:	STAPLEE score: 31 Priority: High
Timeline for Completion:	6-18 months
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Participate in any provided MIMS training.
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Forsyth R-III
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Forsyth R-III 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.

Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No cost
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Central Office Administration
Action/Project Priority:	STAPLEE score: High Priority: 39
Timeline for Completion:	Present-5 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Action is started and we will continue to monitor throughout the next 5 years.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Branson R-IV
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Branson R-IV 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Minimal. Distribute through Facebook and website.
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Communications Department
Action/Project Priority:	STAPLEE score: 34 Priority: High
Timeline for Completion:	2 years
Potential Fund Sources:	Within current salary
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Will begin to work on this step.

Action Worksheet	
Name of Jurisdiction:	Branson R-IV
Risk / Vulnerability	
Problem being Mitigated:	Poor education about hazard mitigation
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Branson R-IV 1.4
Name of Action or Project:	Mitigation Education

Action or Project Description:	Promote natural hazard mitigation educational programs in school communications and curriculum, where feasible.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Implement into science department curriculum
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Secondary School
Action/Project Priority:	STAPLEE score: 25 Priority: Medium
Timeline for Completion:	3 years
Potential Fund Sources:	Grants for curriculum revision
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Will start planning this step.

Action Worksheet	
Name of Jurisdiction:	Branson R-IV
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Branson R-IV 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Already in place
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	In place/On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Will review to make sure that all areas have radios in place.

Action Worksheet	
Name of Jurisdiction:	Branson R-IV
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Branson R-IV 1.9
Name of Action or Project:	Mobile Hazard Alert

Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Safety/Communication Department
Action/Project Priority:	STAPLEE score: 26 Priority: Medium
Timeline for Completion:	2 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Post to website
Progress Report	
Action Status	Revised, continuing
Report of Progress	Start planning process.

Action Worksheet	
Name of Jurisdiction:	Branson R-IV
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Branson R-IV 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	7 million
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	Central Office
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	2-5 years
Potential Fund Sources:	Local and Federal Grants 75/25
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Will study to see if we qualify.

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Branson R-IV
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure

Action or Project	
Action/Project Number:	Branson R-IV 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	N/A
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Safety Coordinator
Action/Project Priority:	STAPLEE score: 24 Priority: Low
Timeline for Completion:	2-5 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	School District is willing to help.

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Branson R-IV
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Branson R-IV 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Safety Coordinator
Action/Project Priority:	STAPLEE score: 20 Priority: Low
Timeline for Completion:	2-5 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Willing to attend meetings.

Action Worksheet	
Name of Jurisdiction:	Branson R-IV
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Branson R-IV 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	7 million for shelters
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Central Office
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	2-5 years
Potential Fund Sources:	Federal Grants
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Will monitor for options.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Hollister R-V
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Hollister R-V 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Cost for social media and traditional media is minimal. \$0-300
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Director of Communications, Assistant Superintendent for District Operations
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	On-going as district implements procedures
Potential Fund Sources:	No additional funding necessary
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing

Report of Progress	Community and parents are notified through social and traditional media as procedures are implemented.
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Action Worksheet	
Name of Jurisdiction:	Hollister R-V
Risk / Vulnerability	
Problem being Mitigated:	Poor education about hazard mitigation
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Hollister R-V 1.4
Name of Action or Project:	Mitigation Education
Action or Project Description:	Promote natural hazard mitigation educational programs in school communications and curriculum, where feasible.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Assistant Superintendent for District Operations and Curriculum
Action/Project Priority:	STAPLEE score: 34 Priority: High
Timeline for Completion:	1-2 years
Potential Fund Sources:	No additional cost
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Will include in Building School Improvement Plan (BSIP)

Action Worksheet	
Name of Jurisdiction:	Hollister R-V
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Hollister R-V 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Currently in use throughout district also used by community volunteers for safe room opening
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Assistant Superintendent of District Operations
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	Completed, Continuing
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	

Action Status	Revised, continuing
Report of Progress	Ongoing review of system notice effectiveness.

Action Worksheet	
Name of Jurisdiction:	Hollister R-V
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Hollister R-V 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A
Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	Completed, On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Completed, continuing
Report of Progress	Completed in current buildings (added 2 safe rooms), will continue to add new safe rooms when new development occurs.

