

# Saline County Hazard Mitigation Plan



A joint effort between Saline County, City of Alexander, Bauxite, Benton, Bryant, Haskell, Shannon Hills, Traskwood, and the Bauxite, Benton, Bryant, and Harmony Grove School Districts.



**Developed by Central Arkansas  
Planning and Development District**

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**RESOLUTION #**

**A RESOLUTION ADOPTING THE SALINE COUNTY HAZARD MITIGATION PLAN FOR THE CITY/COUNTY/SCHOOL DISTRICT SALINE COUNTY ARKANSAS.**

**WHEREAS**, certain areas of Saline County are subject to periodic flooding and other natural and man-caused hazards with the potential to cause damages to people's properties with the area; and

WHEREAS, the City/County/School District desires to prepare and mitigate for such circumstances; and  
WHEREAS, under the Disaster Mitigation Act of 2000, the United States Federal Emergency Management Agency (FEMA) required that local jurisdictions have in place a FEMA-approved Hazard Mitigation Action Plan as a condition of receipt of certain future Federal mitigation funding after November 1, 2004; and

WHEREAS, to assist cities and counties in meeting this requirement, Saline County, with the assistance of Central Arkansas Planning and Development District, has initiated development of County wide, multi-jurisdiction Hazard Mitigation Plan the County and all jurisdictions of the County specifically the cities and school districts;

NOW, THEREFORE, BE IT RESOLVED BY THE City/Quorum/Board of City/County/School District.

That the City/County/School District, Arkansas adopts those portions of the Plan relating to and protecting its jurisdictional area against all hazards (date) and

Appoints the Emergency Management Director to assure that the Hazard Mitigation Plan be reviewed at least annually and that any needed adjustment to the Hazard Mitigation Plan be developed and presented to the governing board for consideration; and

Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the Hazard Mitigation Plan.

APPROVED and ADOPTED on this \_\_\_\_ day of \_\_\_\_, 2016

APPROVED:

\_\_\_\_\_  
Mayor/Judge/Superintendent

ATTEST:

\_\_\_\_\_  
Secretary

# SECTION 1

## *Planning Process*

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### **1.1 Plan Introduction**

The purpose of the Saline County Hazard Mitigation Plan is to provide guidance for hazard mitigation activities in Saline County. The Saline County Office of Emergency Management has the responsibility to coordinate all local activities relating to hazard evaluation and mitigation, and to prepare and submit to FEMA a Local Mitigation Plan following the criteria established in 44 CFR 201.4 and Section 322 of the Disaster Mitigation Act of 2000 (Public Law 106-390). The Disaster Mitigation Act of 2000 became law on October 30, 2000, and amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act (“Stafford Act”) (Public Law 93-288, as amended). Regulations for this activity can be found in Title 44 of the Code of Federal Regulations Part 206, Subpart M.

This plan meets requirements for a local mitigation plan under Final Rule 44 CFR 201.4, published in the Federal Register by the Federal Emergency Management Agency (FEMA) on February 28, 2002. Meeting the requirements of the regulations cited above keeps Saline County qualified to obtain all disaster assistance including hazard mitigation grants available through the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended.

Saline County initiated the Hazard Mitigation planning process by securing a FEMA HMGP grant to complete the Plan. Saline County hired Central Arkansas Planning and Development District, Inc. (CAPDD) to author the plan. Saline County Office of Emergency Management and CAPDD worked together to engage the county, cities, communities and school districts in the planning process.

The Saline County Hazard Mitigation Plan is being developed to assess the ongoing natural hazard mitigation activities in Saline County, to evaluate additional mitigation measures that should be undertaken, and to outline a strategy for implementation of mitigation projects. This plan is multi-jurisdictional with a planning area that includes all of unincorporated Saline County and the municipalities within the County including the Cities of Alexander, Bauxite, Benton, Bryant, Haskell, Shannon Hills, and Traskwood. This plan also includes the School Districts located in Saline County; Bauxite, Benton, Bryant, and Harmony Grove, and Sheridan School Districts.

Formal adoption and implementation of a hazard mitigation plan presents many benefits to Saline County and its residents. By identifying problems and possible solutions in advance of a disaster, Saline County, participating communities and school districts will be in a better position to obtain pre- and post-disaster funding. Specifically, the Disaster Mitigation Act of 2000 establishes a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). It requires that states and communities have a FEMA approved hazard mitigation plan in place prior to receiving post-disaster HMGP funds. Adoption of this hazard mitigation strategy will also increase Saline County’s eligibility for assistance from FEMA’s Flood Mitigation Assistance (FMA) program. Saline County and participating communities will also gain additional credit points under FEMA’s Community Rating System (CRS) program, which provides discounts on National Flood Insurance Program (NFIP) flood insurance premiums for residents of communities that voluntarily participate in this program. Most importantly, Saline County will be able to recover faster and more wisely from a disaster. Through planning and acting on local mitigation strategies, the city will reduce vulnerability to disasters and identify opportunities for mitigation. In addition, the communities may meet comprehensive planning and other planning requirements and achieve community goals. The priorities of the 2015 Saline County Hazard Mitigation Plan remain consistent with the 2008 FEMA approved Saline County Hazard Mitigation Plan. The priorities of the county have not changed.

### **1.1.2 Parts of the Plan**

The Saline County Hazard Mitigation Plan is divided into sections to address FEMA requirements for a local multi-jurisdictional plan. These sections are;

1. Planning Process
2. Planning Area and Resources
3. Hazard Identification and Risk Assessment
4. Mitigation Strategy
5. Acronyms
6. Plan Adoption

This plan is multi-jurisdictional with a planning area that includes all of unincorporated Saline County and the municipalities within the County including the Cities of Alexander, Bauxite, Benton, Bryant, Haskell, Shannon Hills, and Traskwood. This plan also includes the School Districts located in Saline County; Bauxite, Benton, Bryant, and Harmony Grove, and Sheridan School Districts.

All jurisdictions and school districts listed above actively participated in the planning process from its inception. Each jurisdiction provided a representative to participate on the planning team or if a representative was unable to attend, they chose to be represented by the Saline County Office of Emergency Management. Planning team members actively participated in meetings, solicited input from members of their communities, and ensured that all jurisdiction information was reflected in the plan.

### **1.1.3 Involvement of Local Governments**

Saline County's mitigation planning process was initiated in May 22, 2014, when the County, through the efforts of the Saline County Office of Emergency Management (OEM), was awarded a Hazard Mitigation Grant Program (HMGP) grant by FEMA through ADEM, under former Saline County Judge Lanny Fite. Saline County negotiated a subcontract with Central Arkansas Planning and Development District to facilitate their mitigation planning efforts. Central Arkansas Planning and Development District served as facilitator as well as the Director of the Saline County OEM, led the planning effort.

Once all participating cities and school districts for which the Saline County OEM is responsible formally agreed to participate, an initial planning team comprised of representatives from Saline County and participating jurisdiction was organized. This initial team was instructed to solicit interested persons from their community to participate on the planning team. This solicitation led to the addition of several additional planning team members. The planning team members include representatives from County government, local city governments, public works officials, emergency management officials, fire districts, and school districts. All participating jurisdictions actively participated in the planning process through soliciting input from their communities and participation in meetings. If a city or school district could not attend a meeting, all minutes and materials were mailed out to the jurisdiction. The Saline County Mitigation Planning Team also discussed mitigation actions, projects, and past hazard occurrences with CAPDD during conference calls.

Three planning events were scheduled throughout the planning process. The Central Arkansas Planning and Development District also utilized technical assistance provided by the Arkansas Department of Emergency Management by receiving training at workshops provided by ADEM and FEMA. Guidelines for the mitigation plan were discussed as well as training for entering data and how to locate and research the data needed for the mitigation plan. It was stressed to have public involvement and to work together with cities, schools, and County.

Natural Hazard Mitigation Questionnaires were distributed via plan meetings. The natural hazards that concerned the general public were drought, floods, tornadoes, thunderstorm winds, lightning and hail, and winter storms. The information from these questionnaires was given to CAPDD to be held in storage.

### **1.1.4 Neighboring Community Involvement**

During the Mitigation Planning Process for Saline County, neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development were informed of the meetings and invited personally by Saline County OEM to attend planning meetings. Lacye Blake from the Arkansas Dept. of Emergency Management was involved as the State's point of contact. She was consulted when



planning questions arose. The Saline County Coordinator, Robert McGowen, and Deputy Coordinator, CJ Engel, were brought into the discussion of prioritizing hazards and mitigation projects for Saline County. Several other first responders were involved during the planning process. In order to reach out to organizations that regulate development, Audrey Villegas, Planning Board Correspondent for the Saline County Planning Board, was personally invited by CJ Engel to attend the planning meetings. The Pulaski County OEM, Andy Traffenstedt, was also invited by CJ Engel to attend the meeting due to the overlap of some jurisdictions.

In summary, the planning process consisted of the following items:

- County appointed a planning committee consisting of mayors and city personnel, school personnel, fire department members, emergency workers, planning and development district employees, and LEPC/Citizens Corp/Hazard Mitigation Planning Team Members.
- County engaged Central Arkansas Planning and Development District (CAPDD), the regional planning organization, to provide staff support in conducting the planning process and preparing the plan.
- Meetings were held with committee members to understand and agree on planning processes and steps required, including organizing resources, assess hazards, develop a mitigation plan, and implement the plan and monitor progress.
- County and City personnel invited local planning and zoning board members to attend the mitigation plan meetings.
- Central Arkansas Planning and Development District staff attended workshops presented by FEMA and ADEM on the preparation of the mitigation plan.
- Central Arkansas Planning and Development District staff also had numerous subsequent discussions about the planning process with ADEM staff. The CAPDD staff also discussed planning process issues with others in the state that were involved in the preparation of other hazard mitigation plans such as UALR which prepared the State Hazard Mitigation Plan, other Planning and Development Districts.

The Planning Committee utilized these technical documents:

- Arkansas Hazard Mitigation Plan was used as a guidance tool for past occurrences and risk assessments.
- Saline County Land Use Plan was used to prevent land-use conflicts during developing mitigation actions.
- Saline County Emergency Operations Plan was used to better understand how Saline County responds to emergencies and disasters while providing for the safety and welfare of its citizens. Plan provided information about critical facilities in the County.
- CAPDD Comprehensive Economic Development Strategy was used to review Disaster and Resiliency procedures from natural disasters that helped during the mitigation actions process.
- Saline County Floodplain Ordinance was used to maintain compliance of the NFIP ordinance during mitigation actions.
- Saline County Arkansas Continuity of Operations Plan was utilized in the capability assessment to incorporate how the departments and agencies in Saline County continue the operations of their essential functions under a broad range of circumstances including all-hazard emergencies as well as natural, man-made, and technological threats and national security emergencies

#### **Timeline:**

1. Meeting of County Judge Jeff Arey, Saline County Office of Emergency Director Robert McGowen, and Central Arkansas Planning and Development District Program Manager Josh Rogers. Discussion included the planning area, planning team and how/when to set up the first meeting.
2. First organized planning meeting was held June 30, 2015 at the Saline County Office of Emergency Services. Each person in attendance received a copy of the PowerPoint "Overview of the Mitigation Planning Process" excerpts from the FEMA's Local Mitigation Planning Handbook March 2013; Tasks 4- Community Capabilities, Task 5- Risk Assessment and Critical Facilities Task 6-Development a Mitigation Strategy and Task 7- Procedures to Keep Plan Updated. The PowerPoint was presented, and then the floor was opened for a questions and answer session.

Saline County Hazard Mitigation Questionnaires were handed out and participants were asked to forward this information to co-workers and public.

3. Second Meeting was held August 5, 2015 - A PowerPoint addressed Task 5- Risk Assessment and Critical Facilities. Jurisdictions were given critical facility map from previous plan along with materials to make and changes/updates. Information on risk assessment development, risks and impacts, the location areas, extent of the magnitude and discussion of probably of future events and identifying the community assets.
4. Third Meeting was held November 18, 2015 - A PowerPoint addressed Task 6 and 7 , Develop a Mitigation Strategy and Procedures to Keep Plan Updated and 7 were covered. Mitigation Goals, Mitigation Action, and Action Plan were the main topic of planning meeting. Each jurisdiction was given a copy of the previous version of the mitigation action table. CAPDD then emailed the planning team and set up one-on-one meetings with jurisdictions in order to update the action table once the jurisdiction had time to review it.

### **1.1.5 Public Review**

A public notice was posted in advance of each plan meeting on the County's website. It explained the subject of the meeting and invited members of the public to attend. Planning team members were encouraged to invite other stakeholders, employees, or members of the public. Members of the public would have had access to the same hazard questionnaires, and their information would have been recorded the same as a planning team member. Their comments and suggestions would have been given the same amount of attention as a planning team member.

After the completion of the planning meetings, the draft plan was provided on the Central Arkansas Planning and Development District (CAPDD) website <http://www.capdd.org/index.php/fema-hazard-mitigation-plans.html> for the LEPC members to review before submission to the public.

Planning members were made aware of the requirement that the Saline County Hazard Mitigation Plan must be submitted to the Arkansas Department of Emergency Management for review prior to the State submitting plans to FEMA.

### **1.1.6 Plan Developers**

#### ***Planning Team-***

<b>Jurisdiction</b>	<b>Participation/Involvement</b>
Saline County, unincorporated areas and state agencies	<p>County Judge Jeff Arey <i>County Judge received hazard mitigation workbook, attended planning meetings, completed questionnaires, and participated in historical natural disasters.</i></p> <p><u>Saline County Office of Emergency Management</u>; Robert McGowen, Director, CJ Engel, Deputy Director <i>All members of SCOEM received hazard mitigation workbook, attended planning meetings, completed and distributed hazard questionnaires, participated in collection of historical natural disasters information. Participated in phone calls, emails, and other correspondence with facilitator and school districts, cities, and fire departments.</i></p> <p><u>Arkansas Department of Emergency Management</u>; Lacye Blake <i>Received hazard mitigation workbook, attended first planning meeting. Addressed questions from planning team about hazard mitigation.</i></p>
City of Alexander	<p>Mayor Paul Mitchell <i>Mayor attending planning meetings, completed questionnaires and participated in open discussions and natural hazards events.</i></p>
City of Bauxite	<p>Mayor Bill Russell, <i>Mayor attended planning meetings, received hazard mitigation workbooks, participated in open discussions about historical storm events and completed questionnaires.</i></p>
City of Benton	<p>Mayor David Mattingly City of Benton, Quinn Rambo</p>



	<i>Attended planning meetings, completed community capabilities assessment and natural hazard questionnaire, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
City of Bryant	Mayor Jill Dabbs Fire Chief, JP Jordan <i>Attended planning meetings, completed community capabilities assessment and natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
City of Haskell	Mayor Janie Lyman <i>Attended planning meetings, completed community capabilities assessment and natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
City of Shannon Hills	Mayor Mike Kemp <i>Attended planning meetings, completed community capabilities assessment and natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
City of Traskwood	Mayor Michael Nash <i>Attended planning meetings, completed community capabilities assessment and natural hazard questionnaires, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
Benton School District	Supt. Jeff Collum & John Thompson <i>Attended planning meetings, received hazard mitigation workbook, completed inclement weather questionnaire for school district, completed natural hazards questionnaire assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
Bauxite School District	Supt. Matt Donaghy, & Doug Quinn <i>Attended planning meetings, received hazard mitigation workbook, completed inclement weather questionnaire for school district, completed natural hazards questionnaire assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
Bryant School District	Supt. Tom W. Kimbrell & Devin Sherrill <i>Attended planning meetings, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
Harmony Grove School District	Supt., Dan Henley <i>Attended planning meetings, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
Sheridan School District	Supt., Jerrod Willians Sheridan Shcools, Katy Miller <i>Attended planning meetings, received hazard mitigation workbook assisted with Risk Assessment, and participated in open discussion of historical storm events.</i>
Central Arkansas Planning and Development	Josh Rogers <i>Program Manager and facilitator for the Saline County Hazard Mitigation Planning process.</i>

## **1.2 Plan Maintenance Process**

### **1.2.1 Monitoring, Evaluation and Updating the Plan**

Although FEMA regulations suggest a plan update within five years, Saline County has developed a method to ensure that monitoring, evaluation, and updating of the Saline County Hazard Mitigation Plan occurs annually or as needed. The plan will be submitted to FEMA within five-years for review. The County will form a Hazard Mitigation Plan Evaluation Sub-Committee of the existing Saline County Local Emergency Planning Committee (LEPC). The LEPC consists of members from fire service, health officials, emergency management, law enforcement, community groups, transportation, hospital personnel, school administration and emergency medical personnel, elected officials, and owners and operators of covered facilities. The Director of the Saline County Office of Emergency Management will be the initial Chair of the sub-committee or Planning Team Leader. The Planning Team Leader will contact the planning team committee, set up meeting dates, and insure that each community will maintain a representative on the team.

The responsible party for overseeing and assuring plan updates is the Saline County Office of Emergency Management. At this time, the maintenance procedures for the Mitigation Plan will be conducted at the LEPC meeting, which are held quarterly. Each community's representative will be responsible for monitoring and evaluating the

progress of the mitigation strategies in the plan. The team members will monitor the plan by providing a mitigation planning update at each quarterly meeting.

During the last LEPC meeting of each year, the sub-committee will meet to review and evaluate each goal and objective to determine their relevance to changing situations in Saline County, as well as changes in State or Federal policy, and to ensure that they are addressing current and expected conditions. The Sub-committee will also review and evaluate the risk assessment portion of the plan to determine if this information should be updated or modified. The parties or agencies responsible for the various implementation actions (identified in Section 4) will report on the status of their projects and will evaluate which implementation processes worked well, any difficulties encountered, how coordination efforts were proceeding, and which strategies should be revised.

The Saline County Office of Emergency Management will then have three months to update and make changes to the plan before submitting it to the Sub-Committee members and the State Hazard Mitigation Officer. If no changes are necessary, the State Hazard Mitigation Officer will be given a justification for this determination. Comments and recommendations offered by Sub-Committee members and the State Hazard Mitigation Officer will be incorporated into the plan update.

The Hazard Mitigation Plan will take into account any changes in these plans and incorporate the information accordingly in its next update.

The Planning Committee will make every attempt to ensure the public will be able to directly comment on, and provide feedback about the Plan by posting the agenda and submitting meeting notice to the local media through newspaper articles, County website and postings in public locations. This process will inform the County citizens on any changes or revisions of the Saline County Hazard Mitigation Plan.

Since future plans and government regulations might need to be adopted into the Hazard Mitigation Plan, Saline County Quorum Court will be informed of any necessary changes to the plan by the Team Leader, to be adopted into the Plan by County resolution. The Arkansas Department of Emergency Management will be contacted as necessary for professional and technical advice as needed.

### **1.2.2 Continuous Public Involvement**

Saline County is dedicated to involving the public directly in the continual reshaping and updating of the Saline County Hazard Mitigation Plan. The Hazard Mitigation Plan Evaluation Sub-Committee members are responsible for the annual monitoring, evaluation, and update of the plan. Although they represent the public to some extent, the public will be able to directly comment on and provide feedback about the plan.

Copies of the FEMA approved Saline County Hazard Mitigation Plan will be available at <http://www.capdd.org/index.php/fema-hazard-mitigation-plans.html> . Contained in the plan are the address, phone number, and e-mail of the Director of the Saline County Office of Emergency Management, the primary point of contact for the plan.

A public announcement inviting all interested parties will be made prior to each quarterly LEPC meeting, including the December LEPC meeting during which the Hazard Mitigation Planning Sub-Committee reviews and evaluates the plan in its entirety. This meeting will provide the public a forum for which the general public can express concerns, opinions, or ideas about the plan. The Saline County Office of Emergency Management and the Saline County LEPC will publicize and host this meeting. Following the meeting, the evaluation committee will review the comments and make changes to the plan, as appropriate.

## ***SECTION 2 Planning Area and Resources***



## 2.2 Capability Assessment:

Jurisdiction	Planning and Regulatory Capabilities									
	Comprehensive / Master Plans	Local Emergency Operations Plan	Continuity of Operations Plan	Road Foreman	Stormwater Management Plan	Community Wildfire Protection Plan	Building Codes	Fire Department ISO Rating	Development Ordinance	Site Plan Review Requirements
Saline County	X	X	X	X	X	X		X	x	X
Alexander		X	X	X	X	X	X	X	X	X
Bauxite		X	X	X	X	X	X	X	X	X
Bryant	X	X	X	X	X	X	X	X	X	X
Benton	X	X	X	X	X	X	X	X	X	X
Haskell		X		X	X		X	X	X	X
Shannon Hills	X	X	X	X	X		X	X	X	X
Traskwood		X		X				X		X
Bryant S.D.		X	X							X
Bauxite S.D.		X	X							X
Benton S.D.		X	X							X
Harmony Grove S.D.		X	X							X
Sheridan S.D.		X	X							X
Jurisdiction	Administrative and Technical Capabilities									
	Planning Commission	Maintenance Programs to Reduce Risk	Mutual Aid Agreements	GIS Analysts	Warning Systems/Services	Hazard Data and Information	Grant Writers	Emergency Manager	Floodplain Administrator	
Saline County	X	X	X	X	X	X	X	X	X	
Alexander	X	X	x		X		X		X	
Bauxite	X	X	X		X		X			
Bryant	X	X	X		X	X	X		X	
Benton	X	X	X		X	X	X		X	
Haskell	X	X	X		X		X		X	
Shannon Hills	X		X		X		X		X	
Traskwood			X		X		X			
Bryant S.D.	X	X	X				X			
Bauxite S.D.	X	X	X				X			

Benton S.D.	X	X	X				X		
Harmony Grove S.D.	X	X	X				X		
Sheridan S.D.	X	X	X				X		

Jurisdiction	Financial Capabilities					
	General Improvements Project Funding	Authority to levy taxes/millage for purposes	Community Development Block Grant	Federal Funding Programs	State funding programs	Impact fees for new development
Saline County	X	X	X	X	X	X
Alexander	X	X	X	X	X	X
Bauxite	X	X	X	X	X	X
Bryant	X	X	X	X	X	X
Benton	X	X	X	X	X	X
Haskell	X	X		X	X	X
Shannon Hills	X	X		X	X	X
Traskwood	X	X		X	X	
Bryant S.D.	X	X		X	X	
Bauxite S.D.	X	X		X	X	
Benton S.D.	X	X		X	X	
Harmony Grove S.D.	X	X		X	X	
Sheridan S.D.	X	X		X	X	
Jurisdiction	Education and Outreach Capabilities					
	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations	Ongoing public education or information program	Natural disaster or safety related school programs	StormReady certification	Firewise Communities certification	Public-private partnership initiatives addressing disaster-related issues
Saline County	X	X	X			X
Alexander	X	X	X			X
Bauxite	X	X	X			X
Bryant	X	X	X			X



Benton	X	X	X			X
Haskell		X	X			X
Shannon Hills		X	X			X
Traskwood						X
Bryant S.D.		X	X			X
Bauxite S.D.		X	X			X
Benton S.D.		X	X			X
Harmony Grove S.D.		X	X			X
Sheridan S.D.		X	X			X

### **Improving Capabilities:**

Leadership and representatives in all participating jurisdictions are very receptive to mitigation. The Saline County Judge, Saline County OEM, and County Foreman make mitigation a first priority. Representatives are actively seeking additional funding to improve the readiness and preparedness of their communities. Ways the communities are improving capabilities are:

- Becoming StormReady Certified and organizing a Community Emergency Response Team (CERT).
- Becoming FireWise Communities
- Regularly attend state-wide full-scale drills for evacuation.
- Participate in the Great Arkansas Shake-Out.
- Increase GIS capabilities.
- Expand upon education and outreach by establishing and promoting cooling centers and shelters.
- Expand the Road Department Budget to improve culverts, box tiles, and water crossings.
- Representatives to attend training through ADEM and FEMA to include ICS and NIMS.
- Create a Transportation Plan to include in the Master Plan.

### **2.3 Incorporation into Existing Planning Mechanisms**

In the past, the Saline County, as well as the cities' road departments have used the mitigation actions list to inform their project needs plan for roadways that are affected by flooding. The City of Bryant incorporated the mitigation plan into its public works master plan, which eventually led to the City receiving an FEMA grant to mitigate flooding in a subdivision. The mitigation plan was also used to inform the County's ArCAT, which was a capabilities assessment of the local governments' regarding emergency management response. Each school districts has used the mitigation plan to identify a need for a tornado safe room. Specifically, Bauxite School District used the plan to include an identified project on its facilities planning list; They now have a constructed a safe room at their middle school due to an awarded FEMA mitigation grant.

The Saline County Hazard Mitigation Plan will be integrated into other plans. Integrating hazard mitigation into the local comprehensive plan thereby establishes resilience as an overarching value of a community and provides the opportunity to continuously manage development in a way that does not lead to increased hazard vulnerability.

<b>Jurisdiction</b>	<b>Planning Mechanism &amp; How Incorporated</b>
<b>Saline County</b>	<p><b>Comprehensive / Master Plans:</b> The risk assessment will inform all strategic strategies of hazard areas. The data and maps will be used as supporting documentation to encourage political agendas to deter from development and activity in hazard areas. Integrating mitigation concepts and policies will provide a means for implementing initiatives through legal frameworks and enhances the opportunity to reduce the risk posed by hazard events.</p> <p><b>Emergency Operation Plan (EOP):</b> The Saline County HMP will be annexed into the Saline County EOP.</p>



	<p><b>COOP:</b> The risk assessment will inform the risk analysis in the COOP, and the vulnerable structures will inform the COOP of places to avoid when selecting alternate locations.</p> <p><b>County Foreman/Road Department:</b> Risk assessment will inform committees and leadership to adopt policies that will direct growth away from known hazard areas. It will also insure that county roads and other critical infrastructure are designed to withstand the probable extent of known hazards so they function in the event of an emergency or disaster. The monthly report that is submitted every month detailing roads and bridges needing repairs will also feed the mitigation plan to prioritize mitigation when repairing roads and bridges with concrete stabilization and correcting erosion. There are 770 miles of county and public access roads that the county oversees and encourages public complaints and suggestions when mitigation roads.</p> <p><b>Storm Water Management:</b> Saline County will require permits for sewer systems and construction to guide storm waters in designated Regulated Small (Small MS4) areas.</p> <p><b>Grant Applications:</b> Data and maps will be used as supporting documentation in grant applications. Risk assessment will be used to identify hazard areas for community development and critical facilities in need of repair and renovation.</p> <p><b>Budget:</b> The local budget will be fund hazard mitigation goals and objectives as budge allows. The mitigation strategies will inform city councils of most important construction projects to be completed.</p> <p><b>Emergency Manager:</b> Will be the liaison between county and city leadership and ADEM and FEMA to encourage and monitor regional recovery, response, mitigation, and readiness by conduction training sessions and informing leadership and staff of available training like ICS, NIMS, and flood plain management.</p> <p><b>Flood Plain Administrator:</b> County Foreman is the CFM. Will attend regular meetings to inform leadership and community of the water source out of Lake Brewer. He assist in filling out addendum forms and permits for those building in flood plains. Monitors the county's compliance with the NFIP.</p> <p><b>Development Ordinance:</b> Will provide an opportunity to account for the natural hazards described in the risk assessment prior to the development of land as they formulate regulations when the land is subdivided. Also, A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes, or development permitting, the county will review the hazard mitigation plan to ensure consistent and compatible land use.</p> <p><b>Fire Department ISO Rating:</b> The mitigation actions will employ effective fire prevention practices without unduly affecting those who have not yet adopted such measures.</p> <p><b>Economic Development Plans:</b> The risk assessment will inform these plans and guide commercial or industrial expansion in areas that are not vulnerable to damage or disruption form hazards and by making community resilience a key feature in attracting, expanding, and retaining businesses and industry.</p> <p><b>Ongoing public education or information program:</b> The county received funds for a radio tower for the public's use of NOAA radios. The county will continue to encourage use of these radios and bettering the service by purchasing a repeater.</p> <p><b>Maintenance Programs to Reduce Risk:</b> The county Foreman oversees the maintenance program. The Foreman ensures all trees along roads are trimmed and maintained. Also monitors drainage systems to ensure that debris is not causing flooding. Also purchases signs for dangerous roads during flooding that reads "Unsafe when Underwater"</p>
Alexander	<p><b>Grant Applications:</b> Data and maps will be used as supporting documentation in grant applications. Risk assessment will be used to identify hazard areas for community development and critical facilities in need of repair and renovation</p>

	<p><b>Building Codes:</b> The risk assessment will identify the type, frequency, and intensity of hazards present in specific geographic areas. The building codes will in turn use this information to develop and regulate construction standards in order to increase the structure's resiliency to the specified hazards.</p> <p><b>Subdivision Management:</b> Will provide an opportunity to account for the natural hazards described in the risk assessment prior to the development of land as they formulate regulations when the land is subdivided.</p> <p><b>Budget:</b> The local budget will be fund hazard mitigation goals and objectives as budge allows. The mitigation strategies will inform city councils of most important construction projects to be completed.</p> <p><b>Fire Department ISO Rating:</b> The mitigation actions will employ effective fire prevention practices without unduly affecting those who have not yet adopted such measures.</p>
<b>Bauxite</b>	<p><b>Grant Applications:</b> Data and maps will be used as supporting documentation in grant applications. Risk assessment will be used to identify hazard areas for community development and critical facilities in need of repair and renovation</p> <p><b>Subdivision Management:</b> Will provide an opportunity to account for the natural hazards described in the risk assessment prior to the development of land as they formulate regulations when the land is subdivided.</p> <p><b>Building Codes:</b> The risk assessment will identify the type, frequency, and intensity of hazards present in specific geographic areas. The building codes will in turn use this information to develop and regulate construction standards in order to increase the structure's resiliency to the specified hazards.</p> <p><b>Budget:</b> The local budget will be fund hazard mitigation goals and objectives as budge allows. The mitigation strategies will inform city councils of most important construction projects to be completed.</p> <p><b>Fire Department ISO Rating:</b> The mitigation actions will employ effective fire prevention practices without unduly affecting those who have not yet adopted such measures.</p>
<b>Bryant</b>	<p><b>Grant Applications:</b> Data and maps will be used as supporting documentation in grant applications. Risk assessment will be used to identify hazard areas for community development and critical facilities in need of repair and renovation</p> <p><b>Subdivision Management:</b> Will provide an opportunity to account for the natural hazards described in the risk assessment prior to the development of land as they formulate regulations when the land is subdivided.</p> <p><b>Budget:</b> The local budget will be fund hazard mitigation goals and objectives as budge allows. The mitigation strategies will inform city councils of most important construction projects to be completed.</p> <p><b>Fire Department ISO Rating:</b> The mitigation actions will employ effective fire prevention practices without unduly affecting those who have not yet adopted such measures.</p> <p><b>Building Codes:</b> The risk assessment will identify the type, frequency, and intensity of hazards present in specific geographic areas. The building codes will in turn use this information to develop and regulate construction standards in order to increase the structure's resiliency to the specified hazards. The codes the County uses are those from the State of Arkansas.</p>
<b>Benton</b>	<p><b>Grant Applications:</b> Data and maps will be used as supporting documentation in grant applications. Risk assessment will be used to identify hazard areas for community development and critical facilities in need of repair and renovation</p>