Action Worksheet	
Name of Jurisdiction:	Hollister R-V
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Hollister R-V 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No current cost
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	Completed in current buildings – on-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	

Action Status	Revised, continuing
Report of Progress	Ongoing review of policies and procedures after each use by students and public.

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Hollister R-V
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Hollister R-V 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	Absorbed by current costs
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	Completed, On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	School currently has alternate routes. Some school personnel available to assist flooded areas.

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Hollister R-V
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Hollister R-V 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A
Benefits:	Training for officials will improve response to hazard events

Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 24 Priority: Low
Timeline for Completion:	1-5 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Some school personnel available to assist in area emergencies.

Action Worksheet	
Name of Jurisdiction:	Hollister R-V
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Hollister R-V 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	None
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Assistant Superintendent of District Operations
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Ongoing review of preparation and mitigation policies and procedures. School administration is available for area planning meetings.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Kirbyville R-VI 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost

Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	School Administration
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	Immedite-36 months/On-going
Potential Fund Sources:	Local grants if available
Local Planning Mechanisms to be Used in Implementation, if any:	Administration/District Evaluation Documents
Progress Report	
Action Status	Revised, continuing
Report of Progress	Continual Evaluations

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Poor education about hazard mitigation
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Kirbyville R-VI 1.4
Name of Action or Project:	Mitigation Education
Action or Project Description:	Promote natural hazard mitigation educational programs in school communications and curriculum, where feasible.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-1,000
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Administration, Grade level/Content areas
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	3-5 years/On-going
Potential Fund Sources:	Local/State funding
Local Planning Mechanisms to be Used in Implementation, if any:	Curriculum and teacher evaluations.
Progress Report	
Action Status	Continuing
Report of Progress	Teacher/Administration Re-evaluation

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Kirbyville R-VI 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Already have in offices. \$300-600 to replace + add.
Benefits:	Improves communication during hazard events

Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 41 Priority: High
Timeline for Completion:	Immediate-3 years/On-going
Potential Fund Sources:	Local/state funding
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Already have, but could be expanded.

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Kirbyville R-VI 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No estimated cost.
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 39 Priority: High
Timeline for Completion:	18-48 months/On-going
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Annual student/parents information sent home. Use of district emergency communications.

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to hazards
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Kirbyville R-VI 1.10
Name of Action or Project:	New Safe Rooms
Action or Project Description:	Promote construction of safe rooms in new schools, daycares, and nursing homes.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$1,000,000 +

Benefits:	Protects vulnerable populations from hazards
Plan for Implementation	
Responsible Organization/Department:	School Board of Education and Administration
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	3-5 years
Potential Fund Sources:	FEMA grants, SEMA grants, Local
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	School district just built two severe weather structures at both campuses for students and faculty.

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Kirbyville R-VI 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No identifiable cost at this time.
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration, staff, County Emergency Manager
Action/Project Priority:	STAPLEE score: 38 Priority: High
Timeline for Completion:	Immediate/On-going
Potential Fund Sources:	No extra costs
Local Planning Mechanisms to be Used in Implementation, if any:	Administration/Annual Drills
Progress Report	
Action Status	Revised, continuing
Report of Progress	Updated crises plans and routine drills. Already have safe shelters.

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Kirbyville R-VI 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.

Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	No identifiable costs
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Administration, Board of Education
Action/Project Priority:	STAPLEE score: 34 Priority: High
Timeline for Completion:	2-5 years
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Corps/WRVEC/Empire/County
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Kirbyville R-VI 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-1,000
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 32 Priority: High
Timeline for Completion:	2-4 years
Potential Fund Sources:	Local/County/State funds
Local Planning Mechanisms to be Used in Implementation, if any:	Attend NIMS training
Progress Report	
Action Status	Revised, continuing
Report of Progress	Participate in county HMP meetings. Research trainings.