	<p><b>Subdivision Management:</b> Will provide an opportunity to account for the natural hazards described in the risk assessment prior to the development of land as they formulate regulations when the land is subdivided.</p> <p><b>Fire Department ISO Rating:</b> The mitigation actions will employ effective fire prevention practices without unduly affecting those who have not yet adopted such measures.</p> <p><b>Budget:</b> The local budget will be fund hazard mitigation goals and objectives as budge allows. The mitigation strategies will inform city councils of most important construction projects to be completed.</p> <p><b>Building Codes:</b> The risk assessment will identify the type, frequency, and intensity of hazards present in specific geographic areas. The building codes will in turn use this information to develop and regulate construction standards in order to increase the structure’s resiliency to the specified hazards. The codes the County uses are those from the State of Arkansas.</p>
Shannon Hills	<p><b>Grant Applications:</b> Data and maps will be used as supporting documentation in grant applications. Risk assessment will be used to identify hazard areas for community development and critical facilities in need of repair and renovation</p> <p><b>Subdivision Management:</b> Will provide an opportunity to account for the natural hazards described in the risk assessment prior to the development of land as they formulate regulations when the land is subdivided.</p> <p><b>Fire Department ISO Rating:</b> The mitigation actions will employ effective fire prevention practices without unduly affecting those who have not yet adopted such measures.</p> <p><b>Budget:</b> The local budget will be fund hazard mitigation goals and objectives as budge allows. The mitigation strategies will inform city councils of most important construction projects to be completed.</p> <p><b>Building Codes:</b> The risk assessment will identify the type, frequency, and intensity of hazards present in specific geographic areas. The building codes will in turn use this information to develop and regulate construction standards in order to increase the structure’s resiliency to the specified hazards. The codes the County uses are those from the State of Arkansas.</p>
All participating School Districts	<p><b>Grant Applications:</b> Data and maps will be used as supporting documentation in grant applications. Risk assessment will be used to identify hazard areas for community development and critical facilities in need of repair and renovation</p> <p><b>Building Codes:</b> The risk assessment will identify the type, frequency, and intensity of hazards present in specific geographic areas. The building codes will in turn use this information to develop and regulate construction standards in order to increase the structure’s resiliency to the specified hazards.</p> <p><b>Budget:</b> The local budget will be fund hazard mitigation goals and objectives as budge allows. The mitigation strategies will inform the school board of most important construction projects to be completed.</p> <p><b>Natural Disaster or Safety Related School Programs:</b> School districts will provide FEMA brochures for StormReady and Turn Around Don’t Drown brochures to students that will enlighten them and their families of hazards identified.</p>

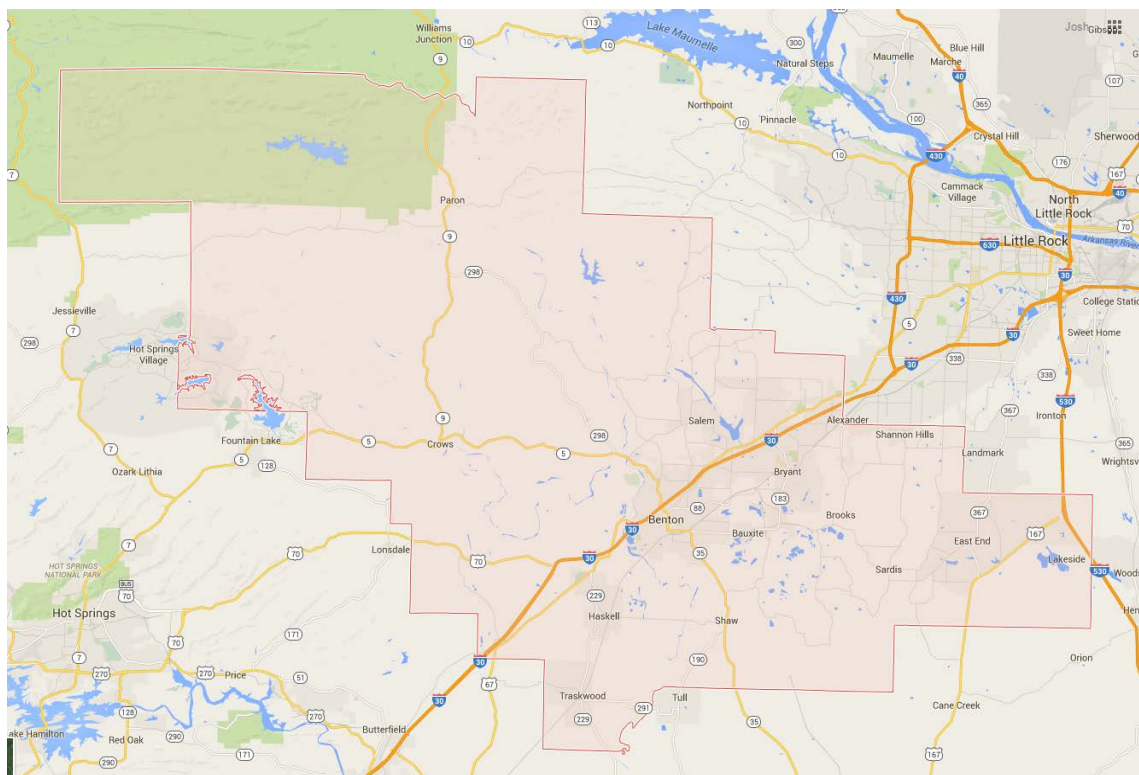
The Saline County Hazard Mitigation Plan will be available for public view on the Central Arkansas Planning and Development District’s website <http://www.capdd.org/index.php/fema-hazard-mitigation-plans.html> for any entity or citizen who wishes to view or make a copy of it. The Saline County OEM, and all jurisdictions will keep copies of the plan and make available to the public.

Saline County Quorum Court, City Councils of Alexander, Bauxite, Benton, Bryant, and Shannon Hills will adopt the approved mitigation plan through resolution. The Board of Directors of the school districts of Benton, Bauxite and Bryant, Harmony Grove, and Sheridan will be adopting the approved Hazard Mitigation Plan by formal adoption or

resolution in their existing plans that are relevant to Hazard Mitigation.

Any participant without previous plans in place will be encouraged to develop zoning plans and other land ordinance plans to incorporate mitigation strategies. Participants incorporating the Saline County Hazard Mitigation Plan pertain to them. After these discussions, each incorporating mechanism will follow their local laws or guidelines necessary for implementation through open forum public meetings. Each incorporating party will monitor the progress of any incorporated mitigation strategies and report the success or failure to the Local Emergency Planning Committee for inclusion in its annual report. After each update of the Saline County Hazard Mitigation Plan, each incorporating participant will be informed of the changes so they can reflect these changes in their plans also. Incorporating the plan into other plans will be done by vote at the regular quorum court meetings and passed by resolution.

### **2.3.1 NFIP Participation**



**Saline County is a member of the National Flood Insurance Program, Community Identification Number 050191. Their initial Flood Hazard Boundary Map was identified 08/9/77, the Initial Flood Insurance Rate Map identified 11/17/1982, current effective map date 06/19/12, Reg-Emergency Date 09/22/1978.**

Saline County participates in the NFIP by assisting the residences by assisting with the filling out documents for the NFIP and educating citizens about the NFIP program. Permits are issued for those wishing to build in the floodplain, then the floodplain manager monitors the construction process to insure compliance. The county plans to continue to participating through continuing floodplain education, and staying in compliance with NFIP.

*Insurance Summary-* Saline County has 148 policies within its jurisdiction (excluding cities) in the amount of \$35,878,800.00 force.

*Staff Resources-* Saline County has a Certified Floodplain Manager who oversees the floodplain management. The NFIP administrative services include floodplain maps, permit reviews and inspections.

If floodplain resources are needed that the county cannot provide, the County's CFM request assistance from the Arkansas Natural Resource Conservation Service and FEMA.

*Compliance History-* Saline County is in good standing with the NFIP, and there are no outstanding compliance issues. The last Community Assistance Visit (CAV) or Community Assistance was on 09/26/2013.

Saline County intends to maintain compliance with the NFIP by continuing ensure all constructing, locating, substantially altering or changing the use of any structure or land after the effective date of the County's floodplain ordinance. The current FIRM maps are date 06/19/2012.

Electric Utilities- Entergy, Benton Utilities, and First Electric

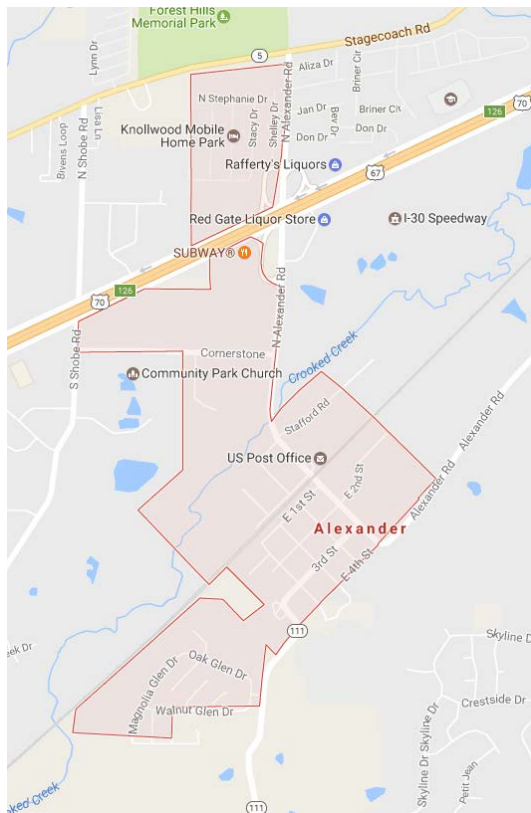
Telephone Utilities- AT&T

Gas Utilities- Centerpoint Energy

Water Systems Utilities- Benton Utilities, Sardis Water Dept, Tull Water Dept,

Wastewater Treatment: City of Bauxite, City of Benton, City of Bryant, City of Alexander

### **City of Alexander**



**City of Alexander is a member of the National Flood Insurance Program, Community Identification Number 050226. Their initial Flood Hazard Boundary Map was identified 04/18/1975, the Initial Flood Insurance Rate Map identified 01/20/1982, current effective map date 7/06/15 D), Reg-Emergency Date 09/26/1980.**

The City of Alexander participates in the NFIP by assisting the residences by assisting with the filling out documents for the NFIP and educating citizens about the NFIP program. Permits are issued for those wishing to build in the



floodplain, then the floodplain manager monitors the construction process to insure compliance. The city plans to continue to participating through continuing floodplain education, and staying in compliance with NFIP.

*Insurance Summary-* There are 3 policies and \$590,000.00 insurance in force.

*Staff Resources-* City of Alexander has a Floodplain Manager and oversees the floodplain management. The city is very small with limited resources and is new to the NFIP program.

If floodplain resources are needed that the city cannot provide, the City request assistance from the Saline County Office of Emergency Services, Saline County Floodplain Manager, Arkansas Natural Resource Conservation Service and FEMA.

*Compliance History-* Alexander is a new member, and in good standing with the NFIP, and there are no outstanding compliance issues. The Community Assistance Visit (CAV) or Community Assistance made their visit June 2014 when a class was held at the Saline County of Emergency Services.

Alexander intends to maintain compliance with the NFIP by continuing education, ensure all constructing, locating, substantially altering or changing the use of any structure or land after the effective date of the city's floodplain ordinance.

Electric Utilities- Entergy

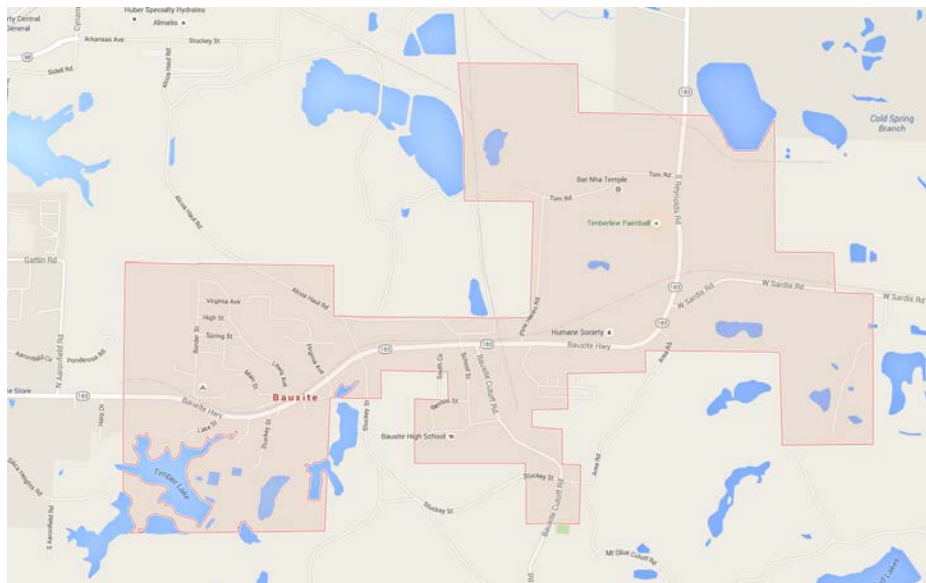
Telephone Utilities- AT&T

Gas Utilities- Centerpoint Energy

Water Systems Utilities- Alexander Waterworks

Wastewater Treatment: Alexander Sewer Department

## City of Bauxite



**The City of Bauxite is not a member of the National Flood Insurance Program.** At this time, Bauxite has not made a decision whether or not to participate in the NFIP.

Electric Utilities- Entergy



Telephone Utilities- AT&T  
Gas Utilities- Centerpoint Energy  
Water Systems Utilities- Benton Utilities  
Wastewater Treatment: City of Bauxite

### City of Benton



**The City of Benton** is a member of the National Flood Insurance Program, Community Identification Number 050192. No date has been given for the Initial Flood Hazard Boundary Map, the Initial Flood Insurance Rate Map identified 11/16/1973, current effective map date 06/19/2012.

The City of Benton participates in the NFIP by assisting the residences by assisting with the filling out documents for the NFIP and educating citizens about the NFIP program. Permits are issued for those wishing to build in the floodplain, then the floodplain manager monitors the construction process to insure compliance. The city plans to continue to participating through continuing floodplain education, and staying in compliance with NFIP.

*Insurance Summary-* There are 91 policies with \$19,849,200 insurance in force.

*Staff Resources-* The Floodplain Manager and oversees the floodplain management. The NFIP administrative services include floodplain maps, permit reviews and inspections.

If floodplain resources are needed that the county cannot provide, the city can request assistance from the Arkansas Natural Resource Conservation Service and FEMA.

*Compliance History-* Benton is in good standing with the NFIP, and there are no outstanding compliance issues. The Community Assistance Visit (CAV) or Community Assistance visits once every three years.

Benton intends to maintain compliance with the NFIP.

Electric Utilities- Benton Utilities

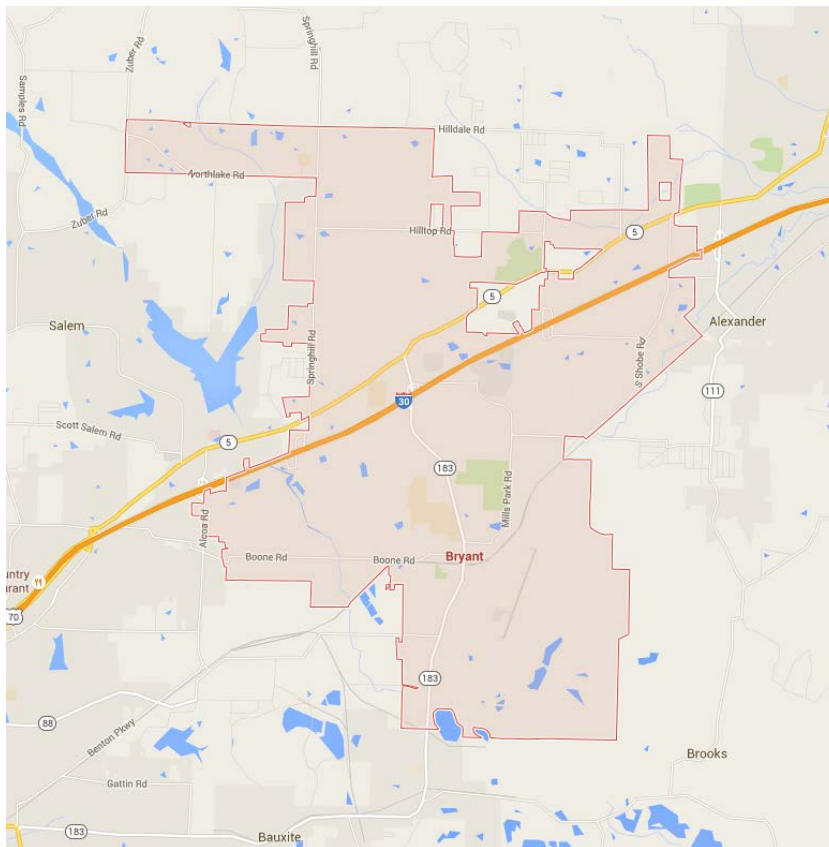
Telephone Utilities- AT&T

Gas Utilities- Centerpoint Energy

Water Systems Utilities- Benton Utilities

Wastewater Treatment: City of Benton

## City of Bryant



**The City of Bryant is a member of the National Flood Insurance Program, Community Identification Number 050308. The date for the initial Flood Hazard Boundary Map is 06/27/75, the Initial Flood Insurance Rate Map identified 06/28/1977, current effective map date 06/19/2012.**

Bryant participates in the NFIP by assisting the residences by assisting with the filling out documents for the NFIP and educating citizens about the NFIP program. Permits are issued for those wishing to build in the floodplain, then the floodplain manager monitors the construction process to insure compliance. The city plans to continue to participating through continuing floodplain education, and staying in compliance with NFIP.

*Insurance Summary-* There are 62 policies in place with \$15,605,800 in force.

*Staff Resources-* The Floodplain Manager oversees the floodplain management. The NFIP administrative services include floodplain maps, permit reviews and inspections.

If floodplain resources are needed that the city cannot provide, the mayor will request assistance from the Arkansas Natural Resource Conservation Service and FEMA.

*Compliance History-* Bryant is in good standing with the NFIP, and there are no outstanding compliance issues. The Community Assistance Visit (CAV) or Community Assistance visits once every three years.

Bryant intends to maintain compliance with the NFIP.

Electric Utilities- Entergy, First Electric Cooperative

Telephone Utilities- AT&T, Fidelity

Gas Utilities- Centerpoint Energy

Water Systems Utilities- Central Arkansas Water

Wastewater Treatment: Bryant

## **City of Haskell**



**The City of Haskell is a** member of the National Flood Insurance Program, Community Identification Number 050416. The date for the initial Flood Hazard Boundary Map is 06/27/75, the Initial Flood Insurance Rate Map identified 08/19/1987, current effective map date 06/19/2012.

Haskell participates in the NFIP by assisting the residences by assisting with the filling out documents for the NFIP and educating citizens about the NFIP program. Permits are issued for those wishing to build in the floodplain, then the floodplain manager monitors the construction process to insure compliance. The city plans to continue to participating through continuing floodplain education, and staying in compliance with NFIP.

*Insurance Summary-* There are 24 policies in place with \$4,591,500 insurance in force.

*Staff Resources-* The Floodplain Manager oversees the floodplain management. The NFIP administrative services include floodplain maps, permit reviews and inspections.

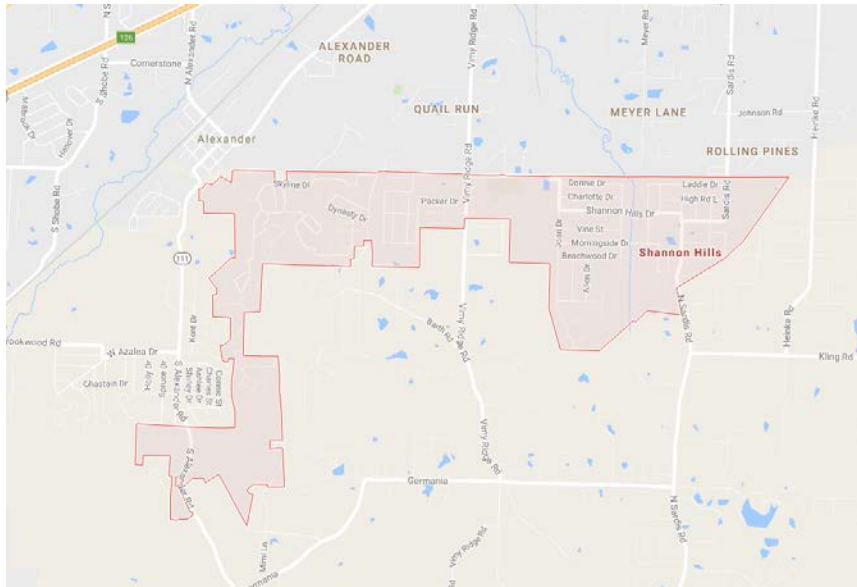
If floodplain resources are needed that the city cannot provide, the mayor will request assistance from the Arkansas Natural Resource Conservation Service and FEMA.

*Compliance History-* Haskell is in good standing with the NFIP, and there are no outstanding compliance issues. The Community Assistance Visit (CAV) or Community Assistance visits once every three years.

Haskell intends to maintain compliance with the NFIP.

Electric Utilities- Entergy, First Electric Cooperative  
Telephone Utilities- AT&T, Fidelity  
Gas Utilities- Centerpoint Energy  
Water Systems Utilities- Central Arkansas Water  
Wastewater Treatment: Haskell

## City of Shannon Hills



**The City of Shannon Hills is a member of the National Flood Insurance Program, Community Identification Number 050573. The date for the Initial Flood Insurance Rate Map identified 05/17/1982, current effective map date 06/19/2012.**

Shannon Hills participates in the NFIP by assisting the residences by assisting with the filling out documents for the NFIP and educating citizens about the NFIP program. Permits are issued for those wishing to build in the floodplain, then the floodplain manager monitors the construction process to insure compliance. The city plans to continue to participating through continuing floodplain education, and staying in compliance with NFIP.

*Insurance Summary-* There are 35 policies in place with \$3,859,500 insurance in force.

*Staff Resources-* The Floodplain Manager oversees the floodplain management. The NFIP administrative services include floodplain maps, permit reviews and inspections.

If floodplain resources are needed that the city cannot provide, the mayor will request assistance from the Arkansas Natural Resource Conservation Service and FEMA.

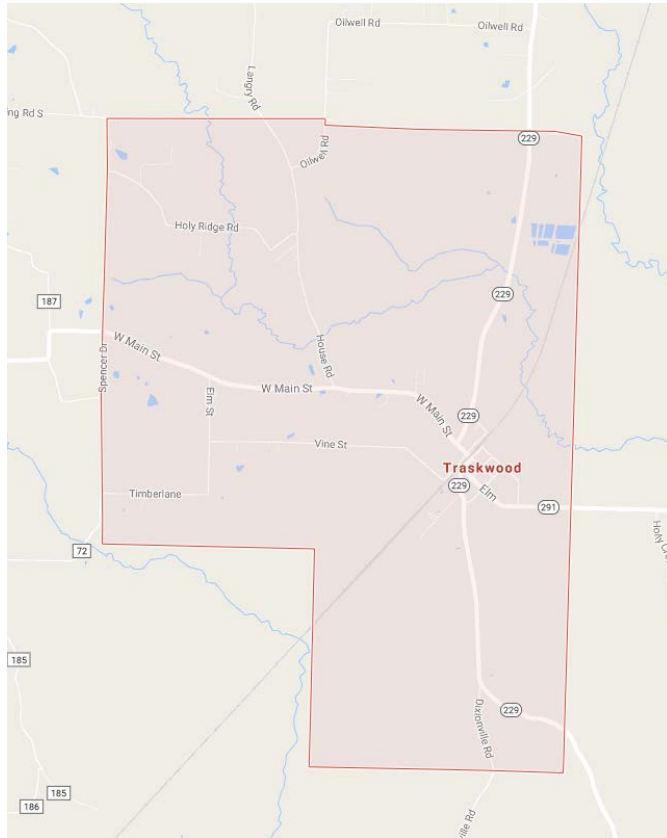
*Compliance History-* Shannon Hills is in good standing with the NFIP, and there are no outstanding compliance issues. The Community Assistance Visit (CAV) or Community Assistance visits once every three years.

Shannon Hills intends to maintain compliance with the NFIP.

Electric Utilities- Entergy, First Electric Cooperative  
Telephone Utilities- AT&T, Fidelity

Gas Utilities- Centerpoint Energy  
Water Systems Utilities- Central Arkansas Water  
Wastewater Treatment: Shannon Hills

## City of Traskwood



**The City of Traskwood is not a current** member of the National Flood Insurance Program. They do have a CID number of 050294, but have been suspended from the program since 06/20/2012. When the new maps were updated, there was no elevation determined for the A, C< and X zones. The city did have a CAC on 08/10/2012, and a GTA on 08/24/2014.

Electric Utilities- Entergy  
Telephone Utilities- AT&T  
Gas Utilities- Centerpoint Energy  
Water Systems Utilities- Benton Utilities  
Wastewater Treatment: City of Benton

## School Districts:

There are four school districts in Saline County with campuses; Bauxite, Benton, Benton Harmony Grove, Bryant, and Sheridan.



National Flood Insurance Program (NFIP) School Districts are not required to be a member of the NFIP, but they are located in Saline County and cities that are members.

### **2.2.2 Fire Districts**

None of the fire districts in Saline County belong to the Community Firewise at this time, but plans are being made to become Firewise Communities in the future.

### **2.3.2 Transportation**



As shown above: The major highways in Saline County are Arkansas Highway 9, 5, 35, 70, and 167. Hwy 167 is a main thoroughfare for traffic from Little Rock to the southcentral part of the State.

Interstate 30 passes through the southeastern of the county. It runs down the middles of the cities of Alexander, Bryant, and Benton. In a northeast/southwesterly direction. This is a main thoroughfare for travel across the United States, and sees cargo, recreational, commuter, and hazardous waste travel each day.

The Saline County Regional Airport is located in the City of Bryant. It serves as a growing airport terminal for planes traveling across Arkansas.

# SECTION 3

## Hazard Identification and Risk Assessment

### 3.1 Hazard Identification and Prioritization

Hazard identification, the process of identifying hazard that threatens a given area, is the first step in the risk assessment process. Saline County has identified several natural hazards that, because they pose a threat to the County and its residents, have warranted a complete profile in this hazard mitigation plan.

Please note that the update period of this plan is January 1, 2009, through June 30, 2015.

The following hazards were identified from historical information provided by planning team members, newspapers, review of plans and reports, internet research, the State Mitigation Plan, and FEMA publication “Multi-Hazard-Identification and Risk Assessment”, and information provided by FEMA and ADEM.

Hazards	Hazard Events during the update period
Dam/Levee Failure	No dam/levee failures for Saline County.
Drought	16 events reported
Earthquake	0 epicenters, but 5 quakes were felt from neighboring counties
Extreme Heat	1 event reported
Flood	14 flood events, 15 flash flood events, 1 death
Severe Thunderstorm	11 events
High Winds	0 events
Tornado	6 events
Wildfire	5 events
Winter/Ice Storms	11 winter storm events 1997-2012; 6 ice storms 1998-2013

Landslide – There is information from the USGS on Landslides in Arkansas. I spoke to David Johnston at the Arkansas Geological Survey and he said that they have no record of information for Saline County. There was information on the Arkansas Geological Survey website for other areas in Arkansas but not for Saline County. This was addressed in the planning meeting and Saline County is not a high risk area for landslides.

Land Subsidence - David Johnston at the Arkansas Geological Survey said that they have no records or information for Saline County. Further research shows that data and past occurrences are not available therefore Land Subsidence will be omitted from this Plan.

### Presidential Disaster Declarations in Saline County from 2000 to current date

Disaster Declaration	Date	Incident Description
1758	05/02/2008	Severe Storms, Tornadoes, and Flooding
1793	09/18/2008	Severe Storms and Flooding associated with Hurricane Gustav
1845	06/16/2009	Severe Storms, Tornadoes, and Flooding
1872	02/04/2010	Severe Storms, Tornadoes, and Flooding
1975	05/02/2011	Severe Storms, Tornadoes, and Flooding
4100	01/29/2013	Severe Winter Storm

### **3.2 Vulnerability and Risk Assessment by Hazard**

The Saline County Hazard Mitigation Plan includes a description or profile, location, and extent of all natural hazards that can affect each jurisdiction.

**Description** describes the natural hazard that can affect the jurisdictions in the planning area.

**Location** (Geographic Area Affected) is where geographic areas in the planning area that are affected by the hazard, and when possible maps were used to illustrate the location. But for some hazards, such as tornados, the plan stated that the entire planning area is equally at risk to that hazard.

**Previous Occurrences** lists past hazard events for each jurisdiction.

**Probability of Future Events** means the likelihood of the hazard occurring in the future and may be defined in terms of general descriptors, historical frequencies, and statistical probabilities. Statistical probabilities often refer to events of a specific size or strength. Hazard likelihood can also be compared using general descriptions or rankings. For the purpose of this plan we will use the general descriptors to describe the likelihood of hazard events based on historical frequency.

**Unlikely:** Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than every 100 years.

**Possible:** 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.

**Likely:** 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.

**Highly Likely:** 90 to 100 percent probability of occurrence in the next year or a recurrence interval of 1 year.

A description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction is included.

**Impact and Overall Jurisdictional Vulnerability**— is the consequence or effect of the hazard on the community and its assets. Impacts will be described by referencing historical disaster impacts and/or an estimate of potential future losses, such as percent damage of total exposure. It will identify structures, systems, populations or other community assets as defined by the community that are susceptible to damage and loss from hazard events. It is a list of key issues or problem statements that clearly describes the community's greatest vulnerabilities and that will be address in the mitigation strategy.

**Repetitive Loss Properties and Severe Repetitive Loss Properties**- addresses NFIP insured structures describing the types (residential, commercial, institutional, etc.) and estimates the number of repetitive loss properties located in the identified flood hazard areas.

### **3.3 Methodology used in Estimating Potential Loss**

The methodology used in this plan for the potential loss estimate was developed by using past hazard events data from citizens, local governments, and national data. The National Climatic Data Center (NCDC) Storm Events Database also helped identifying previous occurrences and loss estimations. If information was not able to be obtained of a certain type past hazard event, an estimate of potential loss was not completed due to the lack of information.

### **3.4 Natural Hazards Affecting Saline County**

This mitigation plan addresses the natural hazards that can affect Saline County, cities of Alexander, Bauxite, Benton, Bryant, Haskell, & Traskwood and the School Districts of Benton, Bauxite, Bryant, and Harmony Grove. The hazards

which have affected Saline County in the past or could possibly affect in the near future are dam failure, drought, extreme heat, earthquake, flooding, landslides, thunderstorms, tornadoes, wildfire, and winter storms.

### **3.4.1. Dam Failure**

For the dam failure risk assessment, each dam will be described separately with their corresponding location, impact and overall summary of vulnerability due to the uniqueness of each dam and location. Note that all inundation areas depicted in the following maps created in ArcMap have been estimated by following natural floodways using information of maximum discharge release, maximum capacity, and the drainage area acreage retrieved from the National Inventory of Dams. There are no previous occurrence of dam failure in all participating jurisdictions of Saline County.

Low Risk Dams that are private, county or state owned dams not presenting a danger to individuals, structures, residential housing, county roads or state highways will not be addressed in this plan.

#### **Description of Dam Failure:**

According to the Association of State Dam Safety Officials, the term dam is defined in the rules as “any barrier, including one for flood detention, designed to impound liquid volumes.” A dam failure is the collapse, breach, or other failure resulting in downstream flooding. A dam impounds water in the upstream area, referred to as the reservoir. The amount of water impounded is measured in acre-ft. An acre-foot is the volume of water that covers an acre of land to a depth of one foot. As a function of upstream topography, even a very small dam may impound or detain many acre-ft. of water. Two factors influence the potential severity of a full or partial dam failure: the amount of water impounded, and the density, type, and value of development and infrastructure located downstream.

According to the Arkansas Natural Resource Commission (ANRC) Title 7, Sections 705.3 – 705.4, the criteria for size classifications are based on height of dam and impoundment capacity, and hazard classifications, which are used in this plan to describe the level of risk and severity associated with dam failure.

Section 705.5 provides detail on the hydrologic criteria for dams based on hazard classification. The classifications are shown in the table below:

<b>Category</b>	<b>Maximum Storage (ac-ft)</b>	<b>Height (Feet)</b>
Small	50 to 100	25-40
Intermediate	1000 and <50,000	40 and <100
Large	50,000	100

The following calculations do not reflect the physical conditions of the dams, but rather describe areas downstream of the dams that could be impacted in the event of failure. According to ANRC Title 7, the rate of risk for dam failure is calculated as follows:

Low Hazard Dams	No loss of life and minimal economic loss are expected. (No significant structures, pastures, woodland, or largely undeveloped land); less than \$ 100,000.
Significant Hazard Dams	Loss of life is possible, but not expected. Economic loss would be appreciable. (Significant structures, industrial, or commercial development, or cropland); \$100,000 to \$500,000.
High Hazard Dams	Loss of life is expected, and economic damage would be excessive. (Extensive public, industrial, commercial, or agricultural development); over \$500,000.

According to the Arkansas State Hazard Mitigation Plan, there are a total of 56 dams throughout the entire county of Saline. There are 21 dams rated as a low hazard in the State plan, therefore they will not be profiled in the Saline County Hazard Mitigation Plan update. There are nine that are ranked significant and three ranked high in the State plan, and those will be profiled. If a dam is rated as a high risk, it is required to have an Emergency Action Plan (EAP) completed. This EAP will also require inundation studies that will detail the extent of a dam failure for a particular dam. However, due to the sensitivity of the information, EAP's are not released to the public. The following table outlines the 12 dams in the county that are High and Significant risk or failure would impact roads, structures, and/or human lives. The table illustrates whether there is an EAP for a specified dam; however, there is a data deficiency for the extent of dam failure as well as a map of the exact locations of inundation area. However, the completed EAPs do provide that the inundation zone identified for the Hurricane Lake Dam is up to 5.75 miles downstream, and out to the 500 year floodplain. The inundation zone for Pebble Lake Dam is approximately 1.4 miles downstream and out to the 100 year floodplain. There are no EAPs for the other two High Risk dams, so there is a data deficiency regarding these inundations locations, extent, and potential impact/vulnerability.

Dam Name	Other Dam Name	NID ID		Hazard		EAP
JOHN STUCKEY LAKE DAM		AR00023	Lake Chance	Significant		No EAP
BUFFINGTON LAKE DAM		AR00030	Not permitted	x		No EAP
HURRICANE LAKE DAM		AR00013	Hurricane Lake	High		EAP
PEBBLE LAKE DAM		AR00014	Pebble Lake	High		EAP
LEDBETTER LAKE DAM		AR00017	Not permitted	x		No EAP
CHEMICAL PRODUCTS FRESH WATER LAKE	ALCOA LAKE DAM	AR00022	Chemical Product Freshwater Lake	Significant		No EAP
BROWNS LAKE DAM	BROWNS LAKE DAM	AR01143	Not permitted	x		No EAP
PARKER LAKE DAM	PARKER LAKE DAM	AR01174	Not permitted	x		No EAP
LAKE BLOOMFIELD DAM	LAKE YVONNE DAM	AR01177	Bloomfield	High		No EAP
LAKE CORONADO DAM		AR01217	Coronado	Significant		No EAP
LAKE PAULINE DAM		AR01528	Pauline	High		No EAP
LAKE ISABELLA DAM		AR01535	Isabella	Significant		No EAP

### **Probability of Dam Failure:**

With no previous occurrences, and because no factors suggest any dam may fail in the future, it is *Unlikely* that a dam failure will happen in the next year.

### **Impact and Vulnerability:**

A failure of the Hurricane Lake dam could potentially impact 23 residential structures, 9 commercial structures, 2 mobile home parks (estimated 70 mobile homes), and 1 water treatment facility. The loss of life and property would vary on the severity of the dam breach. A failure of Salem dam would flow into the same

## **3.4.2 Drought**

### **Description of Drought**

A drought is a period of unusually persistent dry weather that persists long enough to cause serious deficiencies in water supply (surface or underground). Droughts are slow onset hazard, but over time they can severely affect crops, municipal water supplies, recreation resources and wildlife. If drought conditions extend over a number of years, the direct and indirect economic impacts can be significant. High temperatures, high winds, and low humidity can worsen drought conditions and also make areas more susceptible to wildfire. In addition, human actions and demands for water resources can accelerate drought-related impacts.

### **Location of Drought Events:**

All areas of Saline County, Cities of Alexander, Bauxite, Benton and Bryant, plus School Districts of Bauxite, Benton and Bryant, Harmony Grove, and Sheridan are equally likely to experience severe drought, there is no defined geographic hazard boundary.



## **Changes in Land Use**

Livestock and product sales continue to be a significant source of farm income for Saline County farmers. A drought's risk on the livelihood of farmers and the overall economy increases as the dependency and increasing trends to grow annually.

## **Extent, Magnitude or Severity of Drought:**

All participating jurisdictions could experience a drought that is rated between a D0 and D2 in any given year.

### **Drought Severity Classification**

Source: U.S. National Drought Mitigation Center

Drought Severity Classification								
		RANGES						
Category	Description	Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Percent of Normal Precip	Standardized Precipitation Index (SPI)	Satellite Vegetation Health Index
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.	-1.0 to -1.9	21-30	21-30	<75% for 3 months	-0.5 to -0.7	36-45
D1	Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested	-2.0 to -2.9	11-20	11-20	<70% for 3 months	-0.8 to -1.2	26-35
D2	Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed	-3.0 to -3.9	6-10	6-10	<65% for 6 months	-1.3 to -1.5	16-25
D3	Extreme Drought	Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions	-4.0 to -4.9	3-5	3-5	<60% for 6 months	-1.6 to -1.9	6-15
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies	-5.0 or less	0-2	0-2	<65% for 12 months	-2.0 or less	1-5

## **Probability of Future Events:**

The probability that the county will experience a countywide drought event every year is likely.

## **Impact and Vulnerability:**

The primary and most devastating effect for all jurisdictions would be the lack of water. As a dry period progresses and water supplies dwindle, existing water supplies are overtaxed and dry up. If the drought is long term, it may result in permanent changes in settlement, social, and living patterns in these jurisdictions. During a past drought event, the water utility companies serving these jurisdictions instituted mandatory water restrictions. Cascading effects also include major ecological changes such as increased flash flooding and desertification. All populations in these jurisdictions are vulnerable during a drought event; however, children and elderly are the biggest concerns for the communities. They may suffer from dehydration before other populations.

The unincorporated areas of Saline County are mostly rural with a large amount of timber plantations, farmland, and pasture for farm animals. As water supplies dwindle in these jurisdictions, the crops and fodder will deplete. Farmers/ranchers, private individuals, and timber companies own a large share of the timberland in Saline County. Farming families will begin to migrate in search of better grazing lands for their herds or move to the cities to seek jobs and alternative sources of income. If the dwindling supplies of food are not replaced, famine can occur, further accelerating the migration out of these jurisdictions. The migration may contribute to spreading the scope of the disaster, especially if grazing animals are moved with the people. Severe droughts will cause crop damage and elevate the potential to wildfires. While all populations are considered vulnerable during a drought event, the communities are more concerned about the farmers and their crops and animals.

The school districts of Bauxite, Benton, Bryant, Harmony Grove, and Sheridan will also be greatly affected by the dwindling water supply. School schedules could be hindered, or canceled altogether. The students, faculty, staff are the vulnerable populations during a drought event. These populations are at risk of dehydration and famine during drought events.

### **3.4.3 Earthquake**

#### **Description of Earthquake:**

An earthquake is what happens when two blocks of the earth suddenly slip past one another. The surface where they slip is called the fault or fault plane. The location below the earth's surface where the earthquake starts is called the hypocenter, and the location directly above it on the surface of the earth is called the epicenter.

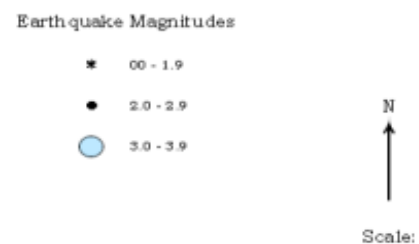
Sometimes an earthquake has foreshocks. These are smaller earthquakes that happen in the same place as the larger earthquake that follows. Scientists can't tell that an earthquake is a foreshock until the larger earthquake happens. The largest, main earthquake is called the mainshock. Mainshocks always have aftershocks that follow. These are smaller earthquakes that occur afterwards in the same place as the mainshock. Depending on the size of the mainshock, aftershocks can continue for weeks, months, and even years after the mainshock.

#### **Locations affected by Earthquake**

Saline County has no recorded earthquake epicenters according to the Arkansas Geological Survey.

#### **Extent, Magnitude or Severity of Extreme Earthquake Events:**

No earthquake activity has been reported for Saline County. However, it is possible that epicenters in neighboring counties can effect life and property in Saline County. Events ranging from a 1.7 – 4.2 magnitude have been felt in Saline County. The Planning team cannot rule out that an earthquake could occur in Saline county. With the epicenters in every neighboring county, Saline may experience an earthquake with a magnitude ranging from from 0.0 – 4.2.



#### **Richter Scale**

Magnitude	Description	Earthquake effects	Frequency of occurrence
Less than 2.0	Micro	Micro earthquakes, not felt. <sup>[13]</sup>	Continual
2.0–2.9	Minor	Generally not felt, but recorded.	1,300,000 per year (est.)
3.0–3.9		Often felt, but rarely causes damage.	130,000 per year (est.)
4.0–4.9	Light	Noticeable shaking of indoor items, rattling noises. Significant damage unlikely.	13,000 per year (est.)
5.0–5.9	Moderate	Can cause major damage to poorly constructed buildings over small regions. At most slight damage to well-designed buildings.	1,319 per year
6.0–6.9	Strong	Can be destructive in areas up to about 160 kilometres (99 mi) across in populated areas.	134 per year
7.0–7.9	Major	Can cause serious damage over larger areas.	15 per year
8.0–8.9	Great	Can cause serious damage in areas several hundred kilometres across.	1 per year
9.0–9.9		Devastating in areas several thousand kilometres across.	1 per 10 years (est.)
10.0+	Massive	Never recorded, widespread devastation across very large areas; see below for equivalent seismic energy yield.	Extremely rare (Unknown/May not be possible)



### **Probability of Future**

### **Events**

It is unlikely that any jurisdiction will experience an earthquake event in the next year.

### **Impact and Vulnerability of Earthquake**

The Arkansas State Mitigation Plan describes the regions with high probability of future earthquakes in the State of Arkansas are along the New Madrid Fault. The portion of Arkansas that is likely to experience damage is located in the northeast portion of the state. Saline County is not located in this area. However, jurisdictions in Saline County have felt earthquakes with epicenters outside of the county. The Arkansas Geological Survey confirms that damage is not a concern unless a quake has a magnitude of at least a 4.0.

The cities would be most affected by an earthquake (stronger than a 4.0) due to the building density in the urban areas. There are vulnerable commercial structures located downtown Benton and Bryant that are constructed with unreinforced masonry. During a 4.2 magnitude earthquake, the walls of the buildings would shake, and windows might break. All furniture, equipment, and material inside the buildings would be shake, but damage would be negligible. The Saline Memorial Hospital in Benton would not be effected structurally, but possibly disrupt their

business functions. . Equipment in the facilities that are not strapped down would be displaced or turned over. Patients in these facilities are vulnerable to additional injuries. The Fire Departments within the jurisdictions are suspected to have negligible damage. Most equipment in the fire departments is contained or strapped down and is not suspected to be displaced. Children present at the school districts would be vulnerable to falling structures and moving furniture/equipment inside the buildings. Due to the number of children to adults, children are also at higher risk to being lost or missing. Fear might be prevalent in children and cause widespread panic.

### 3.4.4 Extreme Heat

#### Description of Extreme Heat:

Temperatures that hover 10 degrees or more above the average high temperature for the region and lasts for several weeks are defined as extreme heat. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a "dome" of high atmospheric pressure traps hazy, damp air near the ground.

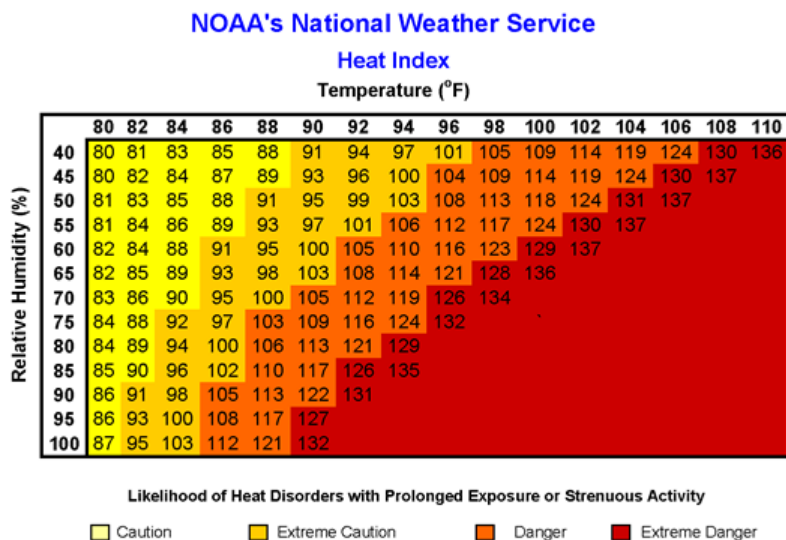
#### Locations Affected by Extreme Heat:

There is no defined geographic hazard boundary for extreme heat. Extreme heat generally affects people rather than property. All planning areas are equally likely to experience an extreme heat event.

#### Extent, Magnitude or Severity of Extreme Heat Events

All participating jurisdictions are affected seasonally by summer heat, with summer temperatures averaging 80 degrees and maximum around 92 degrees. However, a 2010 heat wave made extremely hot summers with temperatures in Saline County ranging from 100 degrees or greater. Temperature readings of 115 were recorded on August 10, 1936, and July 31, 1986 and 115 is also the official record for August 4, 2011. The past occurrences help predict that the participating jurisdictions mentioned above are likely to expect extreme heat up to 115 degrees Fahrenheit.

The magnitude or intensity of an extreme heat event is measured according to temperature in relation to the percentage of humidity. According to the National Oceanic Atmosphere Administration (NOAA) this relationship is referred to as the "Heat Index" which is shown below. The Heat Index measures how hot it feels outside when humidity is combined with high temperatures.



**IMPORTANT:** Since heat index values were devised for shady, light wind conditions, **exposure to full sunshine can increase heat index values by up to 15°F.** Also, **strong winds**, particularly with very hot, dry air, can be extremely hazardous.

#### Probability of Future Extreme Heat Events

It is highly likely that the participating jurisdictions will experience an extreme heat event in the next year or a recurrence interval of 1 year.

### **Impact and Vulnerability of Extreme Heat:**

In the unincorporated areas of Saline County, cities of Alexander, Bauxite, Bryant, Benton, Shannon Hills, Traskwood; School districts of Bryant, Bauxite, Benton, Harmony Grove, and Sheridan have total vulnerable populations of children under 5 years and elderly over 62 years. Prolonged exposure to temperatures above 100 degrees Fahrenheit can cause significant health-related ailments that include heat stroke and even death. Infrastructure is not affected by extreme heat events.

The unincorporated areas of Saline County and all of the cities have areas that provide shade to buildings and sidewalks. However, populations of children under 5 years and elderly over 62 years remain vulnerable to heat injuries. The school district campuses have limited shade other than covered walkways, and shade from buildings. The students, faculty, and staff are vulnerable to heat injuries during recess, and transition from building to building. Prolonged periods of time increase the populations risk to heat injury.

Continuing with the unincorporated areas of Saline County, the County is concerned about the agriculture crops, livestock, water supply, and timber populations during extreme heat events. As temperatures rise, people and animals need more water to maintain their health. Many important economic activities like raising livestock require plenty of water. This trend remains a vulnerability of the farmers and the economy that relies on the product sales during extreme heat events.

During extreme heat, warmer temperatures make crops grow more quickly, also while warmer temperatures can reduce yields. For some crops, such as grains, faster growth reduces the amount of time that seeds have to grow and mature. Also, more extreme temperatures prevent crops from growing.

Heat waves directly threaten livestock. Heat stress can increase vulnerability to disease, reduce fertility, and reduce milk production. Pasture and feed supplies will deplete. Extreme heat will reduce the amount of quality forage available to grazing livestock. Animals that rely on grain will have a lack of feed. All the while, the prevalence of parasites and diseases will rise.

For timber plantations and forestry, the climate will influence the structure and function of forest ecosystems and plays an essential role in forest health. Increased temperature may worsen many of the threats to forests through the increase of pest outbreaks, fires, and drought.

### **3.4.5 Flooding**

#### **Description of Flooding:**

A flood is the partial or complete inundation of normally dry land. The various types of flooding include riverine flooding, and shallow flooding in Saline County. Common impacts of flooding include damage to personal property, buildings, and infrastructure; bridge and road closures; service disruptions; and injuries or even fatalities.

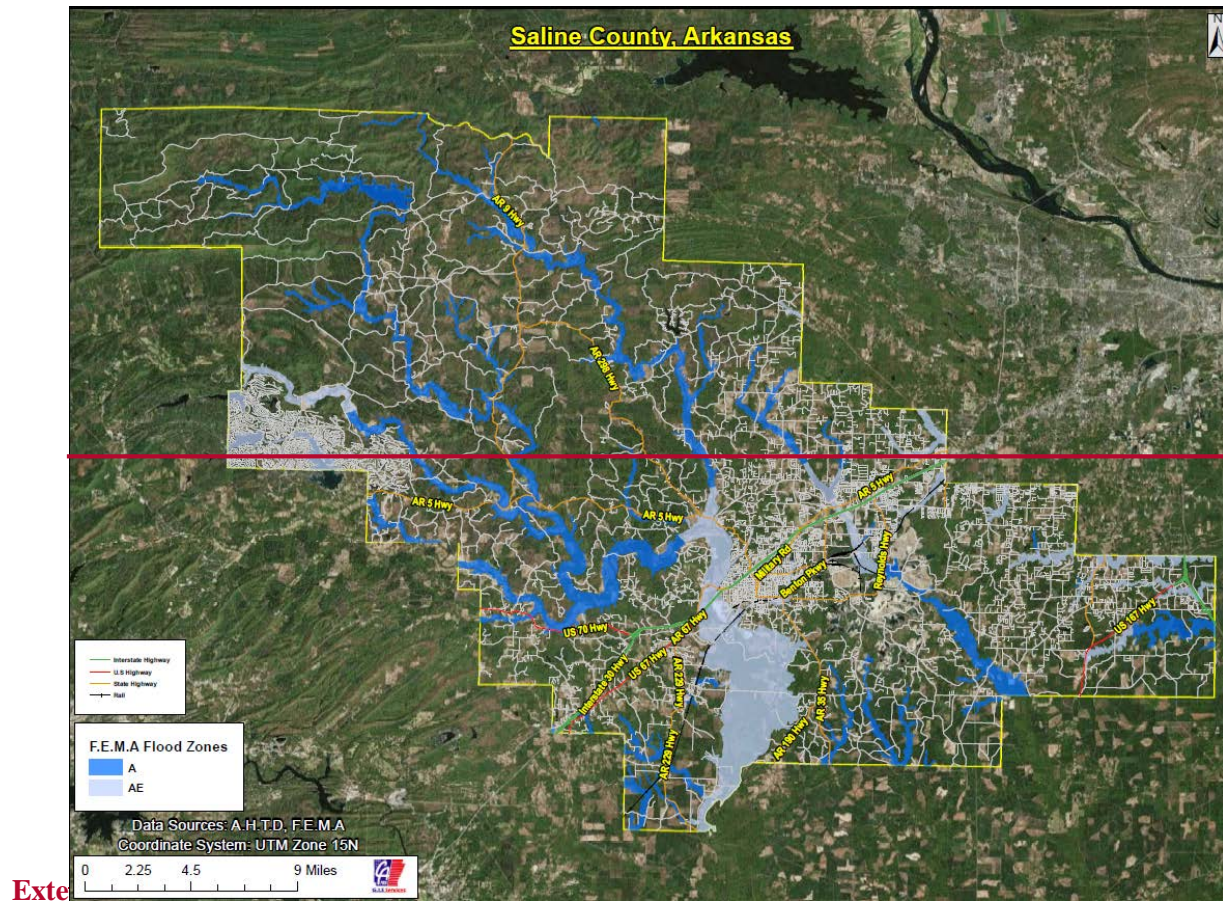
#### **Land Use and Development Trends:**

Along the Saline River in the unincorporated areas, there is minimal housing with mostly pasture or forested land bordering the river. In the town of Benton, The developments have been on the bluff side of the river, and have been exposed to the risk of flooding via the Saline River. However, population growth and land development in the cities of Benton, Bryant, Bauxite, and Alexander have put more life and properties near areas prone to flooding. Over the course of this plan update, the cities have worked to correct flooding issues in newly developed areas. This has lessened the impact of flash flooding and riverine flooding.

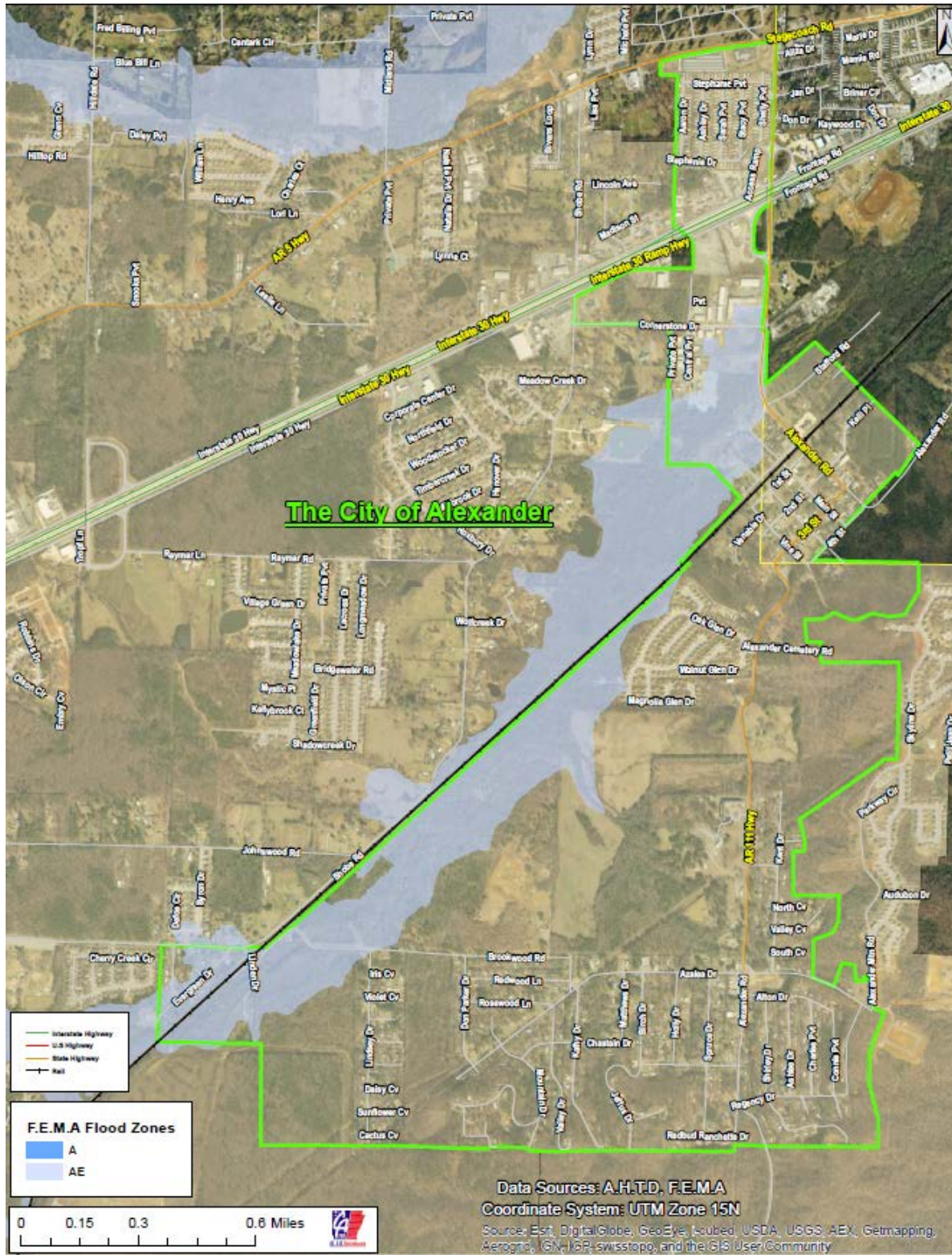
#### **Location of Flooding Events:**



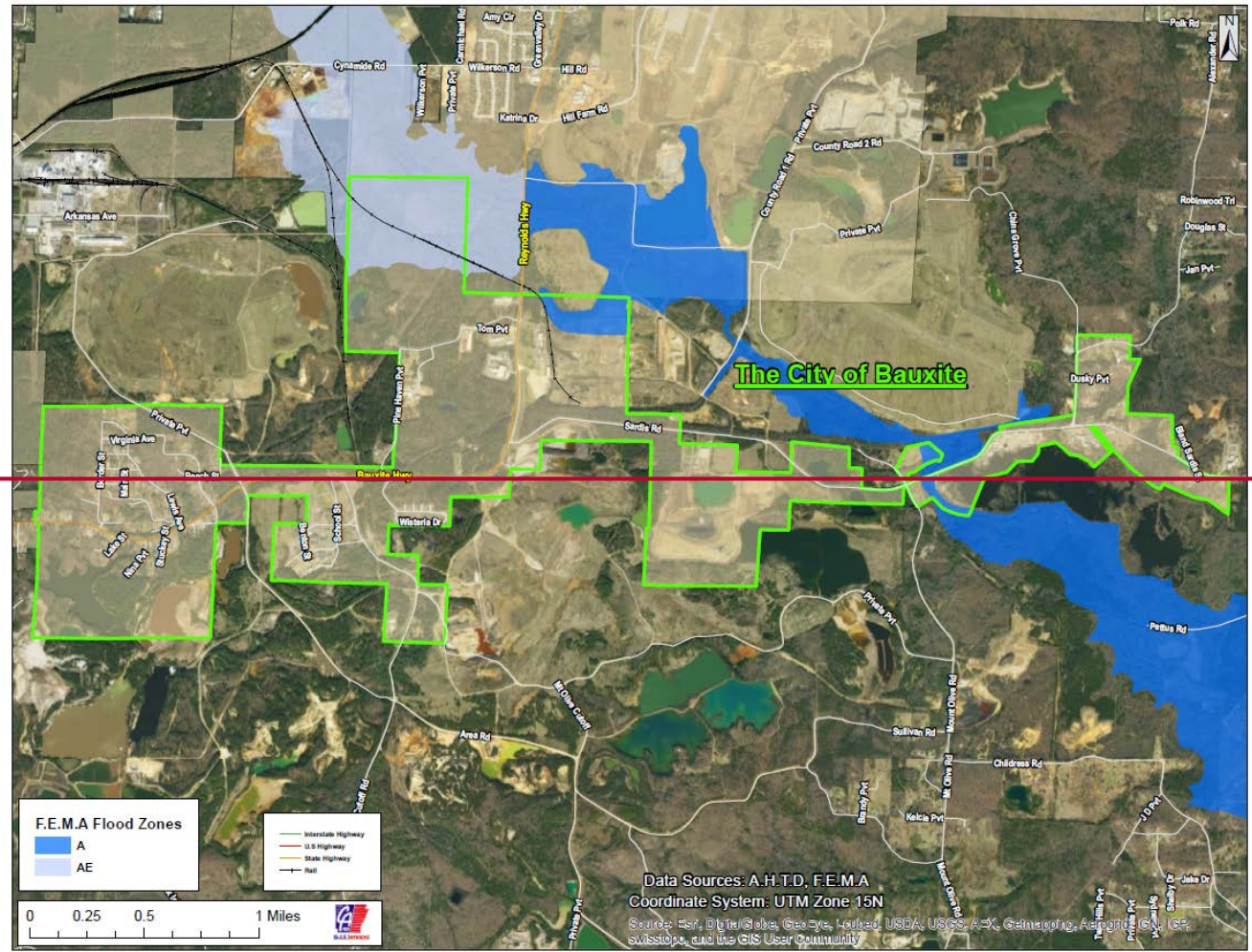
The Flood Insurance Rate Maps (FIRM) ~~inserted below depict~~ are located in the APPENDIX of this plan, and they identifys the locations of flood zones within each jurisdiction. School districts are also identified. The locations that are affected by flooding are the jurisdictions of the unincorporated areas of Saline County, the cities of Bauxite, Alexander, and Bryant. The city of Benton and the school districts of Bauxite, Bryant, Benton, and Harmony Grove are not located in flood zones.