Action Worksheet	
Name of Jurisdiction:	Kirbyville R-VI
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects

Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Kirbyville R-VI 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No identifiable cost at this time.
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 42 Priority: High
Timeline for Completion:	Immediate/On-going
Potential Fund Sources:	Local funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Ongoing action – 5 years

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	OTC Table Rock
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	OTC Table Rock 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100 annually
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Public information office
Action/Project Priority:	STAPLEE score: 32 Priority: High
Timeline for Completion:	Currently in place/On-going
Potential Fund Sources:	Information technology funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	OTC Table Rock

Risk / Vulnerability	
Problem being Mitigated:	Poor education about hazard mitigation
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	OTC Table Rock 1.4
Name of Action or Project:	Mitigation Education
Action or Project Description:	Promote natural hazard mitigation educational programs in school communications and curriculum, where feasible.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$200
Benefits:	Ensures that sirens are in working order when tornado events occur
Plan for Implementation	
Responsible Organization/Department:	Safety and Security Department
Action/Project Priority:	STAPLEE score: 18 Priority: Low
Timeline for Completion:	Currently in place/On-going
Potential Fund Sources:	Safety and Security budget
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis manual education
Progress Report	
Action Status	Continuing
Report of Progress	Manuals are updated every semester.

Action Worksheet	
Name of Jurisdiction:	OTC Table Rock
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	OTC Table Rock 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100 annually
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Safety and Security Department
Action/Project Priority:	STAPLEE score: 42 Priority: High
Timeline for Completion:	Currently in place.
Potential Fund Sources:	Safety and Security budget
Local Planning Mechanisms to be Used in Implementation, if any:	Currently in place
Progress Report	
Action Status	Revised, continuing
Report of Progress	Radios are checked every semester.

Action Worksheet	
Name of Jurisdiction:	OTC Table Rock
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	OTC Table Rock 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$100 annually
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Safety and Security Department
Action/Project Priority:	STAPLEE score: 41 Priority: High
Timeline for Completion:	Currently in place
Potential Fund Sources:	Safety and Security budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Systems tested every semester

Action Worksheet	
Name of Jurisdiction:	OTC Table Rock
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	OTC Table Rock 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$200 annually
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Safety and Security Department
Action/Project Priority:	STAPLEE score: 41 Priority: High
Timeline for Completion:	Currently in place
Potential Fund Sources:	Safety and Security Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Manual
Progress Report	
Action Status	Revised, continuing
Report of Progress	Manuals updated every semester.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 41, Priority: High
Timeline for Completion:	2-4 months/ongoing
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Not started

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Building loss in wildfire events
Hazard(s) Addressed:	Wildfire
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 1.2
Name of Action or Project:	Fire-Resistant Construction
Action or Project Description:	Encourage the use of non-combustible materials for new construction, and fire resistant landscaping techniques and planting materials in wildfire hazard areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Reduction of property loss during wildfires.
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 33, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds, MDC/National Forest funds
Local Planning Mechanisms to be Used in Implementation, if any:	Meetings, social media, website
Progress Report	
Action Status	Revised, continuing
Report of Progress	Not yet started

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$1,400
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 40, Priority: High
Timeline for Completion:	3-6 months
Potential Fund Sources:	Grant (HMGP?)
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Not yet started

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$35/radio + staff costs
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 36, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds
Local Planning Mechanisms to be Used in Implementation, if any:	Social media, meetings, training sessions
Progress Report	
Action Status	Revised, continuing
Report of Progress	Not yet started

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 40, Priority: High
Timeline for Completion:	Unknown
Potential Fund Sources:	Unknown
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Not yet started

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 41, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds, Grants (HMGP?)
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Not yet started

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Exposure of vulnerable populations to extreme temperatures
Hazard(s) Addressed:	Winter, heat
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 1.13
Name of Action or Project:	Heating and Cooling Centers
Action or Project Description:	Organize outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers in the community.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	Unknown
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 38, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds, Grants (HMGP?)
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Not yet started

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	Unknown
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 45, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds, Army Corps, Electric Company
Local Planning Mechanisms to be Used in Implementation, if any:	N/A

Progress Report	
Action Status	New
Report of Progress	Meetings and trainings are ongoing

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$100 per class
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 35, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds, Grants (HMGP?)
Local Planning Mechanisms to be Used in Implementation, if any:	Meetings and trainings
Progress Report	
Action Status	Revised, continuing
Report of Progress	Not yet started

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Firefighting water sources running out during wildfires
Hazard(s) Addressed:	Wildfire and drought
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 3.3
Name of Action or Project:	Water Inventory
Action or Project Description:	Inventory alternative firefighting water sources.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	Unknown
Benefits:	Helps ensure the availability of adequate sources of firefighting water
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 36, Priority: High

Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds, Grants (HMGP?)
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	Not yet started