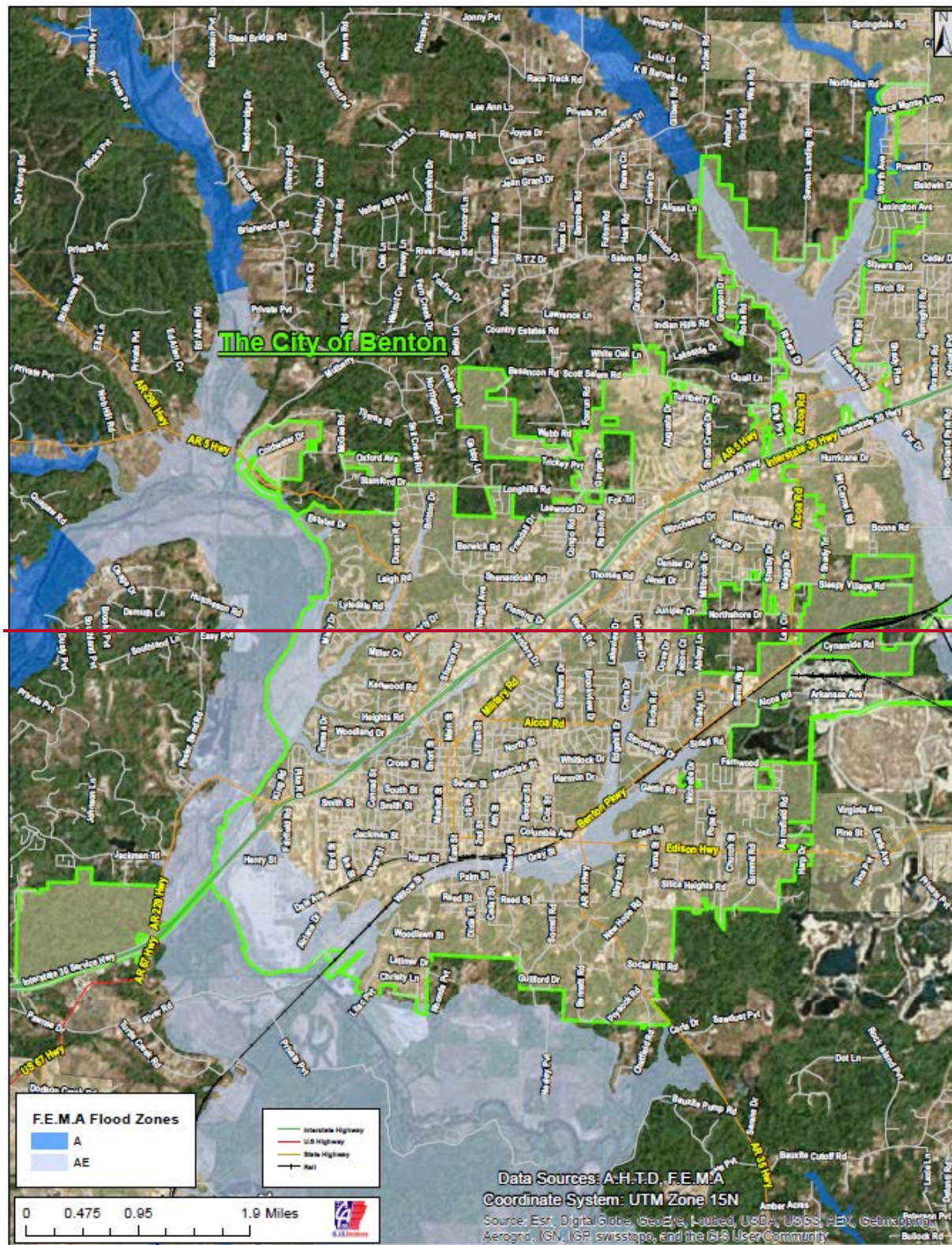








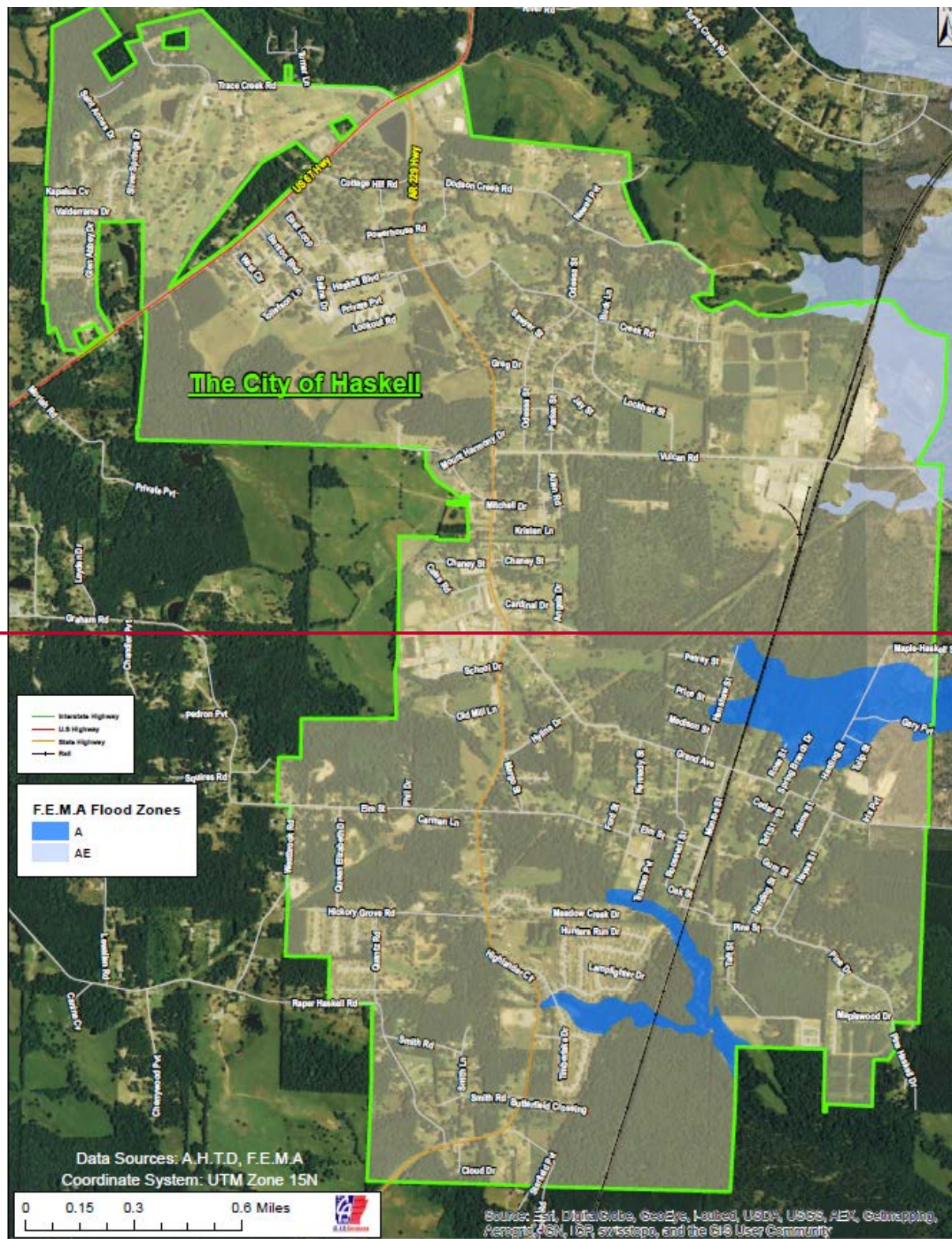




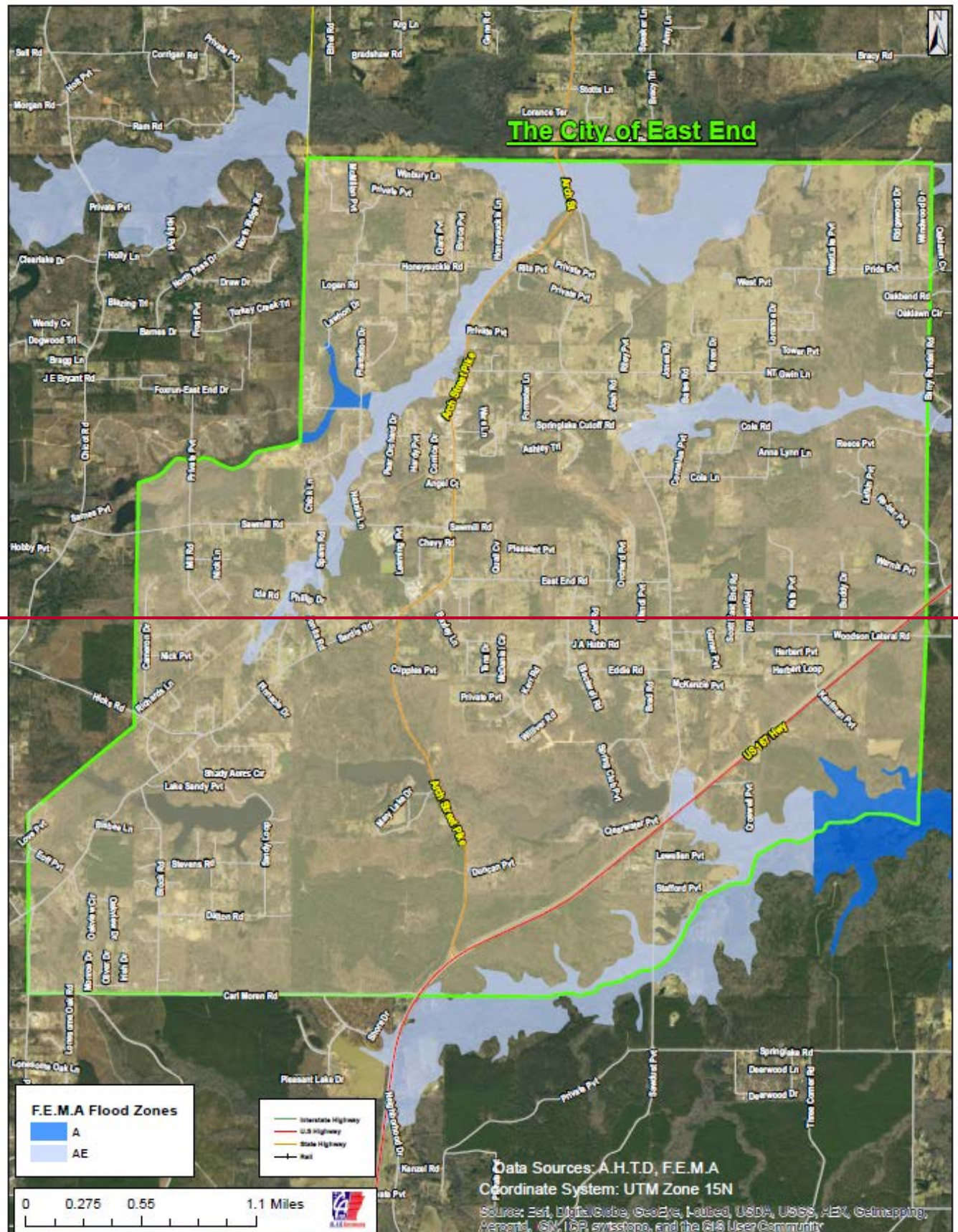




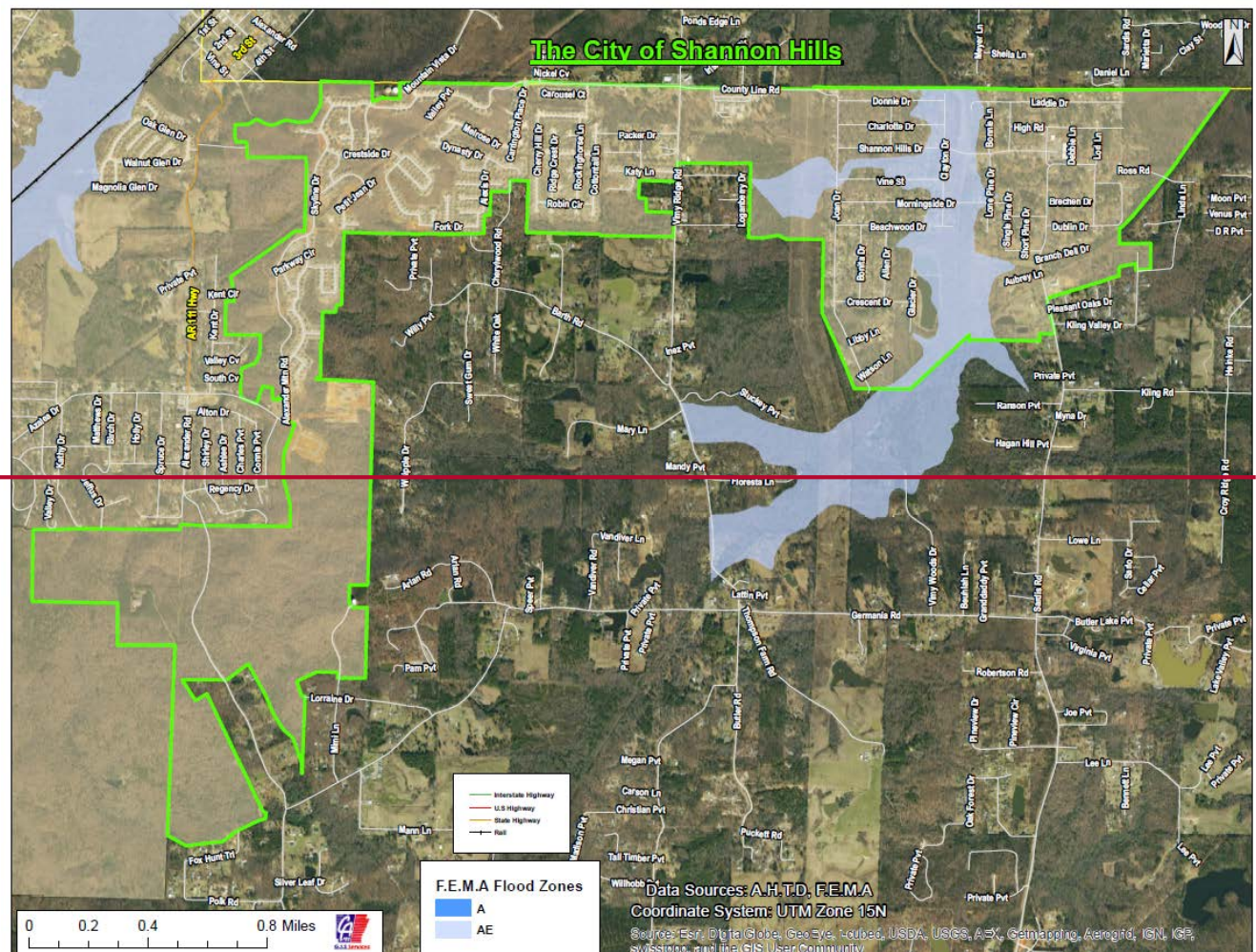












### **Extent, Magnitude or Severity of Flooding:**

The unincorporated jurisdictions and all cities can expect flash flooding events when receiving 3" or more of rainfall. In six hours, these jurisdictions can expect to receive 2.6 inches of rainfall. All affected jurisdictions are expected to receive the same amount of rainfall.

The unincorporated areas of Saline County experience flooding at a stage of 3-6 feet. The cities can experience flooding at a flood stage of 2 feet in particular places.

No school campuses are located in the floodplain or floodway.

### **Probability of Future Flooding:**

The probability of the jurisdictions identified within the flood hazard area are likely to experience an occurrence in the next year or a recurrence interval of 1 to 10 years.

### **Impact and Vulnerability of Flooding:**

Most of the county's flooding and drainage problems are found in communities in the less hilly, such as Alexander, Bauxite, Benton, and Bryant. Flash floods are most common in this area due to this area exhibiting high to moderate

relief, steep to moderate slopes, and bedrock with low permeability. All factors facilitate rapid runoff and the consequent potential for flash floods. Urban development in this part of the county exacerbates the flash flooding problem. Intense rainfall events, often accompanying the large thunderstorms that occur in Saline County several times a year, may result in water flowing rapidly from high elevations into valleys, collecting in, and sometimes overtopping the valley streams. There have also been issues with the maintenance and clearing of drainage channels in this area that have resulted in obstructions restricting the flow of water during a storm.

The major concerns of the unincorporated areas of Saline County

In all the above jurisdictions, flood waters will interrupt gas, electricity and water services and contaminate the water supply, making drinkable water unavailable. Homes, personal belongings and businesses can be damaged or lost entirely as a result of ravages of flooding. Residents and home owners who do not have flood insurance are vulnerable. They will suffer a great financial hardship from the expenses of clean up and rebuilding.

### **Addressing Repetitive Loss Properties:**

There are a total of 27 structures that have a Repetitive Loss or Severe Repetitive Loss designation. Twenty-three of those structures are only classified as Repetitive Loss, and four are classified as Severe Repetitive Loss. Out of all these structures listed below, only one (1) structure is commercial, and the rest (26) are residential. The one (1) commercial structure is a Repetitive Loss property. In the table below, each "row" represents one structure.

Community Name	Comm Nbr	Structure	Losses	Total Paid	As of Date	SRL Indicator
BENTON, CITY OF	050192	Residential	2	7,573.02	03/31/2017	
BENTON, CITY OF	050192	Residential	7	130,809.06	03/31/2017	X
BENTON, CITY OF	050192	Residential	4	120,586.77	03/31/2017	X
BRYANT, CITY OF	050308	Residential	2	62,312.49	03/31/2017	
BRYANT, CITY OF	050308	Residential	2	27,734.27	03/31/2017	
SALINE COUNTY *	050191	Residential	2	14,950.37	03/31/2017	
SALINE COUNTY *	050191	Residential	3	6,674.83	03/31/2017	
SALINE COUNTY *	050191	Residential	6	314,697.98	03/31/2017	X
SALINE COUNTY *	050191	Residential	2	72,672.32	03/31/2017	
SALINE COUNTY *	050191	Commercial	3	1,009,707.07	03/31/2017	
SALINE COUNTY *	050191	Residential	2	19,772.93	03/31/2017	
SALINE COUNTY *	050191	Residential	3	29,371.01	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	4	34,712.96	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	4	26,718.88	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	2	22,231.87	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	2	15,408.18	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	4	137,811.96	03/31/2017	X
SHANNON HILLS, CITY OF	050573	Residential	2	31,178.47	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	2	13,763.93	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	3	10,740.02	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	2	13,424.91	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	3	50,033.50	03/31/2017	

SHANNON HILLS, CITY OF	050573	Residential	2	6,226.80	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	4	17,693.55	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	2	5,639.49	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	2	42,287.47	03/31/2017	
SHANNON HILLS, CITY OF	050573	Residential	4	35,016.32	03/31/2017	

### **3.4.67 Thunderstorms**

#### **Description of Thunderstorm Events:**

A **thunderstorm**, also known as an **electrical storm**, a **lightning storm**, **thundershower** or simply a **storm**, is a form of turbulent weather characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder. The meteorologically assigned cloud type associated with the thunderstorm is the cumulonimbus. Thunderstorms are usually accompanied by **strong winds**, heavy rain and sometimes snow, sleet, hail, or no precipitation at all. Those that cause hail to fall are called **hailstorms**. Thunderstorms may line up in a series or rainbands, known as a squall line. Strong or severe thunderstorms may rotate, known as supercells. While most thunderstorms move with the mean wind flow through the layer of the troposphere that they occupy, vertical wind shear causes a deviation in their course at a right angle to the wind shear direction.

#### **Location of Thunderstorm Events:**

All planning areas experience Thunderstorms, lightning, strong winds and hail events and are equally at risk.

#### **Extent, Magnitude or Severity of Thunderstorm Events:**

All jurisdictions are equally subject to thunderstorms ranging from weak to extreme that includes up to 4 inches of rainfall.

***Modified Extreme Weather Madness Thunderstorm Criteria published by AccuWeather:***

THUNDERSTORM CRITERIA							
THUNDERSTORM TYPES	RAINFALL RATE/HR	MAX WIND GUST	HAIL SIZE	PEAK TORNADO	LIGHTNING FREQUENCY	DARKNESS FACTOR	STORM IMPACT
T-1 Weak Thunderstorms or Thundershowers	.03" .10"	25 MPH	None	None	Only a few strikes during the storm	Slightly Dark. Sunlight may be seen under the storm.	1. No Damage 2. Gusty Winds at times
T-2 Moderate Thunderstorms	.10" .25"	25-40 MPH	None	None	Occasional 1 -10	Moderately Dark. Heavy downpours may cause the need for car lights.	1. Heavy Downpours. 2. Occasional lightning. 3. Gusty winds. 4. Very little damage. 5. Small tree branches may break. 6. Lawn furniture moved around
T-3 Heavy Thunderstorms 1. Singular or lines of storms	.25" .55"	40-57 MPH	1/4"-3/4"	EF 0	Occasional to Frequent 10-20	Dark. Car lights used. Visibility low in heavy rains.	1. Minor Damage 2. Downpours that produce some flooding. 3. Frequent lightning 4. Hail occurs with the downpours 5. Small branches are broken. 6. Shingles are blown off roofs.
T-4 Intense Thunderstorms 1. Weaker Supercells 2. Bow echos or lines of storms	.55" 1.25"	57-70 MPH	1" - 1.5"	EF 0 to EF 2	Frequent 20-30	Very Dark. Car lights are used and street lights come on.	1. Moderate Damage 2. Heavy rains can cause flooding to streams, creeks, and roadways. 3. Wind damage to trees and buildings 4. Tornado damage 5. Power outages
T-5 Extreme Thunderstorms 1. Supercells with family of tornadoes 2. Derecho Windstorms	1.25" 4"	Over 70 MPH	Over 1.5" to 4"	EF 3 to EF5	Frequent to Continuous < 30	Pitch Black with the need for street lights and housing lights.	1. Severe damage to trees and property. Damage is widespread. 2. Flooding rains. 3. Damaging hail. 4. Damaging wind gusts to trees and buildings. 5. Tornadoes F3-F5 or family of tornadoes can occur and cause total devastation. 6. Widespread power outage

### **Previous Thunderstorm Events**

There have been 132 events reported from 1998 to 2015.

### **Probability of Future Thunderstorm Events:**

The probability of future thunderstorm events is highly likely. There is a 90 to 100 percent probability of occurrence in the next year or a recurrence interval of 1 year.

### **Impact and Vulnerability of Thunderstorm Events:**

The threat of thunderstorms, strong winds, lightning and hailstorms effect all the participating jurisdictions including the unincorporated areas of Saline County, cities of Alexander, Bauxite, Benton and Bryant and school districts of Benton, Bauxite, Harmony Grove, and Sheridan.

In all participating jurisdictions, structures and their contents are vulnerable to damage by thunderstorms winds. Strong winds can down trees onto power lines, damage mobile homes that are not anchored, and rip off roofing. Winds can cause death and injuries by lifting unanchored objects. Lightning strikes can cause structural, timberland, and grass fires. It can cause damage to the communication towers throughout the jurisdictions and disrupt service. Hailstorms will cause damage to all structures, mainly roof shingles which can lead to roof leaks and further damage to the structure interiors. All types of real estate and personal property are vulnerable to hail; such as cars, trailers, boats, and crops. Hailstorms can cause bodily injury if caught outside without protection.

Unincorporated areas of Saline County:

Populations housed in unreinforced masonry homes or without safe rooms are at risk to injury or death during thunderstorms, especially the elderly and children. Travelers and campers also without shelter or safe rooms nearby are extremely vulnerable to death and injury. Timberland is at risk to lightning, which can cause fires and destroy several acres.



The Bauxite School District:

The buildings on campus are vulnerable to the elements of a thunderstorm. They could be damaged or destroyed, including the contents instead such as computers, gym equipment, desks, chairs, and records. FEMA funds were received to construct a saferoom on campus that reduces or totally eliminates death and injury to all populations located on the campus. The local population is welcome to use the safe room after school hours.

All other school districts. Benton, Bryant, Harmony Grove, and Sheridan School Districts: The buildings on campus are vulnerable to the elements of a thunderstorm. They could be damaged or destroyed, including the contents instead such as computers, gym equipment, desks, chairs, and records.

The city of Benton:

In the city of Benton, commercial buildings located downtown are vulnerable to destruction or damage. The county fairgrounds are vulnerable to damage to the concession stand, exhibition building, restrooms, and sports fields. Populations located on the county fairgrounds during fairs and other activities are vulnerable to injury or death during thunderstorms. Approximately 1,500 structures are vulnerable to damage or destruction due to the construction materials. If there are any disruptions to the power generations facilities that support them, there can be loss of services they provide to those injured from the elements. Saline Memorial Hospital is a critical facility that could be affected during a severe weather event. The City Hall, Police Station, Main Fire Station, and OEM office are located in the same areas, as well as the courthouse, and County offices. A significant event in this area could disrupt normal business activities.

The city of Alexander:

Real and private property will receive damage from the elements of a thunderstorm. Resident and commercial property that are constructed with unreinforced masonry will be damaged or destroyed. Populations residing or working in these buildings without safe rooms are nearby high-wind shelters are vulnerable to injury or death, especially the elderly and children. There are no critical facilities that would receive major impact that would impede their abilities to respond and provide support during a thunderstorm event.

The city of Bauxite:

In the past, the city of Bauxite has received thousands of dollars of property damage due to hail. Resident homes are mostly unreinforced masonry (17) or manufactured homes (70) which is over half of the structures located in Bauxite. These structures will be damaged or destroyed from the elements of a thunderstorm, and will pose serious risk of death or injury to occupants inside. There are few homes with safe rooms or high-wind shelters that reduce the risk of injury or death. There are no major commercial properties or critical facilities located in the rural city of Benton.

The city of Bryant:

In the city of Bryant, there are several businesses located along Interstate 30, Hwy 5, and Reynolds Road. A tornado safe room was recently constructed near the Civitan Center to provide shelter during severe weather threats. Real and private property will receive damage from the elements of a thunderstorm. Resident and commercial property that are constructed with unreinforced masonry will be damaged or destroyed. Populations residing or working in these buildings without safe rooms are nearby high-wind shelters are vulnerable to injury or death, especially the elderly and children. There are no critical facilities that would receive major impact that would impede their abilities to respond and provide support during a thunderstorm event.

### **3.4.78 Tornado**

#### **Description of a Tornado:**

A tornado is a rapidly rotating vortex or funnel of air extending ground ward from a cumulonimbus cloud. Most of the time, vortices remain suspended in the atmosphere (Golden and Snow, 1991). When the lower tip of the vortex touches earth, the tornado becomes a force of destruction. Approximately 1,000 tornadoes are spawned by severe thunderstorms each year.

Tornadoes are related to larger vortex formations and therefore often form in convective cells such as thunderstorms or in the right forward quadrant of a hurricane, far from the hurricane eye. The strength and number of tornadoes are not related to the strength of the hurricane that generates them. Often, the weakest of hurricanes produce the most

tornadoes (Bryant, 1991). In addition to hurricanes, events such as earthquake induced fire and fires from atomic bombs or wildfires may produce tornadoes.

The path of a single tornado generally is less than 0.6 mi (1km). The path length of a single tornado can range from a few hundred meters to dozens of kilometers. A tornado typically moves at speeds between 30 and 125 mph (50 and 200 km/h) and can generate internal winds exceeding 300 mph (500km/h). However, the lifespan of a tornado rarely is longer than 30 minutes.

### **Locations of Tornado Events:**

Because there is no defined geographic hazard boundary, all people and property in Saline County are exposed to the risk of damage from Tornadoes.

### **Extent, Magnitude or Severity of Tornado :**

All participating jurisdictions can expect a tornado on the Operational EF Scale from a EF-0 to EF-5.

*Enhanced EF Scale for Tornado Damage*

<b>OPERATIONAL EF SCALE</b>	
<b>EF Number</b>	<b>3 Second Gust (mph)</b>
<b>0</b>	<b>65-85</b>
<b>1</b>	<b>86-110</b>
<b>2</b>	<b>111-135</b>
<b>3</b>	<b>136-165</b>
<b>4</b>	<b>166-200</b>
<b>5</b>	<b>Over 200</b>

### **Previous occurrences :**

In Saline County there have been 11 tornadoes between January 2005 and June 2015. Six were within the update period.

### **Probability of Future Tornadoes:**

The probability of future events is highly likely. There a 90 to 100 percent probability of tornado occurrence in the next year or a recurrence interval of 1 year.

### **Impact and Vulnerability of Tornado:**

All areas, residents, structures, and critical facilities in the planning area are of high risk of tornado events. Because there is no defined geographic hazard boundary, all people and property in Saline County are exposed to the risk of damage from tornadoes. All structures in Saline County are vulnerable to tornadoes.

The most vulnerable to tornadoes are wood frame structures and manufactured homes. Damage to residential



Jurisdiction	Total Housing Structures	Wood/Frame Structures	Unreinforced Masonry/Frame Structures	Manufactured Homes
Entire County	45,922	24,143	5,281	8,198
Unincorporated Areas	21,229	10,067	2,202	5,499
Alexander	1,088	249	54	698
Bauxite	192	78	17	70
Benton	13,004	7,853	1,717	733
Bryant	7,668	4,460	975	699
Shannon Hills	1,263	736	161	113
Haksell	1,478	698	152	386

structures could cause hundreds to be without shelter, or try to live in unsafe conditions:

Enhanced Fujita Scale		
Category	Wind Speed	Potential Damage
EF0	105–137 km/h 65–85 mph	Light damage. Peels surface off roofs; some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; mobile homes pushed off foundations or overturned; sign boards damaged.
EF1	138–179 km/h 86–110 mph	Moderate damage. Roofs torn off frame houses; windows and glass doors broken; moving autos blown off roads; mobile homes demolished; boxcars overturned.
EF2	180–217 km/h 111–135 mph	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	218–266 km/h 136–165 mph	Severe damage. Some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	267–324 km/h 166–200 mph	Devastating damage. Well-constructed houses and whole frame houses completely leveled; structures with weak foundations blown away some distance; trees debarked; cars thrown and small missiles generated.
EF5	>324 km/h >200 mph	Incredible damage. Strong frame houses leveled off foundations and swept away; with strongest winds, brick houses completely wiped off foundations; automobile-sized missiles fly through the air in excess of 100 m (109 yd); cars thrown and large missiles generated; incredible phenomena will occur.

The table below describes the impact of tornadoes to residential homes in the participating jurisdictions:

RESIDENTIAL HOME DAMAGE CLASSES		
Degree of Damage (DOD)		Expected Wind Speed Value (mph)
1	Threshold of visible damage	65
2	Loss of roof covering material (<20%), gutters, and/or Awning; loss of vinyl or metal siding	79
3	Broken glass in doors and windows	90
4	Uplift of roof deck and loss of significant roof covering material (>20%); collapse of chimney, garage doors; collapse inward, failure of porch or carport.	97
5	Entire house shifts off foundation	121
6	Large sections of roof structure removed; most walls remain standing	122
7	Exterior walls collapsed	132
8	Most walls collapsed, except small interior rooms	152
9	All walls collapsed	170
10	Destruction of engineered and/or well-constructed residence; slab swept clean.	200

Source: FEMA.GOV

The following losses have resulted from the 15 tornadoes in Saline County based on the Enhanced Fujita Scale:

Year	Number	Magnitude F/EF3	Mag F/EF2	Mag F/EF1	Mag. F/EF0	Deaths	Injuries	Property Damage
1997	1		F2				1	500K
2004	1				F0			0.0
2005	6	F3(2)	F2(4)			1	8	N/A
2008	3	F3(1)	F2(2)			4	12	21.25M
2009	1			EF1				200K
2010	2		EF2	EF1				1.85M
2011	1			EF1				35K
<b>Totals</b>	<b>15</b>	<b>2</b>	<b>6</b>	<b>13</b>	<b>1</b>	<b>5</b>	<b>21</b>	<b>22.845M</b>

12 deaths have occurred in Saline County from injuries caused by tornadoes. 10 were in 1997 on one day, which ghdfd have been zero since then.

Saline County Assessor data was overlaid and those parcels containing structures that are within the historical tornado damage path were selected and total improvement value was computed. There is a potential loss of 45,922 structures at a value of \$139,753,400. All incorporated municipalities have been struck by tornadoes in the past as well as a number of unincorporated towns.

Utilities most vulnerable to tornado winds are electrical power lines and communication structures. Most transportation systems such as highways, railways are not highly vulnerable to tornadoes, but downed power lines and trees and limbs can delay travel until roads are cleared. This would not only affect the day to day traffic but also critical services such as emergency police, fire, and ambulance. All jurisdictions would be affected due to the lost power, water, sewer, gas, and communications. Power and water outages would cause food spoilage and sanitation problems for communities. Hospitals, grocery stores and other critical need and economically important facilities are damaged and closed for extended periods.

#### City of Bauxite:

Resident homes constructed with unreinforced masonry will be damaged or destroyed during a tornado event, and will pose serious risk of death or injury to occupants inside. There are few homes with safe rooms or high-wind shelters that reduce the risk of injury or death. The Bauxite School District has a safe room that is open to the public after school hours during tornado events.

#### City of Alexander:

Real and private property will receive damage from the elements of a tornado. Resident and commercial property that are constructed with unreinforced masonry will be damaged or destroyed. Populations residing or working in these buildings without safe rooms are nearby high-wind shelters are vulnerable to injury or death, especially the elderly and children.

#### City of Bryant:

A community safe room was built next to the Civitan Nonprofit using FEMA funds. It allows residents in the area to seek shelter during a tornado event. However this affects only a very minor segment of the population. Resident homes constructed with unreinforced masonry will be damaged or destroyed during a tornado event, and will pose serious risk of death or injury to occupants inside. There are few homes with safe rooms or high-wind shelters that reduce the risk of injury or death.

#### City of Benton and the Unincorporated areas of Saline County:

Resident homes constructed with unreinforced masonry will be damaged or destroyed during a tornado event, and will pose serious risk of death or injury to occupants inside. There are few homes with safe rooms or high-wind shelters that reduce the risk of injury or death.

#### School Districts:

All school districts could be closed for extended periods due to power and water outages, or possible damage to building structures on school campuses. The school buses are also disrupted due to damaged or destroyed roads and bridges. Employment would be affected from school closings. Bauxite School District has one safe room at its middle school campus, but still is in need of more protected space for the rest of its district. All other school districts are without protected space for its students and staff that are up to the national protection standard.

### **3.4.9-8 Wildfire Profile**

#### **Description of Wildfire:**

A wildfire is any outdoor fire that is not controlled, supervised, or arranged that spreads through vegetative fuels, exposing and possibly consuming structures. Naturally occurring and non-native species of grasses, brush, and trees fuel wildfires. There are essentially two types of fires. They are known as wildland fires and Wildland-Urban Interface (WUI) fires. A wildland fire is a wildfire in an area in which development is essentially nonexistent, except for roads, railroads, power lines and similar facilities. A WUI fire is a wildfire in a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels. Areas with a large amount of wooded, brush and grassy areas are at highest risk of wildfires. Additionally, areas anywhere that have experienced prolonged droughts or are excessively dry are also at risk of wildfires.

#### **Location of Wildfire**

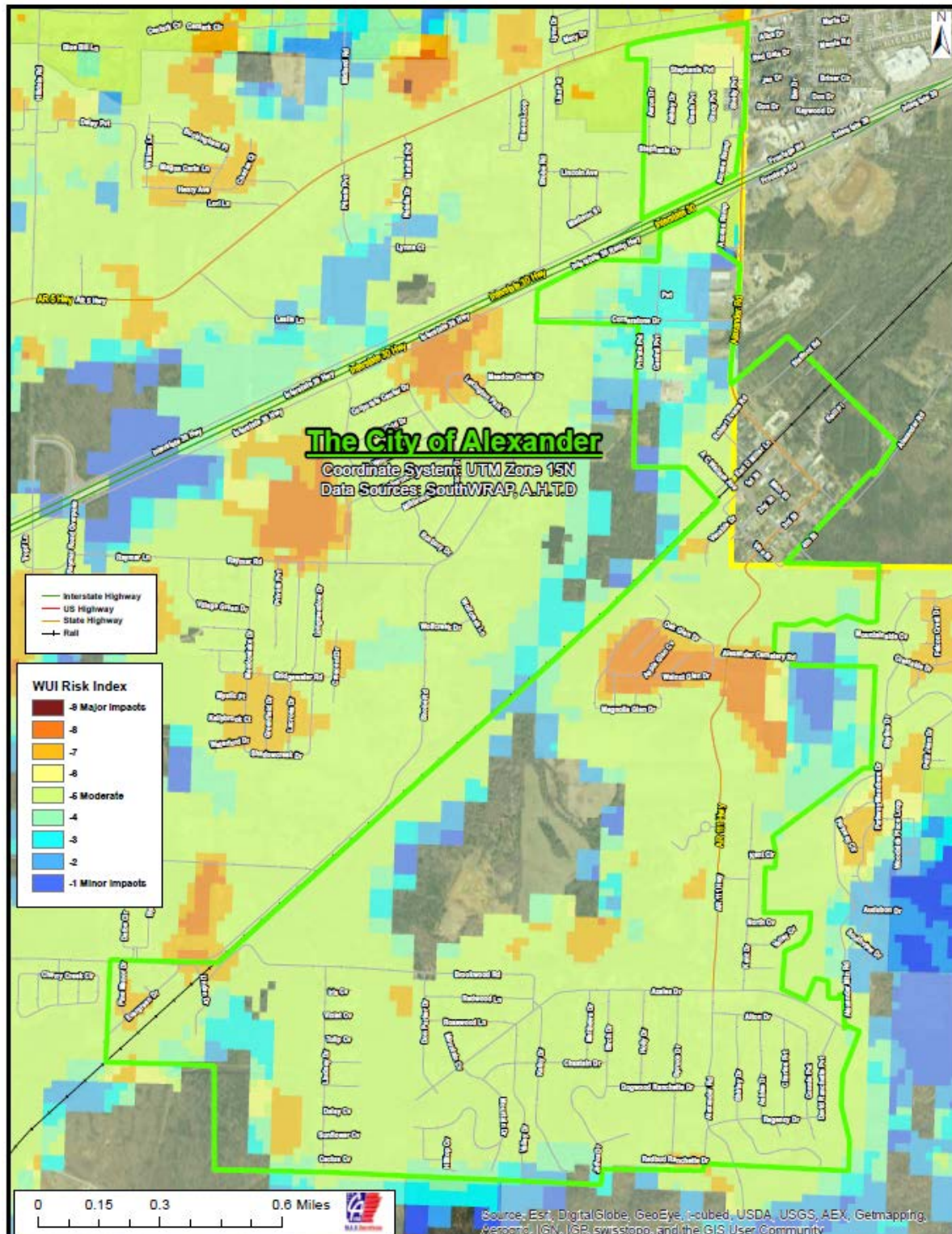
Any jurisdiction located in zones that inhibit the primary factors of fuel, topography, and weather are susceptible to wildfire. These three factors can predict wildfire behavior in WUI areas and wildland areas. Large amount of wooded, brush, and grassy areas are considered fuel that promotes the spread of wildfires. Topography affects the movement of air over the ground surface, and the slopes of terrain will change the rate of speed that the fire spreads. Lastly, areas that have experienced prolonged droughts or excessive dry spells can predict wildfires. For WUI fires, any location that intermixes with wildland fuel and human development along with topography and weather are at risk to wildfire. For the entire Saline County, including the unincorporated areas, and the cities of Bauxite, Alexander, Bryant, Benton, and school districts of Bauxite, Benton, and Bryant, SWRA estimates that 95 percent of the area population live within the WUI.

The Fire Intensity Scale for Saline County, the cities of Bauxite, Alexander, Benton, and Bryant, including the campus of the Bauxite, Benton, Bryant School Districts, Harmony Grove, and Sheridan shows the locations of wildfire.

#### **Extent, Magnitude or Severity of Wildfire**

A Fire Intensity Scale retrieved from the Southern Wildfire Risk Assessment is included for each individual jurisdiction depicting the location and extent of a wildfire. This section is included to identify location, severity, and extent. There are two additional maps in the Appendix that identify the location of Paron Elementary School (Bryant School District).

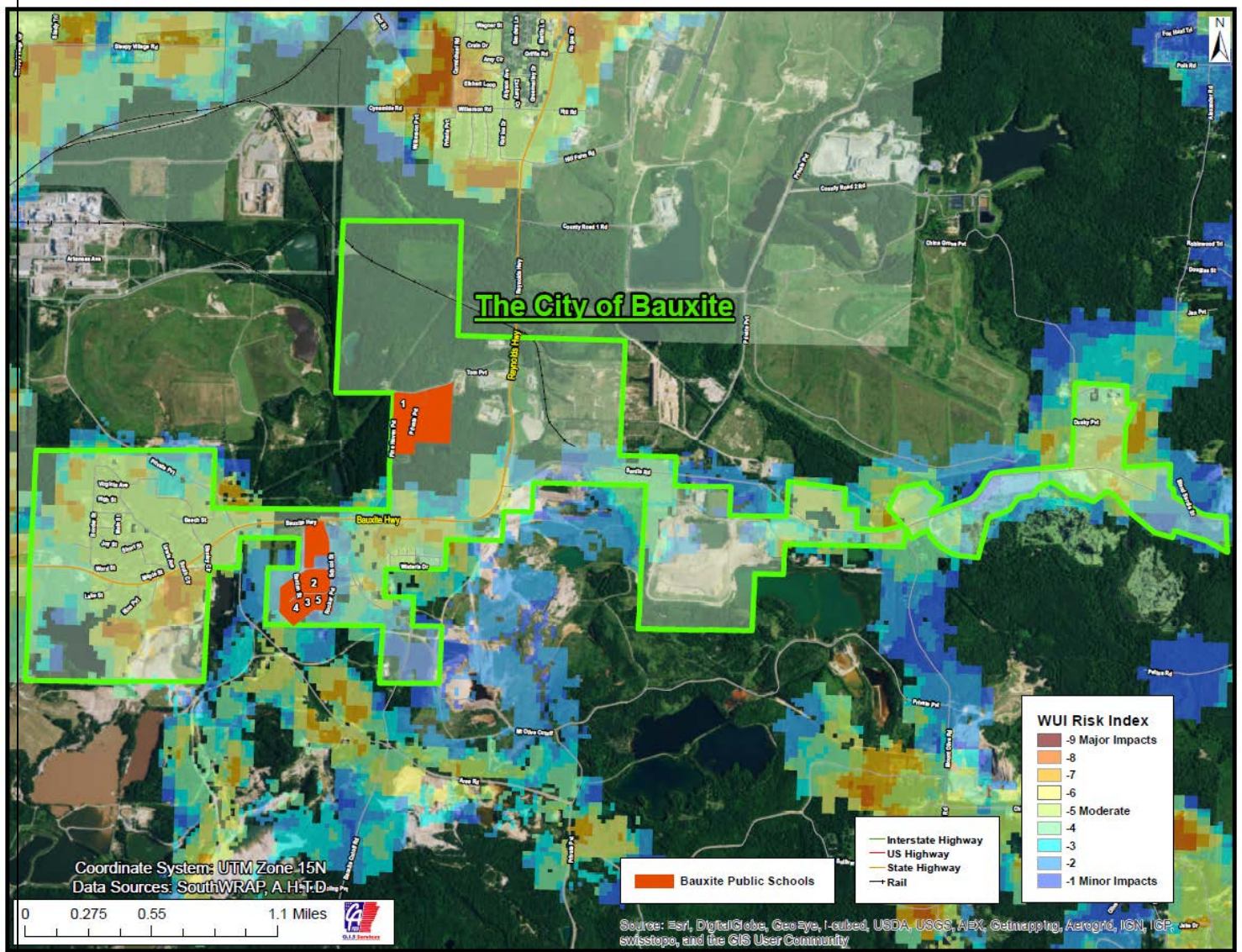
#### **City of Alexander:**



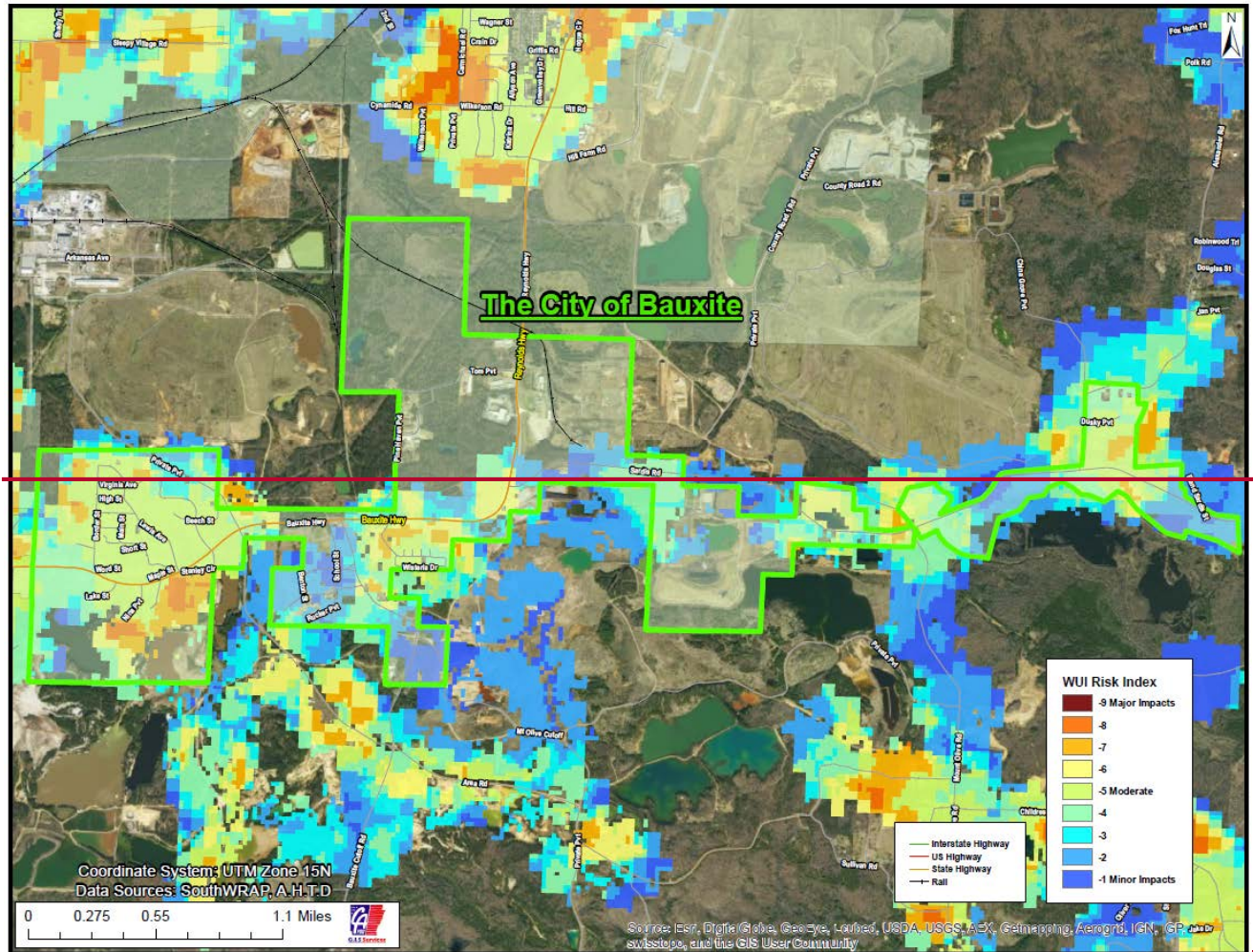
The city of Alexander has a Low to Moderate Fire Intensity. Short-range spotting is possible. Flames will be up to 8 feet in length. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective.



## City of Bauxite:







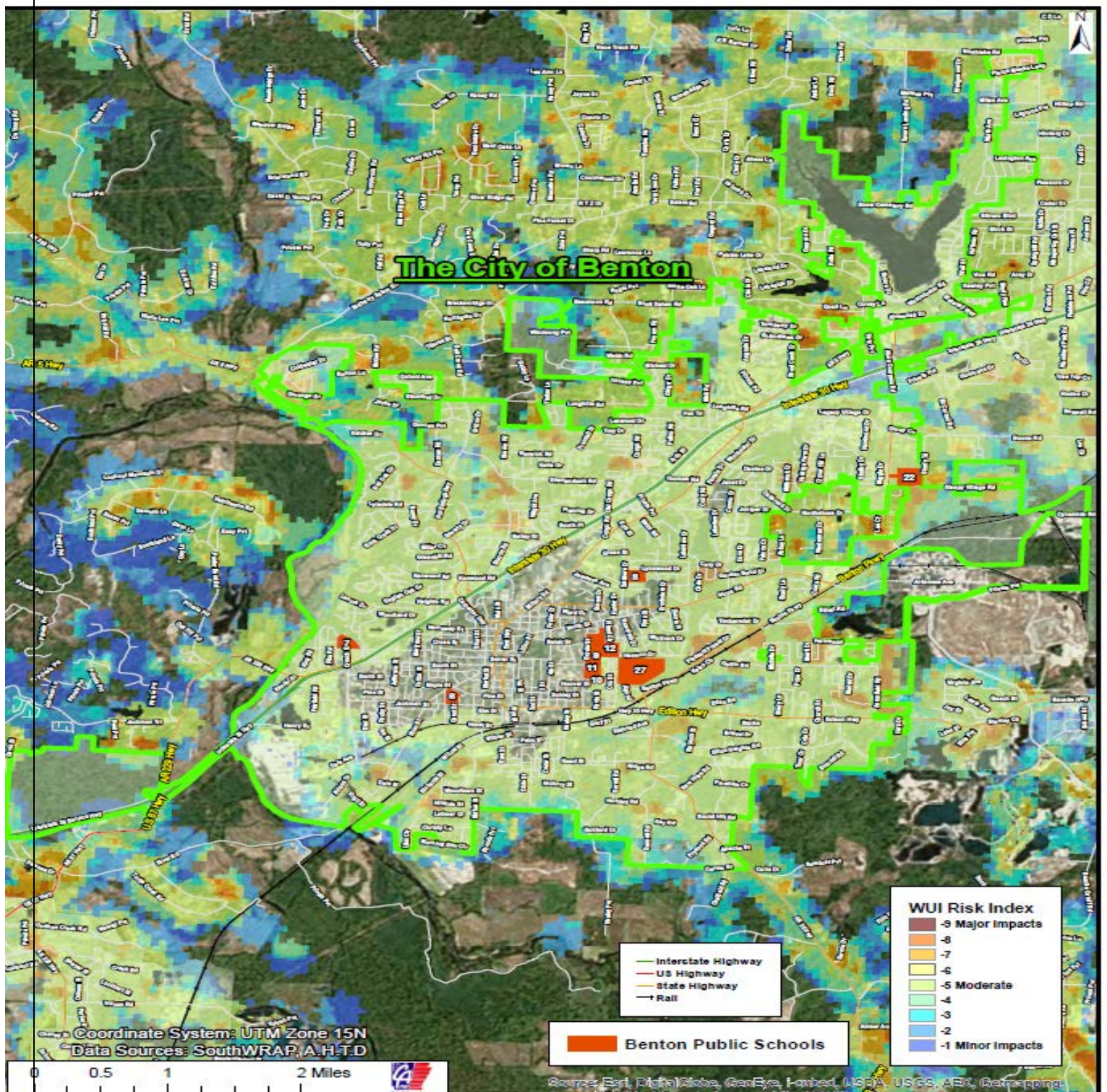
The city of Bauxite is mostly a forested area bordering vast amounts of timberland. being directly impacted by a wildfire.

The location of Bauxite School Campuses:

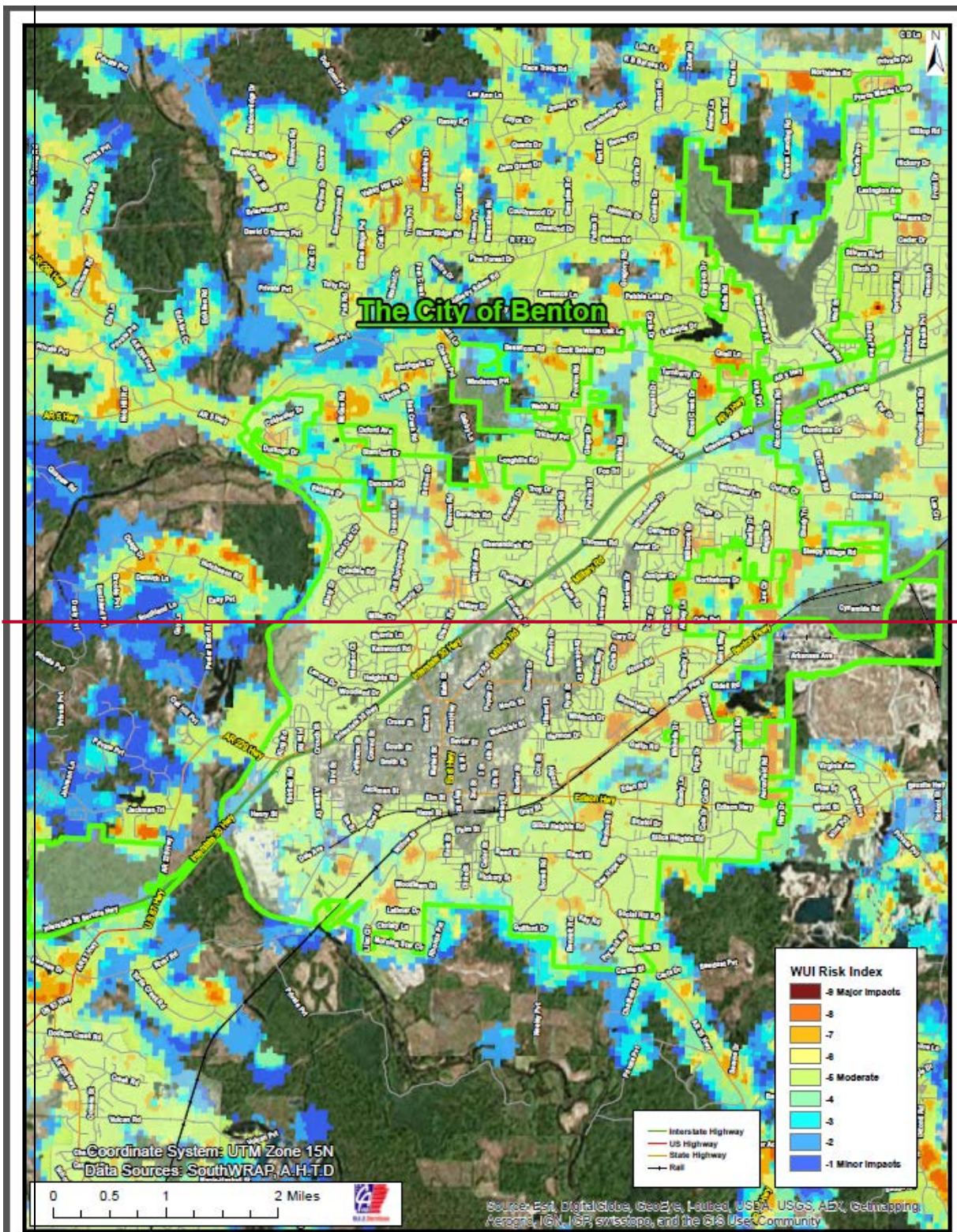
1. Pine Haven Elementary
2. Bauxite Middle School
3. Bauxite High School
4. Miner Academy 1
5. Miner Academy 2
4. —



**City of Benton:**







The city of Benton has a Low to Moderate Fire Intensity. Short range spotting is possible and flames will be up to 8 feet in length.

Benton School District Campuses:

6. Ringgold Elementary

7. Caldwell Elementary

8. Perrin Elementary

9. Benton Jr. High

10. Angie Grant Elementary

11. Benton High School

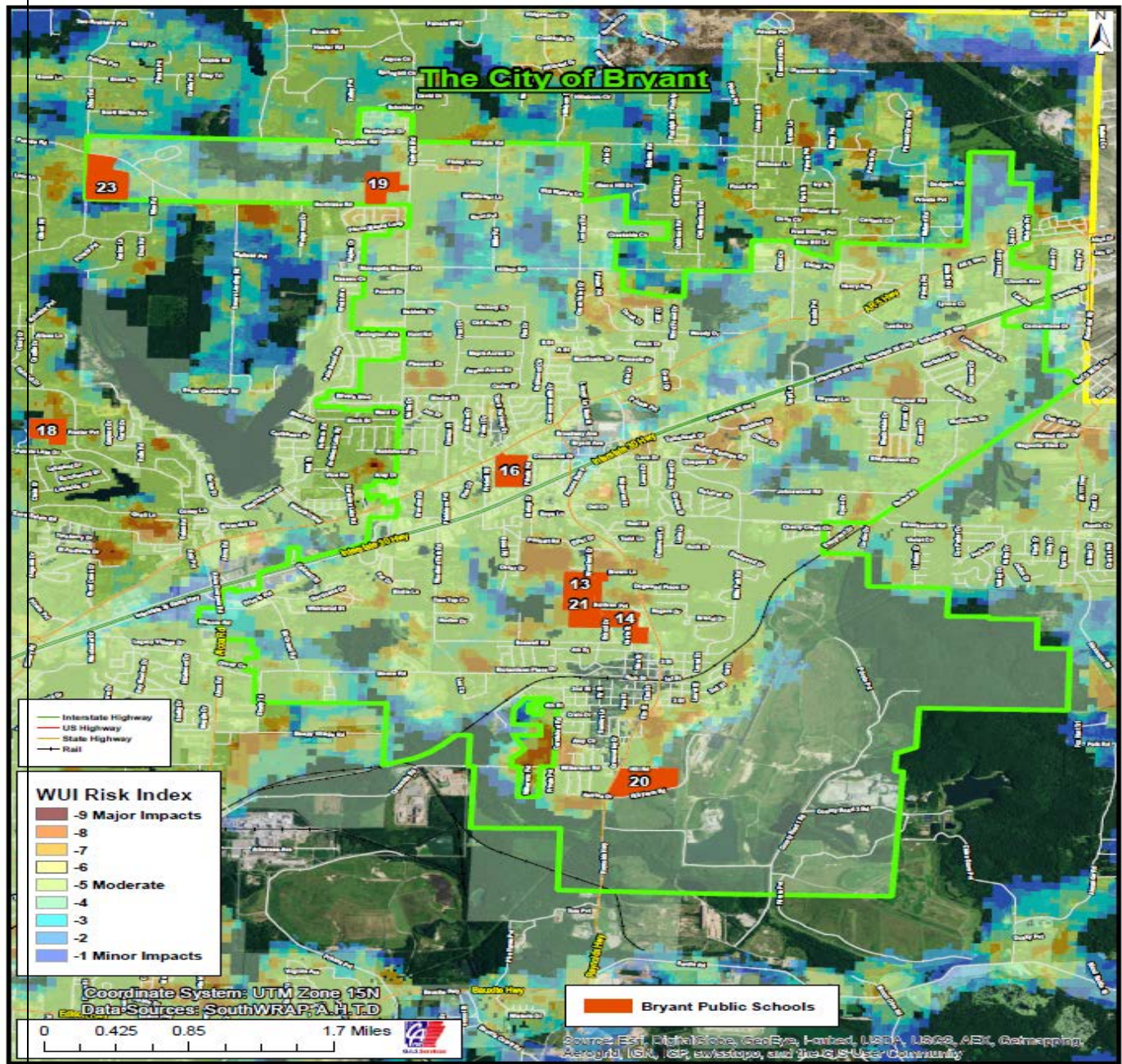
12. Benton Middle School

22. Hurricane Creek Elementary

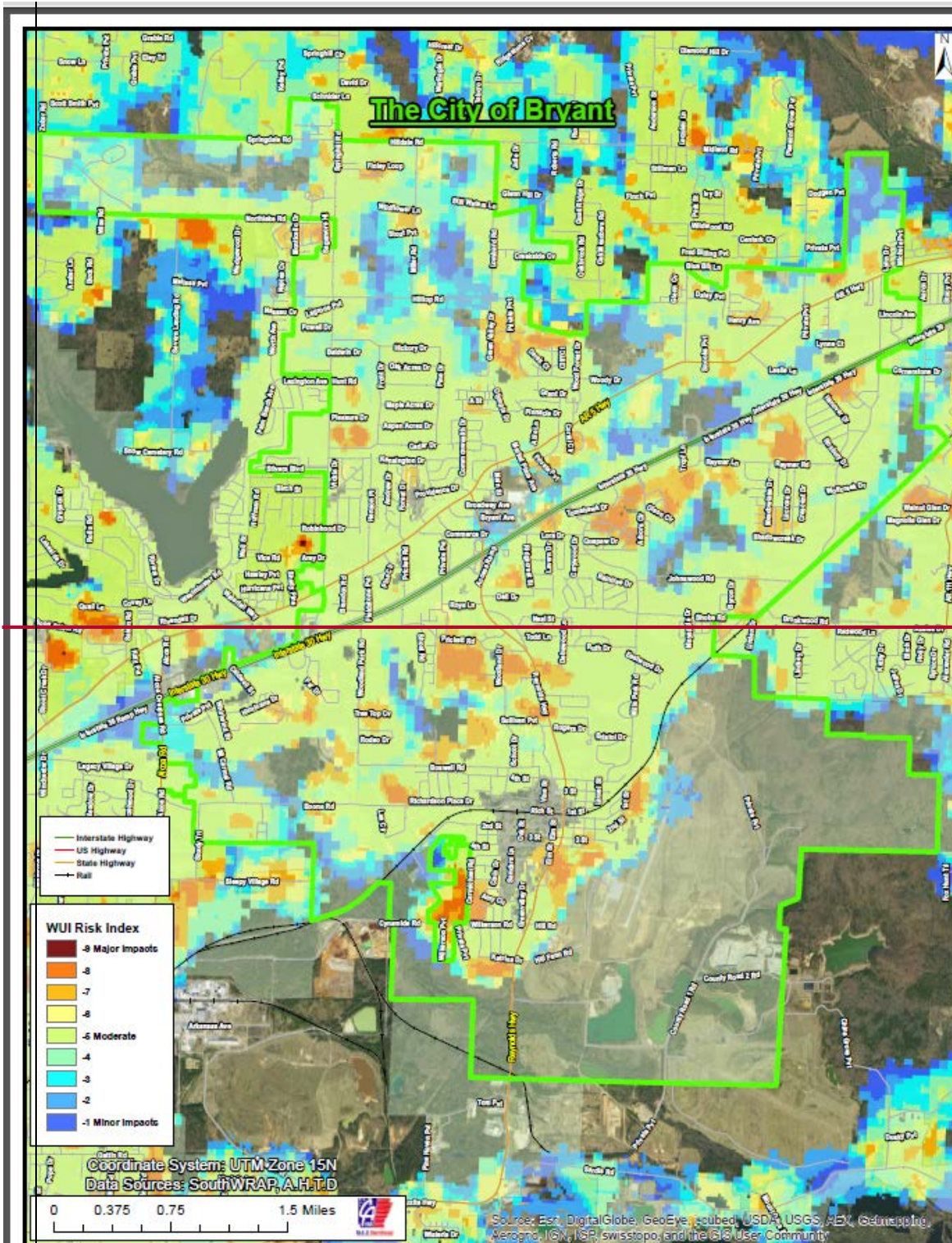
27. Benton Schools Sports Complex

**City of Bryant:**









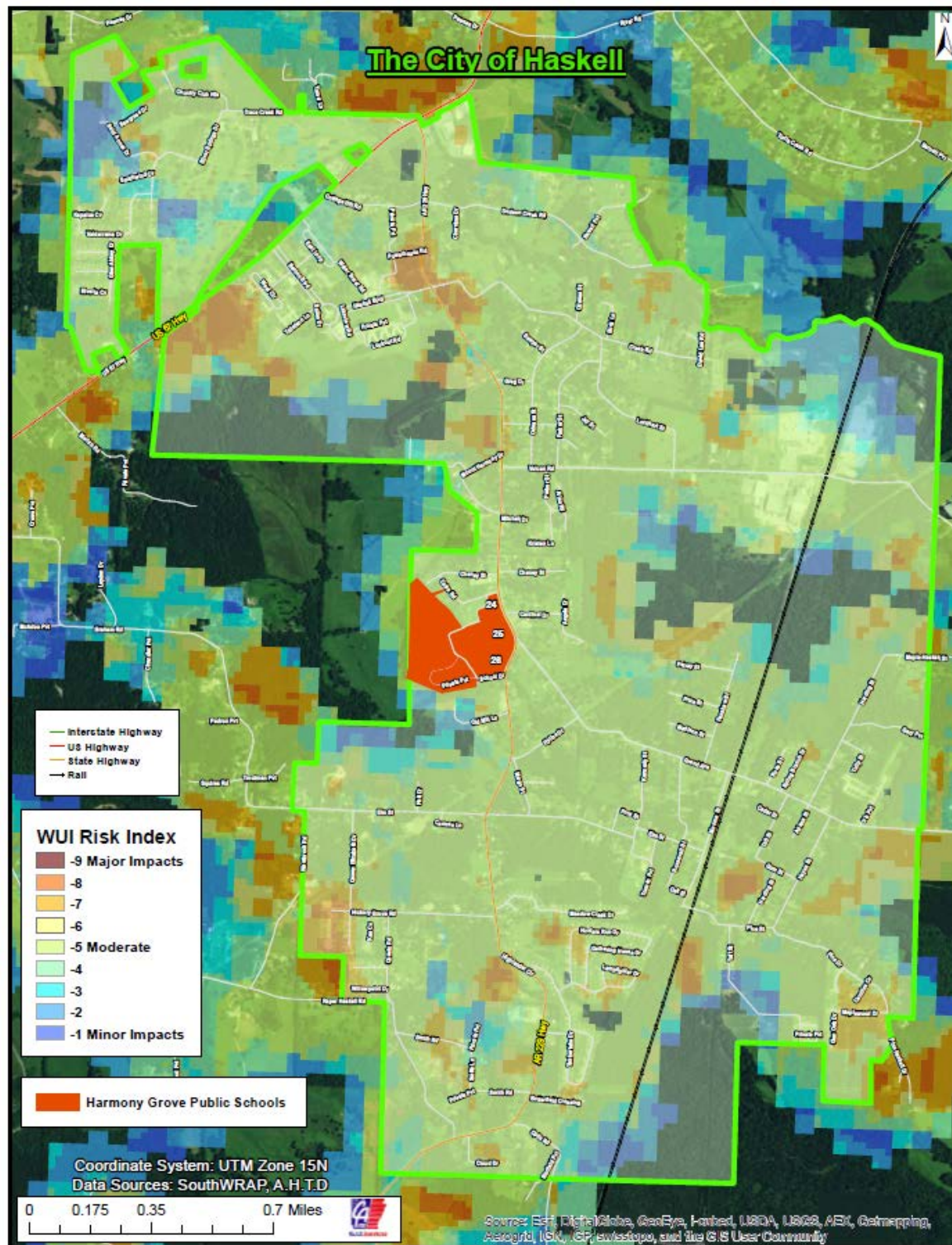
The city of Bryant has a Low Fire Intensity. Flames will be small and less than two feet long. It is possible for a small amount of very short range spotting. Fire are easy to suppress by trained fire fighters with protective equipment and specialized tools.

#### Bryant School District Campuses:

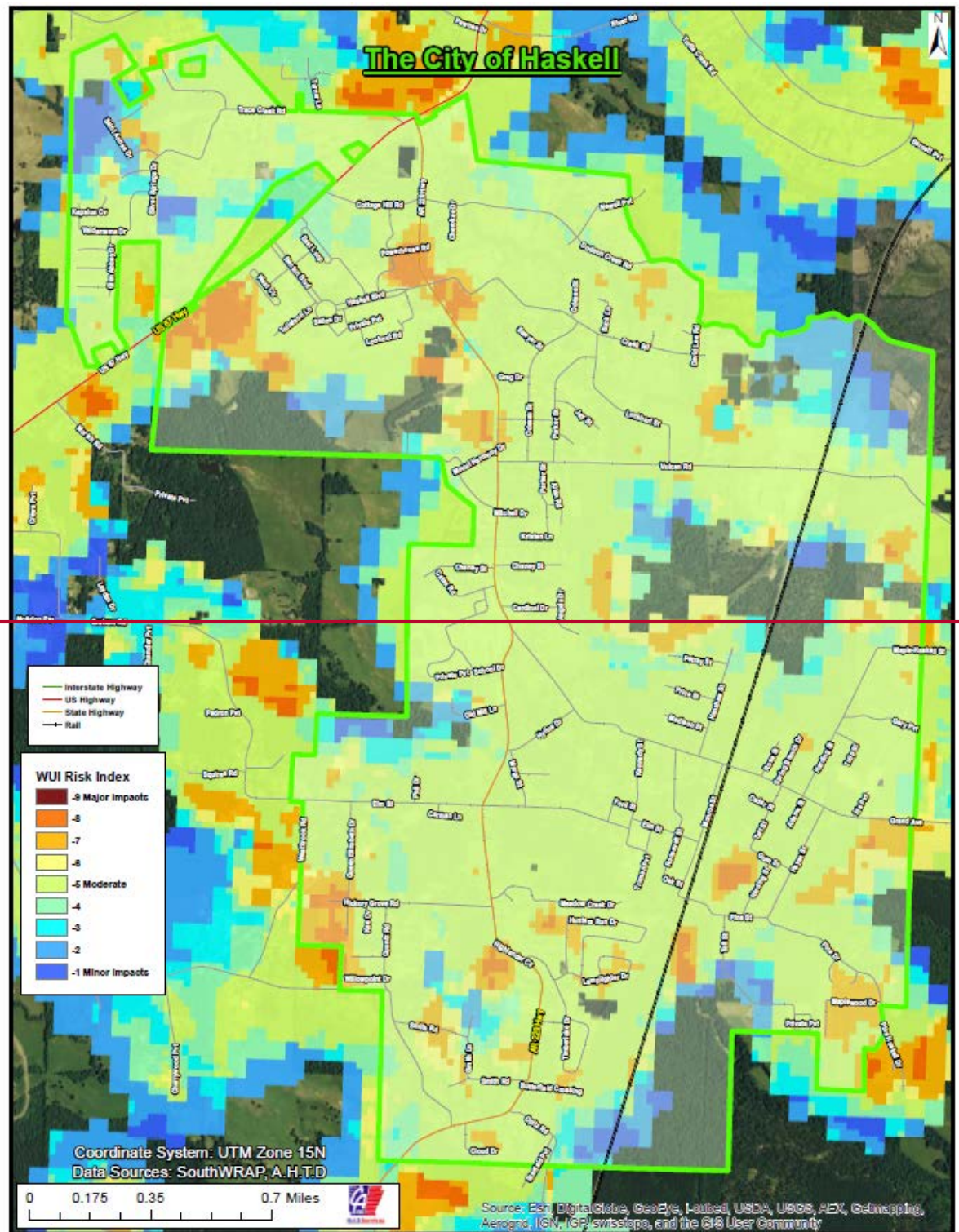
13. Bryant Elementary  
14. Bryant High School  
16. Collegeville Elementary  
18. Salem Elementary  
19. Springhill Elementary  
20. Hill Farm Elementary  
21. Bryant Middle School  
23. Bethel Middle School

**City of Haskell:**









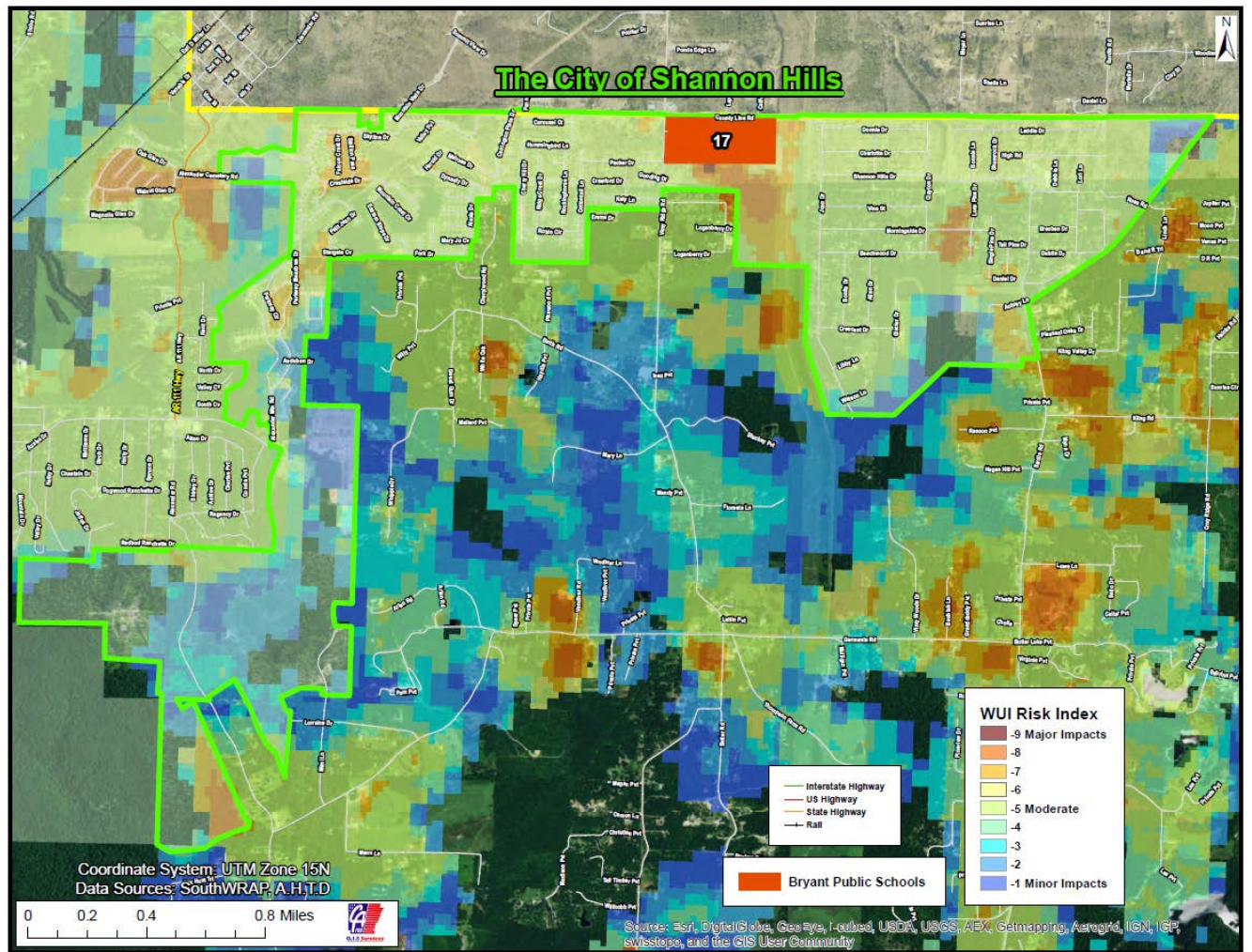
The city of Haskell has a Low Fire Intensity. Flames will be small and less than two feet long. It is possible for a small amount of very short range spotting. Fire are easy to suppress by trained fire fighters with protective equipment and specialized tools.

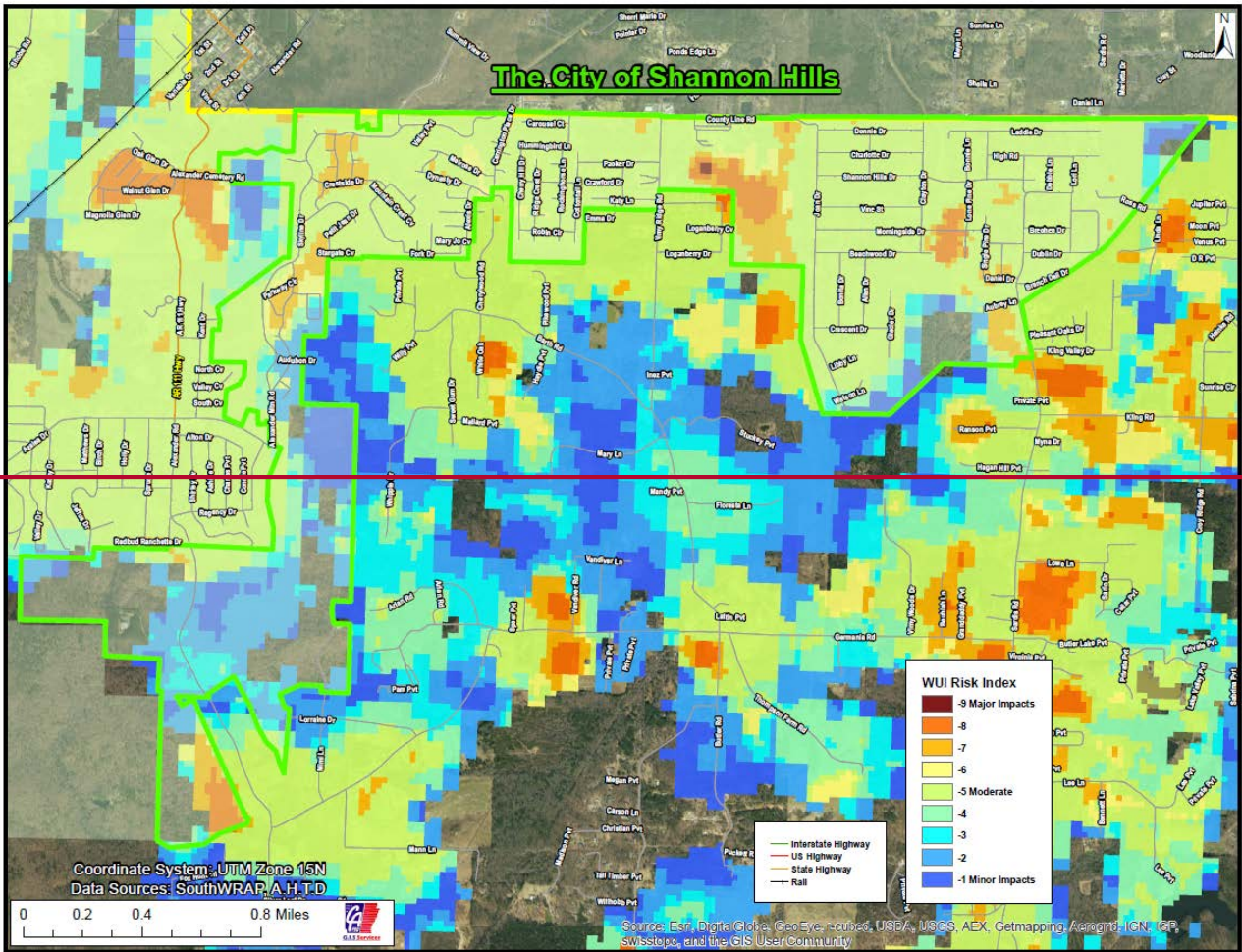
#### Haskell School District Campuses

24. Harmony Grove Middle.  
25. Westbrook Elementary School  
26. Harmony Grove High School

**City of Shannon Hills:**



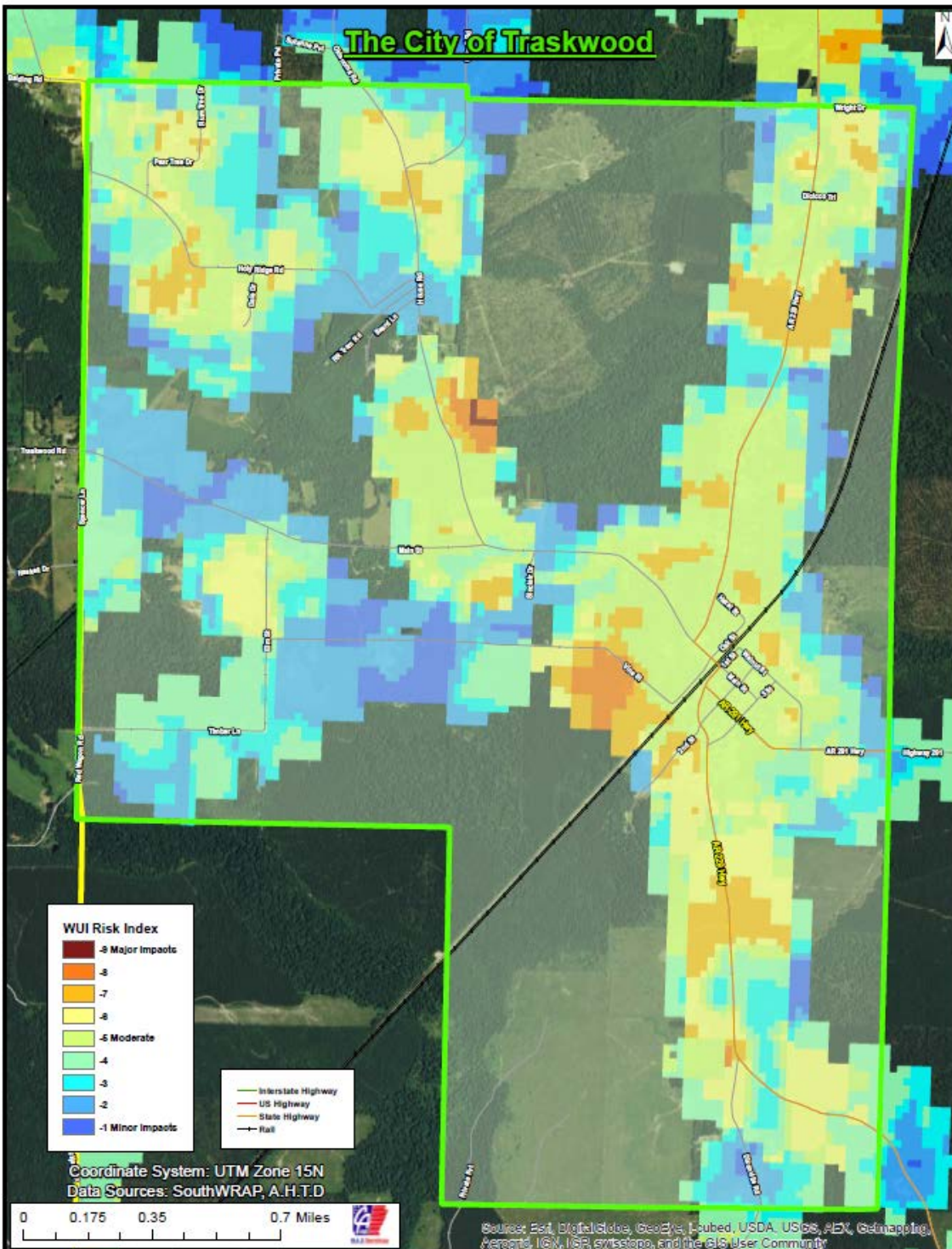




The city of Shannon Hills has a Low Fire Intensity. Flames will be small and less than two feet long. It is possible for a small amount of very short range spotting. Fire are easy to suppress by trained fire fighters with protective equipment and specialized tools. Location of Bryant School District campus: 17. Robert L. Davis Elementary School.



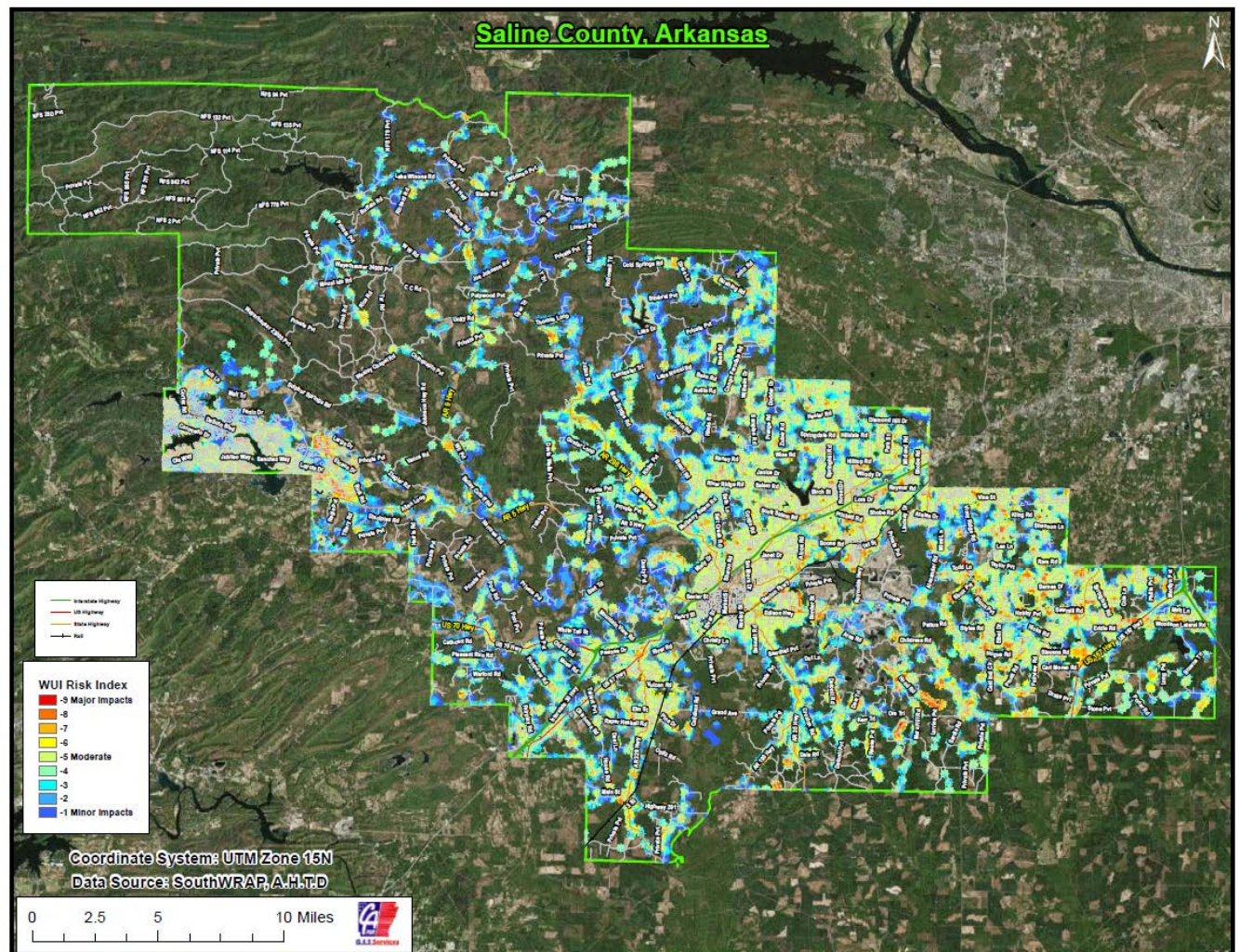
## City of Traskwood:



The city of Traskwood has a High Fire Intensity. These areas will experience some short-range spotting, and medium range spotting is possible. The flames are large up to 300 feet in length. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective.



### Unincorporated Areas of Saline County:



The unincorporated areas of Saline County have a High Fire Intensity. These areas will experience some short-range spotting, and medium range spotting is possible. The flames are large up to 300 feet in length. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective.

### Bauxite School Campuses:

The campus has Low to Moderate Fire Intensity. Short range spotting is possible with flames up to 8 feet in length.

### Benton School Campuses:

The campus has Low Fire Intensity. Short range spotting is possible with flames up to 8 feet in length.

### **Bryant School Campuses:**

The campus has Low Fire Intensity. Flames will be small and less than two feet long. It is possible for a small amount of very short range spotting. Fire are easy to suppress by trained fire fighters with protective equipment and specialized tools.

### **Harmony Grovees:**

The campus of Harmony Grove has Low to Moderate Fire Intensity. Short range spotting is possible with flames up to 8 feet in length.

### **Previous Occurrences :**

Five major wildfire events:

- 1/17/2099- A wildfire burned 140 acres in timberlands of extreme eastern Saline County. The fire occurred between Brown's Trail and Hensley Mail Route Road. Most of the fire burned low to the ground. The fire threatened five residences, but was stopped by local fire departments and the Arkansas Forestry Commission.
- 10/10/2010- A wildfire began about a mile south of Traskwood during the morning hours of the 10th. The fire escaped containment lines during the afternoon and spread considerably, eventually burning 486 acres. At least 21 fire departments fought the fire, along with the Arkansas Forestry Commission. Equipment deployed by the Forestry Commission included eight bulldozers and four air tankers. Two additional bulldozers were provided by a timber company. As the fire grew and threatened structures, Saline County declared a disaster and requested the assistance of the Arkansas National Guard. Arkansas Governor Mike Beebe approved the use of the Guard, and a helicopter was deployed to drop water on the fire. The governor went to the fire. As the fire threatened residences, approximately 575 people were evacuated from the Traskwood, Martin Cutoff, and Holly Creek townships.
- 6/28/2012- An attempt to burn a pile of bamboo led to a 5 acre wildfire at East End in Saline County on the 28th. Seven fire departments fought the blaze. Two firefighters suffered heat exhaustion. Because a burn ban was in effect at the time of the fire, the landowner was issued a citation with a fine of \$1100.
- 6/30/2012- The Springlake Road Fire 4 miles east of East End in Saline County burned 100 acres on the 30th. Sixty people were evacuated at the height of the fire, but the fire was stopped before any structures burned. Five fire departments and the Arkansas Forestry Commission fought the fire. The fire was ruled to be arson.
- 11/24/2012- The Round Mountain Fire began on the 24th about 3 miles southeast of Williams Junction in Perry County and burned into Saline County before being controlled on the 25th. Altogether, 330 acres burned.

**Table 1: Wildfire Summary of occurrences**

Years	Number	Total Acres Burned	Mean Fire Size (ac)
1994–2008	833	5,782	6.9
2008–2015	66	724	10.9

### **Probability of Future Wildfire Occurrences**



The probability of future events is Likely. There is a 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10.

### **Impact and Vulnerability of Wildfire**

The chart below outlines the number of structures, their value, acre and percentage in each level of wildland fire risk. The structures are a combination of all participating jurisdiction. Please note that this report is concerning all fires located within the planning area.

Fire Fighters are the most vulnerable populations during wildfires. Saline County has experienced three deaths of fire fighters in one wildfire due to heat exhaustion. Other vulnerable populations are those that live in a High Intensity area, and those that reside in wood frame structures or manufactured homes, especially the elderly and children.

The most vulnerable structures in Wildfire occurrences are wood frame structures and manufactured homes:

Jurisdiction	Wood/Frame Structures	Manufactured Homes
Entire County	24,143	8,198
Unincorporated Areas	10,067	5,499
Alexander	249	698
Bauxite	78	70
Benton	7,853	733
Bryant	4,460	699
Shannon Hills	736	113
Haskell	698	386

Benton:

The city of Bauxite only has a minimal chance of being impacted by a wildfire, but in the slight chance 7,853 wood frame structures and 733 manufactured homes are vulnerable. Since the Wildland Urban Interface has a higher Fire Intensity, structures located in those areas are vulnerable to damage and destruction.

Harmony Grove and Bryant, Benton, and Bauxite School Districts:

The buildings Bauxite, Harmony Grove, and the outlying campuses for Bryant and Benton are vulnerable to damage and destruction. The school's capability of education will also be hindered. The students and staff on campus are a vulnerable population and could experience serious injury or death.