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Lack of water rescue capability
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 3.4
Name of Action or Project:	Water Rescue
Action or Project Description:	Enhance water rescue capabilities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$10,000-\$20,000
Benefits:	Emergency response teams will be better equipped to perform water rescues during flood events
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO
Action/Project Priority:	STAPLEE score: 37, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds, Grants (HMGP?)
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Small amount of water rescue capability currently

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Inability to dispose of debris after hazards
Hazard(s) Addressed:	Tornado, Thunderstorm, Winter, Earthquake, Dam Failure
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 3.5
Name of Action or Project:	Debris Disposal
Action or Project Description:	Identify debris disposal and burning locations in community to facilitate recovery from large scale hazard events.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	Unknown
Benefits:	Recovery from hazards will be helped by identifying debris disposal locations
Plan for Implementation	
Responsible Organization/Department:	Chief or PIO

Action/Project Priority:	STAPLEE score: 34, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	In progress

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A: absorbed by existing staff costs
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Chief of PIO
Action/Project Priority:	STAPLEE score: 33, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Department funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	Central Taney County Fire Protection District
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Central Taney County Fire Protection District 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	Unknown
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	

Responsible Organization/Department:	Taney County GIS Department
Action/Project Priority:	STAPLEE score: 35, Priority: High
Timeline for Completion:	Ongoing
Potential Fund Sources:	County funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Western Taney County Fire District 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$1,000 annually for advertising and staff cost
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Prevention Office
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	Needs to be done with other prevention activities

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Building loss in wildfire events
Hazard(s) Addressed:	Wildfire
Action or Project	
Action/Project Number:	Western Taney County Fire District 1.2
Name of Action or Project:	Fire-Resistant Construction
Action or Project Description:	Encourage the use of non-combustible materials for new construction, and fire resistant landscaping techniques and planting materials in wildfire hazard areas.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$10,000-50,000
Benefits:	Reduction of property loss during wildfires.

Plan for Implementation	
Responsible Organization/Department:	Prevention Office
Action/Project Priority:	STAPLEE score: 30 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	Federal Rural School Grant
Local Planning Mechanisms to be Used in Implementation, if any:	Wildfire Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	Public perception that it will not happen to them.

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Western Taney County Fire District 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$400
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	District Office
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	6 months
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	It is hard to convince people that it is needed

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Western Taney County Fire District 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.

Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$1,000 in staff time
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Fire District Administration
Action/Project Priority:	STAPLEE score: 44 Priority: High
Timeline for Completion:	On-going, Participation with Corps of Engineers
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	Participate in Dam Planning Efforts
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Western Taney County Fire District 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	N/A
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Training and Education
Action/Project Priority:	STAPLEE score: 34 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	Online Federal programs, general funds
Local Planning Mechanisms to be Used in Implementation, if any:	Regiment of personnel to participate
Progress Report	
Action Status	Revised, continuing
Report of Progress	Requirement for new personnel and for promotional process.

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Firefighting water sources running out during wildfires
Hazard(s) Addressed:	Wildfire and drought

Action or Project	
Action/Project Number:	Western Taney County Fire District 3.3
Name of Action or Project:	Water Inventory
Action or Project Description:	Inventory alternative firefighting water sources.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$50,000 annually
Benefits:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Plan for Implementation	
Responsible Organization/Department:	Water Rescue Team personnel
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	On-going to assure new personnel is trained and equipment is maintained.
Potential Fund Sources:	RHSOC Grant, general funds
Local Planning Mechanisms to be Used in Implementation, if any:	Recruit personnel from fire fighters
Progress Report	
Action Status	Continuing
Report of Progress	Personnel has a training and maintenance schedule for the team.

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Lack of water rescue capability
Hazard(s) Addressed:	Flood
Action or Project	
Action/Project Number:	Western Taney County Fire District 3.4
Name of Action or Project:	Water Rescue
Action or Project Description:	Enhance water rescue capabilities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$50,000 annually
Benefits:	Emergency response teams will be better equipped to perform water rescues during flood events
Plan for Implementation	
Responsible Organization/Department:	Water Rescue Team personnel
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	RHSOC Grant, general funds
Local Planning Mechanisms to be Used in Implementation, if any:	Recruit personnel from fire fighters
Progress Report	
Action Status	Revised, continuing
Report of Progress	Personnel has a training and maintenance schedule for the team.