Bryant:

Since the Wildland Urban Interface has a higher Fire Intensity, structures located in those areas are vulnerable to damage and destruction. Structures located in the WUI and the Fire Department could be consumed and hinder the department's capability of responding to an event.

Alexander:

The city of Alexander only has a minimal chance of being impacted by a wildfire. Since the Wildland Urban Interface has a lower Fire Intensity, structures located in those areas are vulnerable to damage and destruction.

Benton:

Since the Wildland Urban Interface has a low Fire Intensity, structures located in those areas are vulnerable to damage and destruction. Structures located in the WUI and the Fire Department could be consumed and hinder the department's capability of responding to an event.

#### Saline County unincorporated:

The unincorporated areas of Saline County are mostly rural with a large amount of timber plantations, farmland, and pasture for farm animals. Farmers/ranchers, individuals, and private timber companies own a large share (about 90%) of the timberland in Saline County. Communities are concerned about the farmers, animals, and timberland during a wildfire. Livestock and product sales continue to be a major source of farm income for Saline County farmers. The risk on the livelihood of farmers and the overall economy increases as the dependency and increasing trends grow to annually.

#### Shannon Hills:

The city of Alexander only has a minimal chance of being impacted by a wildfire. Since the Wildland Urban Interface has a lower Fire Intensity, structures located in those areas are vulnerable to damage and destruction.

#### Traskwood:

Since the Wildland Urban Interface has a higher Fire Intensity, structures located in those areas are vulnerable to damage and destruction. Structures located in the WUI and the Fire Department could be consumed and hinder the department's capability of responding to an event..

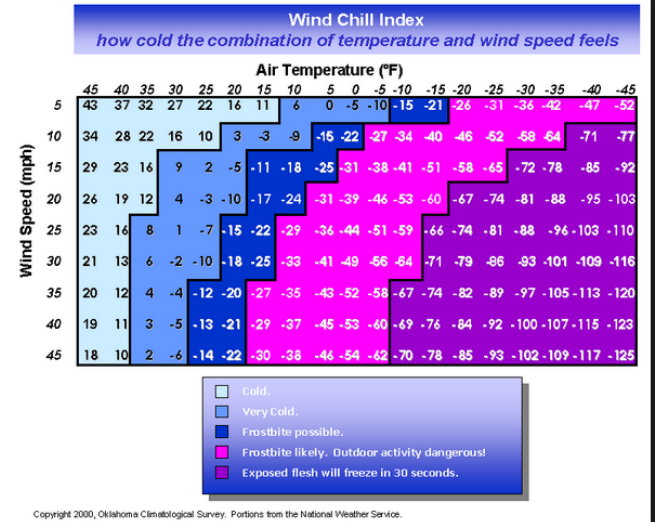
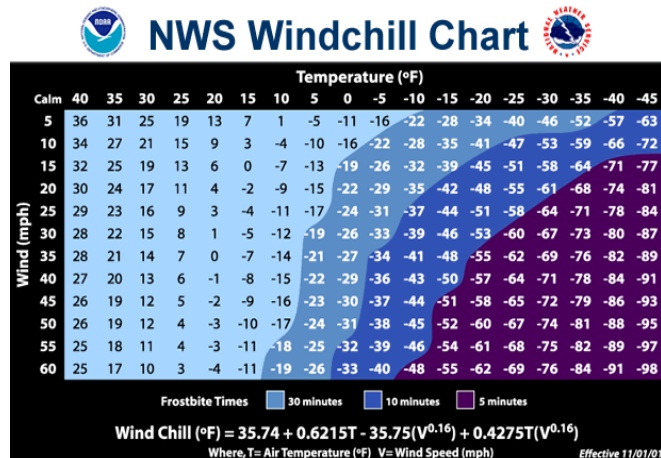
### **3.4.9.10 Winter Storm**

#### **Description of Winter Storm:**

Severe winter storms, which may include heavy snowfall, sleet, freezing rain, or a mix of these wintry forms of precipitation. Severe winter weather can down trees, cause widespread power outages, damage property, and cause fatalities and injuries

#### **Location of Winter Storm Events:**

All areas of Saline County are equally susceptible to severe winter storm events.



## Extent, Magnitude or Severity of Winter Storms

According to National Climatic Data Center (NCDC) and National Weather Service Data, typical snow accumulations in Saline County during heavy snow and winter storm events ranges from 1 inch to 8 inches. Typical ice storm accumulations range from 1/10 of one inch to 1/2 of an inch. When severe winter storm events do occur (the worse typically associated with ice), they are usually wide-spread over the area and impede the movement of vehicles – limiting regular movement of traffic, causing accidents and limiting responsiveness of emergency services – and can down power and communications lines and seriously damage some structures, thus creating potentially critical conditions for the entire area.

Students may be kept inside by the determination of the building principals if there are extreme cold temperatures. Wind chill would be the determining factor in keeping students inside. Some districts initiate monitoring for wind chill is below 32 degrees, some 40 degrees.

## Previous Occurrences

There have been 8 countywide winter storm events between since 2008. There was 1 Ice Storm event between in the same period. It is reasonable to believe that Saline County would experience at least one winter storm each year. However, there are some years in where they do not occur.

## Probability of Future Winter Storms

The probability of future events is likely. There is a 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.

## Impact of Winter Storms

The unincorporated areas of Saline County, cities of Alexander, Bauxite, Benton, Bryant and school districts of Bauxite, Benton and Bryant and the campus of Harmony Grove are equally affected by winter storms. Winter storms are unique to particular areas of the County.

The Unincorporated areas of Saline County:

These areas can be somewhat isolated the further away from the cities, and without adequate supply of fuel, equipment, and food. Also, when utilities and communication is disrupted during a winter storm event, these areas are the last to receive support or returned power because these areas are less populated than the cities. That means these populations will go a week or more without heat and fresh food. During very icy conditions, residents in these areas are extremely vulnerable. They can be trapped at home without utilities or other services. The elderly are the



most vulnerable and account for the largest percentage of hypothermia victims. House fires in these areas are common during winter storms from using alternate heating sources without caution. The rural areas also account for a large number of farms and livestock. The cold will damage vegetation and kill livestock. Poultry houses are vulnerable to loss of poultry products. As for structures, past experience proves that an estimated twenty or thirty structures will be impacted by winter storm events, resulting in only minor damage due to limbs breaking and falling on roofs. County roads will be impassible. The fire districts belonging to these jurisdictions are not equipped with plows or other equipment for clearing roads and sidewalks. In these areas, water supplies may freeze, and impede firefighting efforts.

The city of Alexander, Benton, Bauxite, Bryant, Haskell, Shannon Hills, & Traskwood:

Winter storms will immobilize the greater part of the cities. The highways will be impassible for one or two days. The County Road Department has access to equipment for clearing roads, and has mutual aid agreements with private services and other counties for support. When major roads are affected, it affects the travel flow and the availability of essential services throughout all participating jurisdictions.

Trees can be brought down by the weight of wet snow, snap power lines and damage buildings and houses when they fall. For houses that are poorly insulated will have pipes that freeze and bust inside these homes. Winter storms can cut off heat, power and communications for several days. This city will have priority to restored utilities due to the more populated area and more critical facilities. The elderly account for the most percentage of hypothermia victims. Water supplies may freeze, and impede firefighting efforts. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians.

The National Climatic Data Center provides historical details about past hazard events in the County.

Winter/Ice Events 1997-2013	Fatalities	Injuries x \$1 M	Combined Fatalities, Injuries Personal Property, and Crop Damage Value	Average Cost per Event
9	1	0	\$10.5 M	\$1.16 M

School districts of Bryant, Bauxite, Benton, Harmony Grove, and Sheridan:

The buildings on these campuses may have freezing pipes due to lack of heating or insulation. Trees may fall and down power lines and damage the rooves. Students attending and staff employed at these districts are vulnerable to the impacts of a winter storm. Cancellations will disrupt schedules and education programs.

# Progress in Local Mitigation Efforts:

## County wide and all-jurisdiction mitigation actions in 2008:

Mitigation Actions	Hazard Addressed	2015 Update
Safe-room construction in County, City and school facilities.	Severe Thunderstorm, Tornado, High Winds	Bauxite Schools and City of Bryant each constructed a safe room. They each still have a need for more safe rooms as the rest of the jurisdictions.
Drainage improvements are needed to mitigate the flooding situation in the City of Bryant in the Forest Cove, Sunset Meadows and West Point Subdivision (1,000 homes). Any significant rainfall causes flooding of homes and in times past, left residents to be rescued.	Flood	completed
Mitigate the flooding situation along Lake Norrell Road and Canney Creek Road. Bridge is underwater at least three times a year leaving 450 residents without emergency services.	Flood	Completed
Ensure public facilities have severe weather action plans.	Severe Weather, Tornado, High Winds	Completed
Install Air Purification System at County 911 office. Install "air tight" doors at the facility.	Severe Weather	Completed
Acquire generators for all Saline County shelters, city halls, emergency operations centers, and other critical facilities that do not presently have them to maintain power and water during disasters (protect against further damage)	Tornado, Earthquake	Bauxite schools has one for the safe room. City Bryant is completed. City of Haskell is completed.
Enact codes to require homeowners to clear dead vegetation which can fuel wildfires, ensuring that structures are surrounded by defensible space buffer zones	All	Alexander & Bryant have relative codes..
Seek to enact manufactured home regulations to ensure use of tie-downs and anchoring in new buildings and existing mobile structures.	Wildfire	Haskell, Alexander, & Bryant all have relative codes.
The SCLEPC will study efficacy of tornado warning sirens and continually monitor siren status.	Tornado, High Winds, Earthquake	
The SCLEPC will promote the acquisition of all-hazard radios for all schools, city halls, large businesses, churches, and other locations where large numbers of people congregate and how to obtain them.	All	County provided radios to all residents in the unincorporated areas.
Ensure proposed mitigation projects are in conformance with the State of Arkansas Hazard Mitigation Plan and State mitigation priorities.	All	Completed
Arrange for jurisdiction to produce studies to determine losses due to dam failure for high vulnerable. dams	Flood	
Provide support for structural and non-structural mitigation measures for properties in the 1%-annual-chance floodplain.	Flood	All NFIP participants, at a minimum, has this code.
Mitigate flooding along Old Hwy 291 and the Saline River. Water overflows the road before the bridge. Flooding can be eliminated by elevating the roadway before the bridge.	Flood	Completed
Mitigate Flooding along South Sardis and Hurricane Creek. Creek overflows the road before the bridge. Roadway needs to be elevated.	Flood	
Provide information to the public on the State of Arkansas; individual safe-room rebate program using	Severe Thunderstorm, High Winds,	

brochures, existing local website, news releases and other mean.	Tornado, Earthquake	
Ensure that the current version of the Saline County Hazard Mitigation Plan is easily accessible to the general public (e.g., online, in local libraries) for Public Input on Plan Update	All	On CAPDD's website.
Encourage Arkansas Geology Commission and Arkansas Highway and Transportation Department to improve risk assessment by Mapping expansive soils and determining losses due to disruptions due to expansive soils	Expansive Soils	
Mitigate flooding along Rice Road and Cedar Creek. Creek overflows the Bridge. Must build larger opening bridge and raise elevation of the road.	Flood	Completed
Mitigate flooding along Westbrook Road and Alum Fork Creek. Creek overflows the bridge. Must install larger bridge and raise elevation of bridge and road.	Flood	
Mitigate flooding along Goosepond Road and Middle Fork. Water overflows road obstructing access. Must raise roadway before bridge.	Flood	
Mitigate flooding along Danville Road and Middle fork. Water from creek overflows roads obstructing access to the bridge. Road before bridge needs to be elevated.	Flood	Completed
Mitigate flooding at Mt. Ida Road and Slum Fork. Creek overflow roadway flooding before bridge. Bridge needs elevated, increase opening of bridge and raise roadway.	Tornado-High Winds	
Mitigate flooding at Sulphur Springs Road along wet weather branch. Water overflows roadway at culvert. Upgraded culver needed as well as elevation of roadway.	Flood	
Work with Arkansas Forestry Commission to improve risk assessment by determining losses due to wildland fires in the County	Wildfire	
All communities should join Fire Wise program at firewise.org.	Wildfire	
Mitigate Flooding in The City of Benton along Salt Creek in the Hidden Valley Subdivision. The Saline river backs up into Salt Creek causing it to overflow its banks. At this time the only solution to the flooding would be to re-locate the houses out of the area.	Flood	
Bury or otherwise protect electric and other utility lines.	Tornado	
Work with Arkansas Soil and Water Conservation Commission to determine losses in Saline County due to drought	Drought	
Encourage formation of neighborhood wildfire safety coalitions.	Wildfire	
Develop brochures, a website, educational programs, and public services announcements to increase public awareness of hazards to which Saline County residents are exposed and potential mitigation measures that may be undertaken.	All	Cities use their website and newsletters. Emergency personnel use social media to push hazard awareness..
Mitigate flooding along CC Road and Less Creek. Creek overflow road. Upgrade existing pipe.	Flood	Completed
Mitigate flooding at Vimey Ridge and West weather branch. Water overflows roadway. Must upgrade existing pipe.	Flood	
Mitigate flooding on Hensley Mail Route and Wet weather Branch. Water overflows roadway. Must upgrade existing pipe.	Flood	
Encourage installation of smoke detectors and fire extinguishers.	Wildfire	completed
Use GIS Mapping to identify past hazard locations and identify emergency response lifelines that are to be protected. Any new facilities constructed will be built to mitigate identified hazards when possible.	All	
Identify and maintain alternative water resources in neighborhoods (small ponds, cisterns, wells, pools,	All	



hydrants, etc) Thus alleviating impacts on agriculture and livestock		
Adopt zoning laws requiring new building to be elevated above the BFE or the dam breach elevation, whichever is higher	Flood, Dam Failure	All NFIP participants have relative codes.
Include mitigation awareness efforts in all SCLEPC meetings.	All	
Local jurisdictions will increase road and debris clearing reasonability	Tornado, Flood, Dam Failure, Severe Winter Weather, High Winds, Wildland Fire, Thunderstorms, Expansive Soils, Earthquake	Benton & Bryant have purchased equipment and vehicles that would increase their capabilities.
Mitigate flooding at South Sardis Road and West weather branch. Water overflows roadway. Roadway needs to be elevated and culvert needs upgraded to a larger size.	Flood	
Mitigate flooding at Shaw Bridge Road and the Saline River. Water overflows roadway. Elevating the roadway would eliminate the problem.	Flood	
Mitigate flooding at Samples Road and Hurricane Creek. The creek overflows its banks and floods the road obstructing access to the bridge. Road and Bridge needs to be elevated.	Flood	
Mitigate flooding at Shimrod Road and Dry Creek. During large rain events, the creek will overflow the banks and flood the roadway. Roadway needs to be elevated as well as the opening of the bridge needs increased.	Flood	
Mitigate flooding at East Avilia and Hurricane Creek. Creek overflows roadway. Roadway needs elevated and culverts need upgraded to a larger size.	Flood	
Encourage County and local governments to adopt zoning laws and floodplain development regulations.	Flood, Dam Failure	
Design and implement in-stream erosion reduction program.	Flood	
Inventory Repetitive Loss Structures for removal retrofitting	Flood	Will be removing this action due to the fact that it is kept by ANRC and FEMA, and accessible at any time via the floodplain manager.
Mitigate flooding along Depot Creek at Market Street, Hwy 35 and Edison Ave. The creek needs to be cleaned out from one end to the other. The state is looking at upgrading the existing culverts.	Flood	
Mitigate flooding along Brook Rd. in Alexander. Crooked Creek overflows its banks. Road needs to be Raised	Flood	Completed
Mitigate flooding along Peeler Bend Rd. Flooding occurs 1.5 miles off Hwy. 290. Existing culverts need upgraded.	Flood	
Create a detailed Expansive Soils GIS database that will give the locations of high risk soil coverage throughout the county. Building codes and zoning changes will be adopted where needed.	Expansive Soils	
Implementation of water conservation measures for localized drought conditions (Irrigation, fixture retrofits, etc.)	Drought	
Coordinate efforts between the county, power companies and private citizens to remove limbs around power lines	Severe Weather	
Water conservation programs to reduce water consumption.	Drought	
Install surge protection and window film and lightning protection devices on all communications infrastructure and critical facilities.	All	

Establishing and promoting accessible cooling centers/shelters for vulnerable, special-needs and at-risk population	Extreme Heat	
Non-structural mitigation of public facilities (window film, bracing of cabinets, emergency gas shut-offs, etc)	Earthquake	

### Additional Mitigation Projects Completed:

- Bauxite School District received a FEMA grant for \$ 581,640 to construct a saferoom.
- City of Bryant received \$ 360,580 through FEMA for a drainage project for the Forrest Cove Subdivision flooding.
- City of Bryant – Richland Park Subdivision Detention Basin Drainage Project. \$650,000.
- Haskell – State funded a mitigation project to flooding on Valderrama Drive.
- All jurisdictions currently have smoke detectors and fire extinguishers at all critical facilities. (Previous mitigation Project).

## SECTION 4- Mitigation Strategy

The Saline County Hazard Mitigation plan includes a mitigation strategy that provides the Saline County’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 by funding through county, city and school district taxes, yearly budgets and passing ordinances.

The following capabilities describe what the County, Cities and School District may or may not have to implement and maintain mitigation efforts, are addressed in the existing authorities, policies, programs and resources available to accomplish hazard mitigation;

Cities of Alexander, Bauxite, Benton, Bryant, Haskell, Shannon Hills, and Traskwood each are different in terms of staffing, funding, policies and program giving them the ability to carry out their local hazard mitigation goals. Each city has the capability to be an active member in the NFIP, to pass mitigation ordinances for their local government, regulate and limit the development in wildfire hazard areas and flood prone areas through land use planning implement retrofit construction plans, brace equipment, and provide emergency preparedness information to area residents through FEMA brochures.

Saline County, all cities, and school districts would be dependent upon grant funding to assist with larger mitigation projects, such as safe rooms and heavy duty generators to back up and maintain electrical power for critical facilities. The Cities would need assistance in financing drought communication and early warning systems, heating and cooling centers. Saline County would need funding assistance in correcting structural weaknesses in dams. Funds would also be needed for flood inundation studies and conduct inspections, maintenance and enforcement programs on high risk dams in the County.

### 4.1 Mitigation Goals and Objectives

Based upon the results of the local and State risk assessments, the Saline County Hazard Mitigation Planning Team, with input from local jurisdictions and officials, developed hazard mitigation goals and objectives and selected those that were determined to be of greatest benefit. These goals and objectives represent what Saline County believes is a long-term vision for reduction and enhancement of mitigation capabilities:

**Goal 1. Reduce the potential for loss of life, injury and economic damage created by exposure to natural hazard for residents of Saline County due to natural disasters.**

**Objective 1 Enhance and maintain county capability to implement a comprehensive countywide hazard loss reduction strategy**

**Objective 1.1** Integrate overall mitigation strategies into the community's current and future capital improvements program and planning efforts to ensure that new projects have a minimal associated risk.

**Objective 1.2** Formulate strategies using state of the art knowledge to reduce vulnerability to natural hazards

**Objective 1.3** Identify Mitigation grant opportunities for Saline County and city governments, non-profit agencies, and the general public, and provide effective technical support in pursuit of grants for hazard mitigation measures.

**Objective 2 Implement public education initiatives to improve understanding of natural hazards and hazard mitigation.**

**Objective 2.1** Design mitigation website for Saline County with link to public view of the Saline County Mitigation Plan and mitigation strategies.

**Objective 2.2** Saline County and all jurisdictions included in the mitigation plan should participate in the National Flood Insurance Program (NFIP), the Community Rating System (CRS), the Firewise Communities/USA program, the National Weather Service StormReady Program, Disaster Resistant Community Council and FEMA's Cooperating Technical Partners (CTP) program (participation in the above programs is part of the State ranking criteria for funding mitigation proposals).

**Objective 2.3** Educate the public about the risks associated with natural hazards and the steps they can take to be prepared.

**Objective 2.4** Initiate programs to promote on-going partnerships within the community to address mitigation and emergency management.

**Objective 3 Implement public works projects that improve the protection of important developed areas in the community.**

**Objective 3.1** Implement voluntary and regulated programs to ensure the continued improvement to building structures, locations and on-going emergency planning initiatives that improve the protection of critical infrastructure and county emergency management facilities.

**Objective 3.2** Create a Community Assets Database of all County properties and all properties owned or managed by communities in the multi-jurisdictional mitigation plan.

**Objective 3.3** Continually assess and evaluate the requirements for new structural projects that aid in the reduction of risk to the community.

**4.2 National Flood Insurance Program (NFIP) Compliance**

Saline County and the Cities of Alexander, Benton, Bryant, Haskell, and Shannon Hills; ~~& Traskwood~~ participate in the NFIP, and are in good standing. Information is addressed under the Community Capabilities and NFIP in Section 2.3.1.

The School Districts of Bauxite, Benton and Bryant and Harmony Grove are not required to participate in the NFIP, but they are located in participating cities and are located in the County.

**4.3 Implementation of Mitigation Actions**

The mitigation actions are prioritized based upon their effect on the overall risk to life and property. Ease of implementation, community and agency support and ease of obtaining funding. The County and participating jurisdictions have used the STAPLEE method to prioritize mitigation actions. This method has the benefit that the Mitigation actions are considered in discrete categories of Social, Technical, Administrative, Political, Economic and



Environmental. Prioritization can therefore be made taking each of these categories into account, so that nothing is overlooked when considering which actions may be best for each jurisdiction to consider.

#### Criteria used for prioritization and review of mitigation actions based on STAPLEE

Evaluation Category	Sources of Information
<b>Social</b>	Members of Local governments and the County Government were members of the Hazard Mitigation Planning Team and had input throughout the planning process. It must be noted that many small town political leaders are also business or professional persons. They are also members of the LEPC. Existing community plans were and will be relied on wherever possible. Members of the media were contacted and invited to all attend all HMPT meetings.
<b>Technical</b>	The following persons/agencies were consulted as to the technical feasibility of the various projects: Arkansas Geological Commission, University of Arkansas Extension Service, Arkansas Soil and Water Conservation Commission, Arkansas Health Department, Arkansas Highway and Transportation Department, Arkansas Department of Environmental Quality, Arkansas Governor's Pre-Disaster Advisory Council, Arkansas Governor's Earthquake Advisory Council, and Arkansas Forestry Service. Arkansas Department of Emergency Management. All of these had their comments and suggestions incorporated.
<b>Administrative</b>	Staffing for proper implementation of the plan currently will rely largely on existing members of the various agencies involved. Technical assistance is available from various local and state agencies. Some local jurisdictions have incorporated Hazard Mitigation efforts into their Capital Improvement Plans. Operations costs are under discussion by the appropriate agency or department heads.
<b>Political</b>	The County Quorum Court has passed resolutions in support of mitigation activities involving floodplain ordinances, mitigation planning, and fire districts, among others. The Governor of Arkansas issued an Executive Order in August of 2004 (EO 04-02) instructing all state agencies to assist ADEM in mitigation planning and implementation of mitigation goals.
<b>Legal</b>	Members of the HMPT discussed legal issues, and it was their opinion that no significant legal issues were involved in the projects that were selected by the HMPT. However, where legalities may be an issue, this is noted.
<b>Economic</b>	Economic and benefit cost issues were the predominant topics discussed by all concerned. Each entity felt that the projects selected would have positive effects, but yet realized that actions often have costs, sometimes hidden, imposed on the community, residents and businesses. Funding for the various activities was a major concern as local budgets are always under pressures with existing and competing projects and activities. Where necessary, particularly for costly capital projects, outside grants would be relied on heavily.
<b>Environmental</b>	The Arkansas Geological Survey, Arkansas Department of Environmental Quality, Arkansas Forestry Commission, and Arkansas Soil and Water Conservation Commission were all consulted as to the environmental impact of the various projects and it was felt that there would be no negative impact. Local environmental issues and concerns were also taken into consideration.

There were no changes to priorities on this update.

The Saline County Office of Emergency Management (SCOEM) will be responsible for evaluating actions among competing actions. The Planning Team prioritized the list of mitigation actions by conducting a cost-benefit review. This review was conducted by; first considering the number of people who would be affected by a chosen project, determining the area the project would cover, considering how critical the structures were within in the project area, and which structure were most critical, and finally how would it benefit the entire community. The CCOES shall evaluate actions based on funding availability, comparative value to mitigation objectives, and consideration of economic benefits and environmental concerns of the communities. Actions are prioritized in three different categories; **High need for immediate action**, **Medium need for action**, **Low lacking in urgency**.

All Saline County actions are the responsibility of the director of Saline County Office of Emergency Management. The Cities of Alexander, Bauxite, Benton, and Bryant's actions are the responsibility of their Mayors. The School Districts of Bauxite, Benton and Bryant and Harmony Grove will be the responsibility of their Board Administration.

The Responsible Agency for each mitigation action will identify resources. Their responsibility will be to examine resources from all levels of government. The responsible parties will integrate the requirements of the mitigation plan into other plans when appropriate. This also, includes funding and support for enacting and enforcing building codes and zoning ordinances, and developing public education programs to alert residents to risks and how they can reduce hazard losses. Plans will be made to earmark resources for implementing these actions.

Each jurisdiction and school district within the County that participated in the planning process has at least two actions that will benefit the jurisdiction.

For the purpose of developing the Saline County Hazard Mitigation Plan, mitigation actions are categorized into six groups;

- Actions that will keep problems from getting worse (Prevention).
- Actions that address individual buildings (Property protection)
- Actions that will inform the public (Public education and awareness)
- Actions that will protect natural resources (Natural resource protection)
- Actions that will protect emergency services before, during, and immediately after an occurrence (Emergency services protection)
- Actions that will control the hazard (Structural projects)

#### 4.4 Mitigation Actions/Projects

Mitigation Actions
<p><b><i>M-1 Construct safe rooms within new and existing public buildings, such as schools, libraries, and community centers.</i></b>  <b>Associated Hazard:</b> Thunderstorm Winds, Tornado  <b>Type of Action:</b> Structural Project  <b>Contribution to Mitigation Objective:</b> Prevent the loss of life by providing shelter during pre/post disasters.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Prevents the loss of life during storms and also minimizes the effects post hazard events. Ranked high due to past storm events  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> HMGP, PDM funding  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-2 Acquire generators for all Saline County shelters, city halls, emergency operations centers, and other critical facilities that do not presently have them to maintain power and water during disasters (protect against further damage)</i></b>  <b>Associated Hazard:</b> Earthquake, Flood, Dam Failure, Severe Thunderstorm, Hail, Lightning, Tornado, Winter Storm, Wildfire, Drought, High Winds, Extreme Heat.  <b>Type of Action:</b> Structural &amp; Prevention  <b>Contribution to Mitigation Objective:</b> Prevent loss of critical functions.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Provides necessary facility and equipment capabilities for administrators, first responders, and life-saving facilities.  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> HMGP, State grant funds, local resources  <b>Responsible Party:</b> All participating jurisdictions.  <b>Action adopted by:</b> All participating jurisdictions.  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>W-1 Adopt codes to require homeowners to clear dead vegetation which can fuel wildfires, ensuring that structures are surrounded by defensible space buffer zones</i></b>  <b>Associated Hazard:</b> Wildfire  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Reduce structures' vulnerability to wildfires.  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County &amp; participating cities</p>

<p><b>Action adopted by:</b> Saline County &amp; participating Cities  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-3 Adopt manufactured home regulations to ensure use of tie-downs and anchoring in new buildings and existing mobile structures.</i></b>  <b>Associated Hazard:</b> Tornado, High Winds, Earthquake  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Lessen or eliminate damage from earthquakes and tornadoes to new and existing buildings  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County &amp; participating cities  <b>Action adopted by:</b> Saline County &amp; participating Cities  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-4 Study efficacy of tornado warning sirens while continually monitor siren status.</i></b>  <b>Associated Hazard:</b> Earthquake, Flood, Dam Failure, Severe Thunderstorm, Hail, Lightning, Tornado, Winter Storm, Wildfire, Drought, High Winds, Extreme Heat  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> High  <b>Rationale of Priority:</b> GIS best technology for risk identification and assessment (NFIP consideration: CRS 610 Flood warning Program)  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County &amp; participating cities  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-5 Acquire all-hazard radios for all schools, city halls, large businesses, churches, and other locations where large numbers of people congregate and how to obtain them.</i></b>  <b>Associated Hazard:</b> Tornado, Flood Severe Winter Weather, Wildland Fire, Thunderstorms, Dam Failure, Earthquake Dam Failure, High Winds, Extreme Heat  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Lessen or eliminate damage from earthquakes and tornadoes to new and existing buildings  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County &amp; participating cities  <b>Action adopted by:</b> Saline County &amp; participating Cities  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-6 Ensure proposed mitigation projects are in conformance with the State of Arkansas Hazard Mitigation Plan and State mitigation priorities.</i></b>  <b>Associated Hazard:</b> Tornado, Flood Dam Failure, Severe Winter Weather, High Winds, Wildland Fire, Thunder Storms, Drought, Earthquake)  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Public Education and Awareness  <b>Priority:</b> High  <b>Rationale of Priority:</b> Provides legal justification for mitigation activities  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>



***F-1 Complete a study to determine vulnerability and losses due to dam failure.***

**Associated Hazard:** Dam Failure, Flood

**Type of Action:** Prevention

**Contribution to Mitigation Objective:** Protect against loss of life and property.

**Priority:** High

**Rationale of Priority:** Lessen or eliminate damage from earthquakes and tornadoes to new and existing buildings

**Addresses New or Existing buildings:** New and Existing

**Cost Benefit:** Benefits outweighs cost. Possible grants for construction.

**TimeLine:** Ongoing

**Projected Resources:** Existing County and Local Resources

**Responsible Party:** All participating jurisdictions

**Action adopted by:** All participating jurisdictions

**STAPLEE:** Meets all Criteria

***F-2 Acquire structures that have or may potentially experience flooding in the future from flooding or dam failure.***

**Associated Hazard:** Flood, Dam Failure

**Type of Action:** Property Protection & Structural

**Contribution to Mitigation Objective:** Protect against loss of life and property.

**Priority:** High

**Rationale of Priority:** Lessen or eliminate damage from flooding

**Addresses New or Existing buildings:** New and Existing

**Cost Benefit:** Benefits outweighs cost. Possible grants for construction.

**TimeLine:** 2 years

**Projected Resources:** Existing County and Local Resources

**Responsible Party:** Saline County & participating Cities for flooding

**Action adopted by:** Saline County & participating Cities for flooding

**STAPLEE:** Meets all Criteria

***F-3 Provide support for structural and non-structural mitigation measures for properties in the 1%-annual-chance floodplain.***