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Inability to dispose of debris after hazards

Hazard(s) Addressed:	Tornado, Thunderstorm, Winter, Earthquake, Dam Failure
Action or Project	
Action/Project Number:	Western Taney County Fire District 3.5
Name of Action or Project:	Debris Disposal
Action or Project Description:	Identify debris disposal and burning locations in community to facilitate recovery from large scale hazard events.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	Not sure.
Benefits:	Recovery from hazards will be helped by identifying debris disposal locations
Plan for Implementation	
Responsible Organization/Department:	Fire District
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	Continue for personnel with training in debris removal out of road way. Assist Emergency Manager with burning.
Progress Report	
Action Status	Continuing
Report of Progress	

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Western Taney County Fire District 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$1,000 staff time
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Chiefs office
Action/Project Priority:	STAPLEE score: 40 Priority: High
Timeline for Completion:	On-going
Potential Fund Sources:	General Funds
Local Planning Mechanisms to be Used in Implementation, if any:	Finding the grants available and the time to work on it.
Progress Report	
Action Status	Continuing
Report of Progress	Requirements that come with the grants, hesitation to accept the grant, time to look for grants.

Action Worksheet	
Name of Jurisdiction:	Western Taney County Fire District
Risk / Vulnerability	

Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Western Taney County Fire District 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$50,000
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	Prevention
Action/Project Priority:	STAPLEE score: 28 Priority: Medium
Timeline for Completion:	Two years after funding is available.
Potential Fund Sources:	Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Need equipment and personnel to implement.
Progress Report	
Action Status	Continuing
Report of Progress	Do not currently have personnel to implement.

Goal 1: Protect the lives and livelihoods of all citizens.

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Public awareness of hazard vulnerability and mitigation measures.
Hazard(s) Addressed:	All hazards
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 1.1
Name of Action or Project:	Awareness Program
Action or Project Description:	Use local and regional traditional media, and social media platforms, to raise awareness of mitigation activities.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-1,000
Benefits:	Reduction of loss of life, injury, and property during hazard events.
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 25 Priority: Medium
Timeline for Completion:	5 years/On-going
Potential Fund Sources:	Operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 1.7
Name of Action or Project:	NOAA Radio Purchase
Action or Project Description:	Purchase and install NOAA weather radios in schools, government buildings, parks, etc.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$500
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 32 Priority: High
Timeline for Completion:	1 year
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 1.8
Name of Action or Project:	Citizen NOAA Radios
Action or Project Description:	Promote the use of NOAA weather radios by all residents and businesses.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 29 Priority: Medium
Timeline for Completion:	1 year
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Lack of communication during hazard events
Hazard(s) Addressed:	Tornado, thunderstorm, flood, winter, drought, heat.
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 1.9
Name of Action or Project:	Mobile Hazard Alert
Action or Project Description:	Promote local severe weather alert applications for mobile communications devices.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	No cost
Benefits:	Improves communication during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 31 Priority: High
Timeline for Completion:	1 year
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Exposure of the public to hazard events
Hazard(s) Addressed:	Tornado, thunderstorm
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 1.11
Name of Action or Project:	Safe Place Awareness
Action or Project Description:	Create and update tornado/severe storm plans and identify strong, safe places in schools, large facilities, and other establishments serving the public.
Applicable Goal Statement:	Protect the lives and livelihoods of all citizens.
Estimated Cost:	\$0-500
Benefits:	Improves public safety during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Action/Project Priority:	STAPLEE score: 33 Priority: High
Timeline for Completion:	1 year
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Failure of wastewater treatment facilities in hazard events
Hazard(s) Addressed:	Flood, Drought, Dam failure.
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 2.3
Name of Action or Project:	Wastewater Treatment Resilience
Action or Project Description:	Ensure that wastewater treatment systems will function during flood and drought events.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	\$100,000
Benefits:	Protects vulnerable populations from extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	Administrator/Operations
Action/Project Priority:	STAPLEE score: 37 Priority: High
Timeline for Completion:	On-going/Continuous
Potential Fund Sources:	Operating Budget, Capital Sewer Sales Tax
Local Planning Mechanisms to be Used in Implementation, if any:	Capital Improvement Plan
Progress Report	
Action Status	Revised, continuing
Report of Progress	The district has spent over \$300,000 since the last Hazard Mitigation Plan update in flood proofing/Mitigating Sewer lift stations from flooding.

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Lack of preparedness for dam failure event
Hazard(s) Addressed:	Dam Failure
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 2.4
Name of Action or Project:	Dam Emergency Partnership
Action or Project Description:	Partner with and participate in dam emergency planning and exercises.
Applicable Goal Statement:	Reduce the potential impact of natural disasters to property, infrastructure and the local economy.
Estimated Cost:	No cost
Benefits:	Helps the county be prepared for a dam failure event
Plan for Implementation	
Responsible Organization/Department:	Administrator
Action/Project Priority:	STAPLEE score: 30 Priority: High
Timeline for Completion:	5 years
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	New
Report of Progress	N/A

Goal 3: Ensure and enhance continued operation of government, emergency functions, and critical infrastructure during a disaster.

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Lack of training for municipal officials
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 3.1
Name of Action or Project:	NIMS Training
Action or Project Description:	Promote and provide NIMS training and/or information for all elected officials, public administrators, school administrators, and community stakeholders.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	No cost
Benefits:	Training for officials will improve response to hazard events
Plan for Implementation	
Responsible Organization/Department:	Administrator
Action/Project Priority:	STAPLEE score: 36 Priority: High
Timeline for Completion:	1 year
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Revised, continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Lack of funding for hazard mitigation projects
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 3.8
Name of Action or Project:	Funding Identification
Action or Project Description:	Continue to monitor and identify funding from state and federal programs for hazard mitigation activities.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-1,000
Benefits:	Increased opportunities for funding for hazard mitigation activities
Plan for Implementation	
Responsible Organization/Department:	Operations
Action/Project Priority:	STAPLEE score: 30 Priority: High
Timeline for Completion:	5 years/On-going
Potential Fund Sources:	Operating Budget

Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

Action Worksheet	
Name of Jurisdiction:	Taney County Regional Sewer District
Risk / Vulnerability	
Problem being Mitigated:	Lack of data for decision making and facilities management
Hazard(s) Addressed:	All Hazards
Action or Project	
Action/Project Number:	Taney County Regional Sewer District 3.10
Name of Action or Project:	GIS Development
Action or Project Description:	Continue development of Geographic Information Systems (GIS) to further identify, analyze, and map hazard prone areas to enhance decision making and facilities management.
Applicable Goal Statement:	Ensure and enhance continued operation of government, emergency functions and critical infrastructure in a disaster.
Estimated Cost:	\$0-1,000
Benefits:	More and better data will help with mitigation-related decision making
Plan for Implementation	
Responsible Organization/Department:	GIS
Action/Project Priority:	STAPLEE score: 32 Priority: High
Timeline for Completion:	2 years
Potential Fund Sources:	Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	N/A
Progress Report	
Action Status	Continuing
Report of Progress	N/A

5 PLAN MAINTENANCE PROCESS

5 PLAN MAINTENANCE PROCESS5.1

5.1 Monitoring, Evaluating, and Updating the Plan..... 5.1

 5.1.1 Responsibility for Plan Maintenance 5.1

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 5.2 Incorporation into Existing Planning Mechanisms 5.3

 5.3 Continued Public Involvement 5.5

This chapter provides an overview of the overall strategy for plan maintenance and outlines the method and schedule for monitoring, updating and evaluating the plan. The chapter also discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

5.1 Monitoring, Evaluating, and Updating the Plan

44 CFR Requirement 201.6(c)(4): The plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

5.1.1 Responsibility for Plan Maintenance

The Mitigation Planning Committee (MPC) has served as an advisory body during the plan update process, but is not a standing committee. Many MPC representatives and stakeholders are also represented on the Local Emergency Planning Committee (LEPC), as well as several other committees and groups in Taney County. The LEPC is overseen by the County Emergency Management Director, thus this group will be responsible for overseeing the plan monitoring, evaluation and maintenance of the Plan. However, it will be up to the County Commission, Office of Emergency Management, and the local jurisdictions to carry out the goals and actions outlined. Maintenance will involve agreement of the participating jurisdictions, including schools and special districts, to:

- Meet annually, and after a disaster event, to monitor and evaluate the implementation of the plan;
- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation of high priority, low- or no-cost recommended actions;
- Maintain vigilant monitoring of multi-objective, cost-share, and other funding opportunities to help the community implement the plan’s recommended actions for which no current funding exists;
- Monitor and assist in implementation and update of this plan;
- Keep the concept of mitigation in the forefront of community decision making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters;
- Report on plan progress and recommended changes to the County Board of Supervisors and governing bodies of participating jurisdictions; and

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- Inform and solicit input from the public.

5.1.2 Plan Maintenance Schedule

The EMD will facilitate annual meetings and after a state or federally declared hazard event as appropriate to monitor progress and update the mitigation strategy. The Taney County EMD will be responsible for initiating the plan reviews, which may occur during a regularly scheduled LEPC meeting, and will invite additional members of the MPC to attend. Taney County Emergency Management has scheduled the 2018 annual plan review meeting for October 18, 2018 at 9 a.m. in Forsyth. This will occur immediately preceding the regularly scheduled LEPC meeting.

In coordination with all participating jurisdictions, a five-year written update of the plan will be submitted to the Missouri State Emergency Management Agency (SEMA) and FEMA Region VII per Requirement §201.6(c)(4)(i) of the Disaster Mitigation Act of 2000, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule.

5.1.3 Plan Maintenance Process

Progress on the proposed actions can be monitored by evaluating changes in vulnerabilities identified in the plan. During the annual meeting, members of the MPC or expanded LEPC group will review changes in vulnerability identified as follows:

- Decreased vulnerability as a result of implementing recommended actions,
- Increased vulnerability as a result of failed or ineffective mitigation actions,
- Increased vulnerability due to hazard events, and/or
- Increased vulnerability as a result of new development (and/or annexation).

Future 5-year updates to this plan will include the following activities:

- Consideration of changes in vulnerability due to action implementation,
- Documentation of success stories where mitigation efforts have proven effective,
- Documentation of unsuccessful mitigation actions and why the actions were not effective,
- Documentation of previously overlooked hazard events that may have occurred since the previous plan approval,
- Incorporation of new data or studies with information on hazard risks,
- Incorporation of new capabilities or changes in capabilities,
- Incorporation of growth data and changes to inventories, and
- Incorporation of ideas for new actions and changes in action prioritization.

In order to best evaluate any changes in vulnerability as a result of plan implementation, the participating jurisdictions will adopt the following process:

- Each proposed action in the plan identified an individual, office, or agency responsible for action implementation. This entity will track and report on an annual basis to the jurisdictional committee member on action status. The entity will provide input on whether the action as implemented meets the defined goals and is likely to be successful in reducing risk.
- If the action does not meet identified goals, the jurisdictional member will determine necessary remedial action, making any required modifications to the plan.

Changes will be made to the plan to remedy actions that have failed or are not considered feasible. Feasibility will be determined after a review of action consistency with established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed as well during the monitoring of this plan. Updating of the plan will be accomplished by written changes and submissions, as the EMD and expanded LEPC deems appropriate and necessary. Changes will be approved by the Taney County Board of Commissioner and the governing boards of the other participating jurisdictions.

5.2 Incorporation into Existing Planning Mechanisms

44 CFR Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

Where possible, plan participants, including school and special districts, will use existing plans and/or programs to implement hazard mitigation actions. Those existing plans and programs were described in Section 2.2 of this plan. Based on the capability assessments of the participating jurisdictions, communities in Taney County will continue to plan and implement programs to reduce losses to life and property from hazards. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing actions, where possible, through the following plans:

- General or master plans of participating jurisdictions;
- Ordinances of participating jurisdictions;
- Taney County Emergency Operations Plan;
- Capital improvement plans and budgets;
- Other community plans within the County, such as water conservation plans, storm water management plans, and parks and recreation plans;
- School and Special District Plans and budgets; and
- Other plans and policies outlined in the capability assessment sections for each jurisdiction in Chapter 2 of this plan.

Jurisdictional representatives involved in updating these existing planning mechanisms will be responsible for integrating the findings and actions of the mitigation plan, as appropriate. The EMD and expanded LEPC is also responsible for monitoring this integration and incorporation of the appropriate information into the next five-year update of the multi-jurisdictional hazard mitigation plan.

Additionally, after the annual review of the Hazard Mitigation Plan, the Taney County Emergency Management Director will provide the updated Mitigation Strategy with current status of each mitigation action to the County Commission, as well as all Mayors, City Clerks, and School District Superintendents. The Emergency Manager Director will request that the mitigation strategy be incorporated, where appropriate, in other planning mechanisms.

Table 5.1 below lists the planning mechanisms by jurisdiction into which the Hazard Mitigation Plan will be integrated.

Table 1.1. Planning Mechanisms for Integration of Hazard Mitigation Plan

Jurisdiction	Planning Mechanisms	Integration Process for Previous Plan	Integration Process for Current Plan
Unincorporated Taney County	Hazard Mitigation Plan Emergency Operations Plan Dam Emergency Action Plan County Ordinance	Emergency Management Committee	Local Emergency Planning Committee
City of Branson	Comprehensive Plan Capital Improvement Plan Local Emergency Operations Plan Land-use Plan Flood Mitigation Assistance (FMA) Plan Zoning Ordinance Building Code Floodplain Ordinance Storm Water/Drainage Ordinance	City Council Local EMD- LEOP	Local Emergency Operations Plan City Ordinance Fire Codes
City of Forsyth	Comprehensive Plan Firewise Protection Program Hazard Mitigation Plan Severe Weather Response Plan Dam Emergency Action Plan	City Council Local EMD	City Council City Ordinance
City of Hollister	Comprehensive Plan Floodplain Ordinance Social Media/Website Building Codes NFIP	Local EMD Health Department County Emergency Manager Public Safety Administration Public Works Department	City Council
City of Merriam Woods	Board of Aldermen City Codes Zoning Ordinance Drainage Ordinance Site Plan Review NFIP Social Media	N/A	Board of Aldermen City Codes Social Media
City of Rockaway Beach	Comprehensive Plan Local Emergency Operations Plan Land-use Plan Flood Mitigation Assistance (FMA) Plan Zoning Ordinance Building Code NFIP Storm Water/Drainage Ordinance	N/A	Building Code Local Emergency Operations Plan Flood Mitigation Assistance Storm Water/Drainage Ordinance NFIP
Village of Bull Creek	County Mitigation Plan Floodplain Ordinance	N/A	NFIP/ Floodplain Ordinance
Village of Saddlebrooke	Land Use Plan Building Codes Floodplain Ordinance	N/A	Board of Trustees

Western Taney County Fire Protection District	Fire portion of 2012 IBC Firewise Fire Safety programs	N/A	Fire Safety programs
Central Taney Fire Protection District	Social media/Website Firewise Smoke Alarm Program	N/A	Social media/Website
Taney County Regional Sewer District	Capital Improvement Plan Sewer Use Regulations Property acquisition and easements	Capital Improvement Plan	Capital Improvement Plan
Bradleyville R-I	Master Plan Capital Improvement Plan School Emergency Plan Social Media/Website	School Emergency Plan Social Media/Website	School Emergency Plan Social Media/Website
Taneyville R-II	Master Plan Capital Improvement Plan School Emergency Plan	School Emergency Plan	School Emergency Plan
Forsyth R-III	Master Plan Capital Improvement Plan School Emergency Plan	School Emergency Plan	School Emergency Plan
Branson R-IV	Master Plan Capital Improvement Plan School Emergency Plan Social Media/Website	School Emergency Plan Social Media/Website	School Emergency Plan Social Media/Website
Hollister R-V	Master Plan Capital Improvement Plan School Emergency Plan	School Emergency Plan Capital Improvement Plan	School Emergency Plan
Kirbyville R-VI	Master Plan Capital Improvement Plan School Emergency Plan	School Emergency Plan Capital Improvement Plan	School Emergency Plan
OTC Table Rock	Capital Improvement Plan School Emergency Plan	N/A	School Emergency Plan

5.3 Continued Public Involvement

44 CFR Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.

The hazard mitigation plan update process provides an opportunity to publicize success stories resulting from the plan's implementation and seek additional public comment. Information about the annual reviews will be posted in the local newspaper as well as on the Taney County website following each annual review of the mitigation plan. Taney County Emergency Management also plans to allow residents to continue to provide feedback via survey on the County website. This feedback will be included in the annual plan review process.

When reconvening for the next five-year update, the EMD will coordinate with all stakeholders participating in the planning process and reconvene the MPC. Included in this group will be those who joined the MPC after the initial effort, to update and revise the plan. Public notice will be posted and public participation will be actively solicited, at a minimum, through available website postings and press releases to local media outlets, primarily newspapers.