**Associated Hazard:** Flood

**Type of Action:** Property Protection

**Contribution to Mitigation Objective:** Protect against loss of life and property.

**Priority:** High

**Rationale of Priority:** Lessen or eliminate damage from flooding

**Addresses New or Existing buildings:** New and Existing

**Cost Benefit:** Benefits outweighs cost. Possible grants for construction.

**TimeLine:** Ongoing

**Projected Resources:** Existing County and Local Resources

**Responsible Party:** Saline County & participating cities

**Action adopted by:** Saline County & participating Cities

**STAPLEE:** Meets all Criteria

***F-4 Mitigate flooding along Old Hwy 291 and the Saline River. Water overflows the road before the bridge. Flooding can be eliminated by elevating the roadway before the bridge.***

**Associated Hazard:** Flood

**Type of Action:** Structural Project

**Contribution to Mitigation Objective:** Protect against loss of life and property.

**Priority:** High

**Rationale of Priority:** Lessen or eliminate damage from flooding

**Addresses New or Existing buildings:** New and Existing

**Cost Benefit:** Benefits outweighs cost. Possible grants for construction.

**TimeLine:** 1 year

**Projected Resources:** Existing County and Local Resources

**Responsible Party:** Saline County

**Action adopted by:** Saline County

**STAPLEE:** Meets all Criteria

***F-5 Mitigate Flooding along South Sardis and Hurricane Creek. Creek overflows the road before the bridge. Roadway needs to be elevated.***

**Associated Hazard:** Flood

**Type of Action:** Structural Project

**Contribution to Mitigation Objective:** Protect against loss of life and property.

<p><b>Priority:</b> High  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> 1 year  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-7 Make the current version of the Saline County Hazard Mitigation Plan is easily accessible to the general public (e.g., online, in local libraries) for Public Input on Plan Update.</i></b>  <b>Associated Hazard:</b> Tornado, Flood, Dam Failure, Severe Winter Weather, High Winds, Wildland Fire, Thunderstorms, Drought, Earthquake  <b>Type of Action:</b> Public education &amp; awareness  <b>Contribution to Mitigation Objective:</b> Involves Ongoing efforts on mitigation.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Lessen or eliminate damage from earthquakes and tornadoes to new and existing buildings  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County &amp; participating cities  <b>Action adopted by:</b> Saline County &amp; participating Cities  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-6 Mitigate flooding along Westbrook Road and Alum Fork Creek. Creek overflows the bridge. Must install larger bridge and raise elevation of bridge and road.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural projects  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-8 Mitigate flooding along Goosepond Road and Middle Fork. Water overflows road obstructing access. Must raise roadway before bridge.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural projects  <b>Contribution to Mitigation Objective:</b> Provides access for response and for mitigation activities.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-9 Mitigate flooding at Mt. Ida Road and Slum Fork. Creek overflow roadway flooding before bridge. Bridge needs elevated, increase opening of bridge and raise roadway.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural projects  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> High  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing</p>

<p><b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.</p> <p><b>TimeLine:</b> Ongoing</p> <p><b>Projected Resources:</b> Existing County and Local Resources</p> <p><b>Responsible Party:</b> Saline County</p> <p><b>Action adopted by:</b> Saline County</p> <p><b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-10 Mitigate flooding at Sulphur Springs Road along wet weather branch. Water overflows roadway at culvert. Upgraded culver needed as well as elevation of roadway.</i></b></p> <p><b>Associated Hazard:</b> Flood</p> <p><b>Type of Action:</b> Structural projects</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p> <p><b>Priority:</b> High</p> <p><b>Rationale of Priority:</b> Lessen or eliminate damage from flooding</p> <p><b>Addresses New or Existing buildings:</b> New and Existing</p> <p><b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.</p> <p><b>TimeLine:</b> Ongoing</p> <p><b>Projected Resources:</b> Existing County and Local Resources</p> <p><b>Responsible Party:</b> Saline County</p> <p><b>Action adopted by:</b> Saline County</p> <p><b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-11 Flood-proof any outdoor recreational facilities that are on the eastern edge of the district's property near the football field.</i></b></p> <p><b>Associated Hazard:</b> Flood</p> <p><b>Type of Action:</b> Structural</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p> <p><b>Priority:</b> Low</p> <p><b>Rationale of Priority:</b> Lessen or eliminate damage from flooding</p> <p><b>Addresses New or Existing buildings:</b> New and Existing</p> <p><b>Cost Benefit:</b> Benefits outweighs cost.</p> <p><b>TimeLine:</b> 1 year</p> <p><b>Projected Resources:</b> Existing Resources</p> <p><b>Responsible Party:</b> Benton Schools</p> <p><b>Action adopted by:</b> Benton Schools</p> <p><b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>W-2 Improve risk assessment by determining losses due to wildland fires in the County.</i></b></p> <p><b>Associated Hazard:</b> Wildfire</p> <p><b>Type of Action:</b> Structural projects</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p> <p><b>Priority:</b> High</p> <p><b>Rationale of Priority:</b> Lessen or eliminate damage from wildfires</p> <p><b>Addresses New or Existing buildings:</b> New and Existing</p> <p><b>Cost Benefit:</b> Benefits outweighs cost.</p> <p><b>TimeLine:</b> 2 years</p> <p><b>Projected Resources:</b> Existing County and Local Resources</p> <p><b>Responsible Party:</b> Saline County &amp; participating cities</p> <p><b>Action adopted by:</b> Saline County &amp; participating cities</p> <p><b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>W-3 Join Fire Wise program.</i></b></p> <p><b>Associated Hazard:</b> Wildfire</p> <p><b>Type of Action:</b> Prevention</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p> <p><b>Priority:</b> High</p> <p><b>Rationale of Priority:</b> Lessen or eliminate damage from wildfire</p> <p><b>Addresses New or Existing buildings:</b> New and Existing</p> <p><b>Cost Benefit:</b> Benefits outweighs cost.</p> <p><b>TimeLine:</b> Ongoing</p> <p><b>Projected Resources:</b> Existing County and Local Resources</p> <p><b>Responsible Party:</b> Saline County &amp; participating cities</p> <p><b>Action adopted by:</b> Saline County &amp; participating cities</p> <p><b>STAPLEE:</b> Meets all Criteria</p>



<p><b><i>F-12 Mitigate Flooding in The City of Benton along Salt Creek in the Hidden Valley Subdivision. The Saline river backs up into Salt Creek causing it to overflow its banks. At this time the only solution to the flooding would be to re-locate the houses out of the area.</i></b></p> <p><b>Associated Hazard:</b> Flood</p> <p><b>Type of Action:</b> Structural projects</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p> <p><b>Priority:</b> High</p> <p><b>Rationale of Priority:</b> Lessen or eliminate damage from flooding</p> <p><b>Addresses New or Existing buildings:</b> New and Existing</p> <p><b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.</p> <p><b>TimeLine:</b> Ongoing</p> <p><b>Projected Resources:</b> Existing County and Local Resources, HMGP, PDM, FMA</p> <p><b>Responsible Party:</b> City of Benton</p> <p><b>Action adopted by:</b> City of Benton</p> <p><b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-8 Bury or otherwise protect electric and other utility lines.</i></b></p> <p><b>Associated Hazard:</b> Tornado, Severe Winter Weather, High Winds, Wildfire, Thunderstorms</p> <p><b>Type of Action:</b> Structural projects</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p> <p><b>Priority:</b> Medium</p> <p><b>Rationale of Priority:</b> Lessen or eliminate damage from flooding</p> <p><b>Addresses New or Existing buildings:</b> New and Existing</p> <p><b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.</p> <p><b>TimeLine:</b> Ongoing</p> <p><b>Projected Resources:</b> Existing County and Local Resources</p> <p><b>Responsible Party:</b> All participating jurisdictions</p> <p><b>Action adopted by:</b> All participating jurisdictions</p> <p><b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>D-1 Complete a study to determine losses in Saline County due to drought.</i></b></p> <p><b>Associated Hazard:</b> Drought</p> <p><b>Type of Action:</b> Prevention</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p> <p><b>Priority:</b> Medium</p> <p><b>Rationale of Priority:</b> Lessen or eliminate damage from flooding</p> <p><b>Addresses New or Existing buildings:</b> New and Existing</p> <p><b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.</p> <p><b>TimeLine:</b> Ongoing</p> <p><b>Projected Resources:</b> Existing County and Local Resources</p> <p><b>Responsible Party:</b> Saline County &amp; all participating cities</p> <p><b>Action adopted by:</b> Saline County &amp; all participating cities</p> <p><b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>W-4 Regulate development in wildfire hazard areas through land use planning to address density and quantity of development as well as emergency access, landscaping, and water supply to better mitigate wildfire vulnerability. School districts can chose to conduct the same type of mitigation efforts.</i></b></p> <p><b>Associated Hazard:</b> Wildfire</p> <p><b>Type of Action:</b> Prevention</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p> <p><b>Priority:</b> Medium</p> <p><b>Rationale of Priority:</b> Lessen or eliminate damage from wildfire</p> <p><b>Addresses New or Existing buildings:</b> New and Existing</p> <p><b>Cost Benefit:</b> Benefits outweighs cost.</p> <p><b>TimeLine:</b> Ongoing</p> <p><b>Projected Resources:</b> Existing County and Local Resources</p> <p><b>Responsible Party:</b> All participating jurisdictions</p> <p><b>Action adopted by:</b> All participating jurisdictions</p> <p><b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>W-5 Develop neighborhood wildfire safety coalitions</i></b></p> <p><b>Associated Hazard:</b> Wildfire</p> <p><b>Type of Action:</b> Prevention</p> <p><b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.</p>

<p><b>Priority:</b> Medium  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> N/A  <b>Cost Benefit:</b> Benefits outweighs cost.  <b>TimeLine:</b> 3 years  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-9 Develop brochures, a website, educational programs, and public services announcements to increase public awareness of hazards to which Saline County residents are exposed and potential mitigation measures that may be undertaken.</i></b>  <b>Associated Hazard:</b> Tornado, Flood, Dam Failure, Severe Winter Weather, High Winds, Wildland Fire, Thunderstorms, Drought, Earthquake, Extreme Heat  <b>Type of Action:</b> Public Education &amp; Awareness  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Medium  <b>Rationale of Priority:</b> Links mitigation with preparedness  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-13 Mitigate flooding at Vimey Ridge and West weather branch. Water overflows roadway. Upgrade existing pipe.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural projects  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Medium  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-14 Mitigate flooding on Hensley Mail Route and Wet weather Branch. Water overflows roadway. Upgrade existing pipe.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural projects  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Medium  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M- 10 Identify and maintain alternative water resources in neighborhoods (small ponds, cisterns, wells, pools, hydrants, etc) Thus relieving impacts on agriculture and livestock.</i></b>  <b>Associated Hazard:</b> Drought, Wildfire, Dam Failure  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Medium  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding</p>

<p><b>Addresses New or Existing buildings:</b> N/A  <b>Cost Benefit:</b> Benefits outweighs cost.  <b>TimeLine:</b> 1 year  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County &amp; participating cities  <b>Action adopted by:</b> Saline County &amp; participating cities  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-11 Include mitigation awareness efforts in all SCLEPC and Inter-governmental Council meetings..</i></b>  <b>Associated Hazard:</b> Tornado, Flood, Dam Failure, Severe Winter Weather, High Winds, Wildland Fire, Thunderstorms, Drought, Earthquake, Extreme Heat  <b>Type of Action:</b> Public Education and Awareness  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost.  <b>TimeLine:</b> 1 year  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-15 Mitigate flooding at South Sardis Road and West weather branch. Roadway needs to be elevated and culvert needs upgraded to a larger size.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural Project  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-16 Mitigate flooding at Shaw Bridge Road and the Saline River. Elevating the roadway would eliminate the problem.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural project  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-17 Mitigate flooding at Samples Road and Hurricane Creek. The creek overflows its banks and floods the road obstructing access to the bridge. Road and Bridge needs to be elevated.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural Project  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County</p>



<p><b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p> <p><b><i>F-18 Mitigate flooding at Shimrod Road and Dry Creek. During large rain events, the creek will overflow the banks and flood the roadway. Roadway needs to be elevated as well as the opening of the bridge needs increased.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural Project  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-19 Mitigate flooding at East Avilia and Hurricane Creek. Creek overflows roadway. Roadway needs elevated and culverts need upgraded to a larger size.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural Project  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources. Possible grant funds.  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-20 Adopt zoning laws and floodplain development regulations that, at a minimum, meet the State and federal requirements..</i></b>  <b>Associated Hazard:</b> Flood, Dam failure  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> City of Bauxite &amp; Traskwood  <b>Action adopted by:</b> City of Bauxite &amp; Traskwood  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-21 Design and implement in-stream erosion reduction program.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Property protection  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County &amp; participating cities  <b>Action adopted by:</b> Saline County &amp; participating cities  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-22 Mitigate flooding along Depot Creek at Market Street, Hwy 35 and Edison Ave. The creek needs to be cleaned out from one end to the other. The state is looking at upgrading the existing culverts.</i></b>  <b>Associated Hazard:</b> Flood</p>

<p><b>Type of Action:</b> Structural Project  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources. Possible grant funds  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-23 Mitigate flooding along Brook Rd. in Alexander. Crooked Creek overflows its banks. Road needs to be Raised.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Structural Project  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> 6 months  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>F-24 Mitigate flooding along Peeler Bend Rd. Flooding occurs 1.5 miles off Hwy. 290. Existing culverts need upgraded.</i></b>  <b>Associated Hazard:</b> Flood  <b>Type of Action:</b> Property protection  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources. Possible grant funds  <b>Responsible Party:</b> Saline County  <b>Action adopted by:</b> Saline County  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>D-2 Implement xeriscaping on public facilities.</i></b>  <b>Associated Hazard:</b> Drought  <b>Type of Action:</b> Natural Resources Protection  <b>Contribution to Mitigation Objective:</b> Protect against loss of resource.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate impacts of drought  <b>Addresses New or Existing buildings:</b> N/A  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> 1 year  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>M-12 Remove/trim trees and tree limbs around power lines to help prevent power outages.</i></b>  <b>Associated Hazard:</b> Severe Winter Weather, Tornado, High Winds, Severe Thunderstorm  <b>Type of Action:</b> Emergency Services Protection  <b>Contribution to Mitigation Objective:</b> Protect against loss of power.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate impacts of severe winter weather  <b>Addresses New or Existing buildings:</b> New &amp; Existing  <b>Cost Benefit:</b> Benefits outweighs cost..  <b>TimeLine:</b> Ongoing</p>

<p><b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>D-3 Adopt water conservation measures for localized drought conditions (Irrigation, fixture retrofits, etc.).</i></b>  <b>Associated Hazard:</b> Drought  <b>Type of Action:</b> Natural Resources Protection  <b>Contribution to Mitigation Objective:</b> Protect against loss of resource.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate impacts of drought  <b>Addresses New or Existing buildings:</b> N/A  <b>Cost Benefit:</b> Benefits outweighs cost.  <b>TimeLine:</b> 1 year  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>D-4 Adopt water rationing codes to conserve water during times of extreme drought.</i></b>  <b>Associated Hazard:</b> Drought  <b>Type of Action:</b> Natural Resources Protection  <b>Contribution to Mitigation Objective:</b> Protect against loss of resource.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate impacts of drought  <b>Addresses New or Existing buildings:</b> N/A  <b>Cost Benefit:</b> Benefits outweighs cost.  <b>TimeLine:</b> 1 year  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>D-5 Enact measures that require public facilities to install low-flow faucets and fixtures.</i></b>  <b>Associated Hazard:</b> Drought  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against loss of life and property.  <b>Priority:</b> Medium  <b>Rationale of Priority:</b> Lessen or eliminate damage from flooding  <b>Addresses New or Existing buildings:</b> New and Existing  <b>Cost Benefit:</b> Benefits outweighs cost. Possible grants for construction.  <b>TimeLine:</b> Ongoing  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>EH-1 Establish accessible cooling centers/shelters for vulnerable, special-needs and at-risk population.</i></b>  <b>Associated Hazard:</b> Extreme Heat  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against extreme heat.  <b>Priority:</b> Low  <b>Rationale of Priority:</b> Lessen or eliminate impacts of the hazard  <b>Addresses New or Existing buildings:</b> N/A  <b>Cost Benefit:</b> Benefits outweighs cost.  <b>TimeLine:</b> 1 year  <b>Projected Resources:</b> Existing County and Local Resources  <b>Responsible Party:</b> All participating jurisdictions  <b>Action adopted by:</b> All participating jurisdictions  <b>STAPLEE:</b> Meets all Criteria</p>
<p><b><i>EQ-1 Adopt codes/measures that require new construction to evaluate and build structures to better withstand effects of an earthquake.</i></b>  <b>Associated Hazard:</b> Earthquake  <b>Type of Action:</b> Prevention  <b>Contribution to Mitigation Objective:</b> Protect against earthquake.</p>



<b>Priority:</b> Low <b>Rationale of Priority:</b> Lessen or eliminate impacts of the hazard <b>Addresses New or Existing buildings:</b> Both <b>Cost Benefit:</b> Benefits outweighs cost. <b>TimeLine:</b> 1 year <b>Projected Resources:</b> Existing County and Local Resources <b>Responsible Party:</b> All participating jurisdictions <b>Action adopted by:</b> All participating jurisdictions <b>STAPLEE:</b> Meets all Criteria
<b>EQ-2 Conduct non-structural mitigation of public facilities (window film, bracing of cabinets, emergency gas shut-offs, etc)</b> <b>Associated Hazard:</b> Earthquake <b>Type of Action:</b> Prevention <b>Contribution to Mitigation Objective:</b> Protect against earthquake. <b>Priority:</b> Low <b>Rationale of Priority:</b> Lessen or eliminate impacts of the hazard <b>Addresses New or Existing buildings:</b> N/A <b>Cost Benefit:</b> Benefits outweighs cost. <b>TimeLine:</b> 1 year <b>Projected Resources:</b> Existing County and Local Resources <b>Responsible Party:</b> All participating jurisdictions <b>Action adopted by:</b> All participating jurisdictions <b>STAPLEE:</b> Meets all Criteria

## SECTION 5      *Acronyms*

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ADA	Average Daily Attendance
ADEM	Arkansas Department of Emergency Management
BCA	Benefit-Cost Analysis
BMPs	Best Management Practices
CFR	Code of Regulations
CRS	Community Rating System
DMA 2000	Disaster Mitigation Act of 2000
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
GIS	Geographic Information System
HMC	Hazard Mitigation Committee
HMGP	Hazard Mitigation Grant Program
IBC	Internal Building Code
FR	Final Rule
LEPC	Local Emergency Planning Committee
MOU	Memorandum of Understanding
NFIP	National Flood Insurance Program
PDM	Pre-Disaster Mitigation Program
PGA	Peak Ground Acceleration

SHMO	State Hazard Mitigation Officer
STAPLEE	Social, Technical, Administrative, Political, Legal, Economic
UCC	Uniform Construction Code
WUI	Wildland Urban Interface
YCOEM	SALINE County Office of Emergency Management
YCOES	SALINE County Office of Emergency Services

## SECTION 6 Plan Adoption

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Attached are approved resolutions the County, cities and school districts passed after FEMA approved the Saline County Hazard Mitigation Plan.

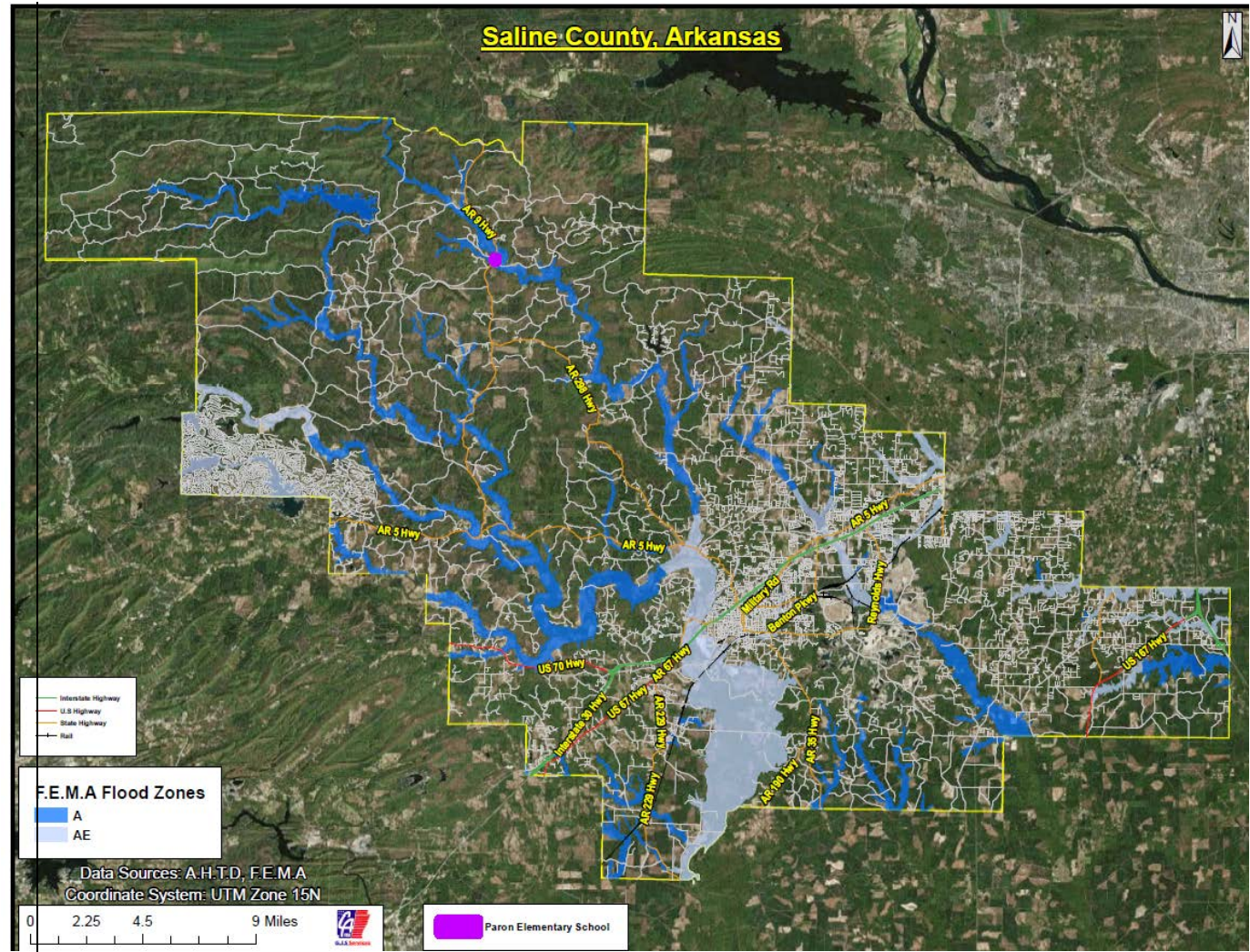
### **6.1 Resolutions**

*(To be added after FEMA approves DRAFT copy of Hazard Mitigation Plan)*

### maps

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Flood Maps: Note\*- School campuses, when applicable are identified on the map with a red block, and have number assigned to each. If there is not enough room on the same page as the map, a list of the school name and corresponding number will be on the following page.

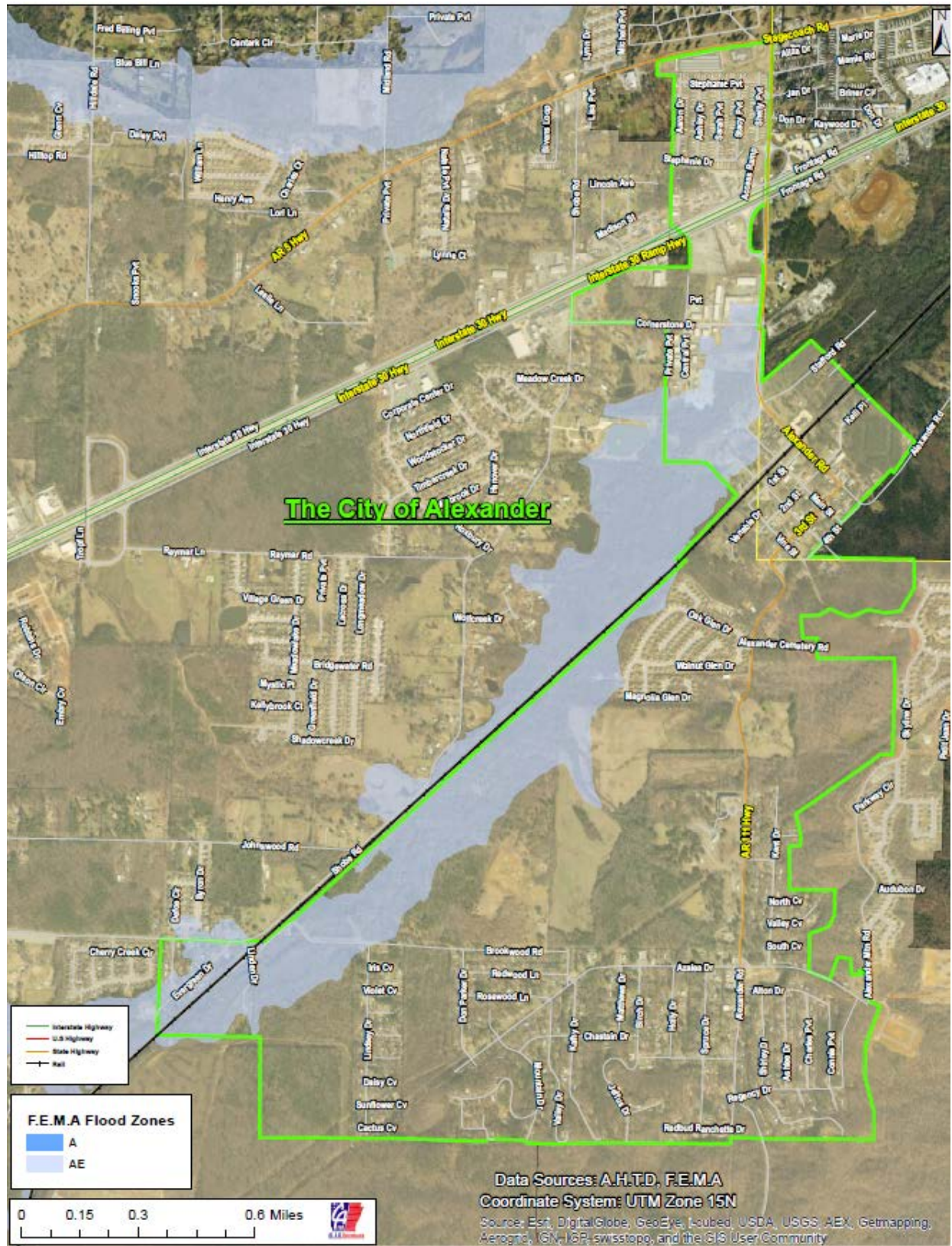


Above you will see a small purple dot for Paron Elementary School (Bryant School District). The following page is a zoomed in map of the school campus.

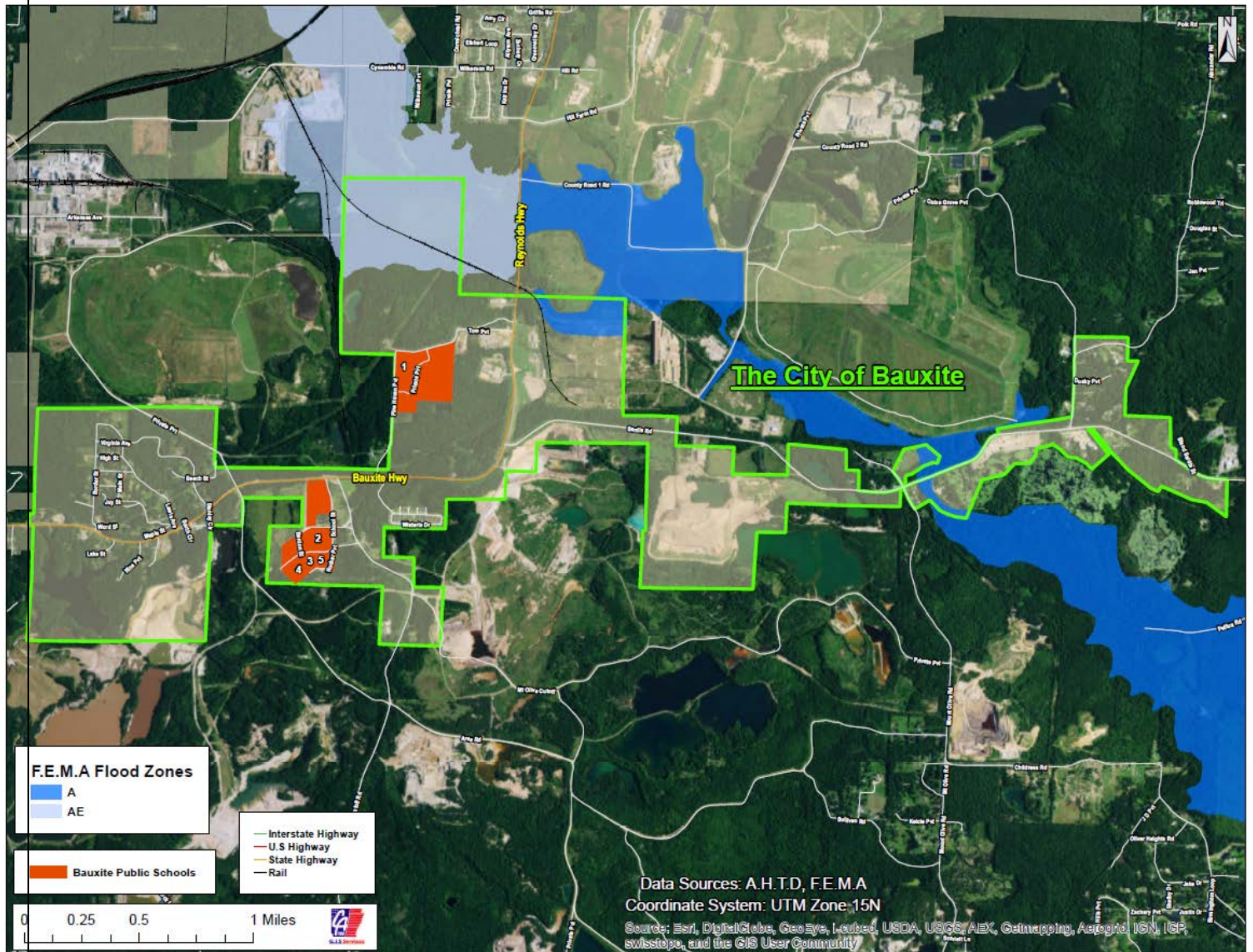








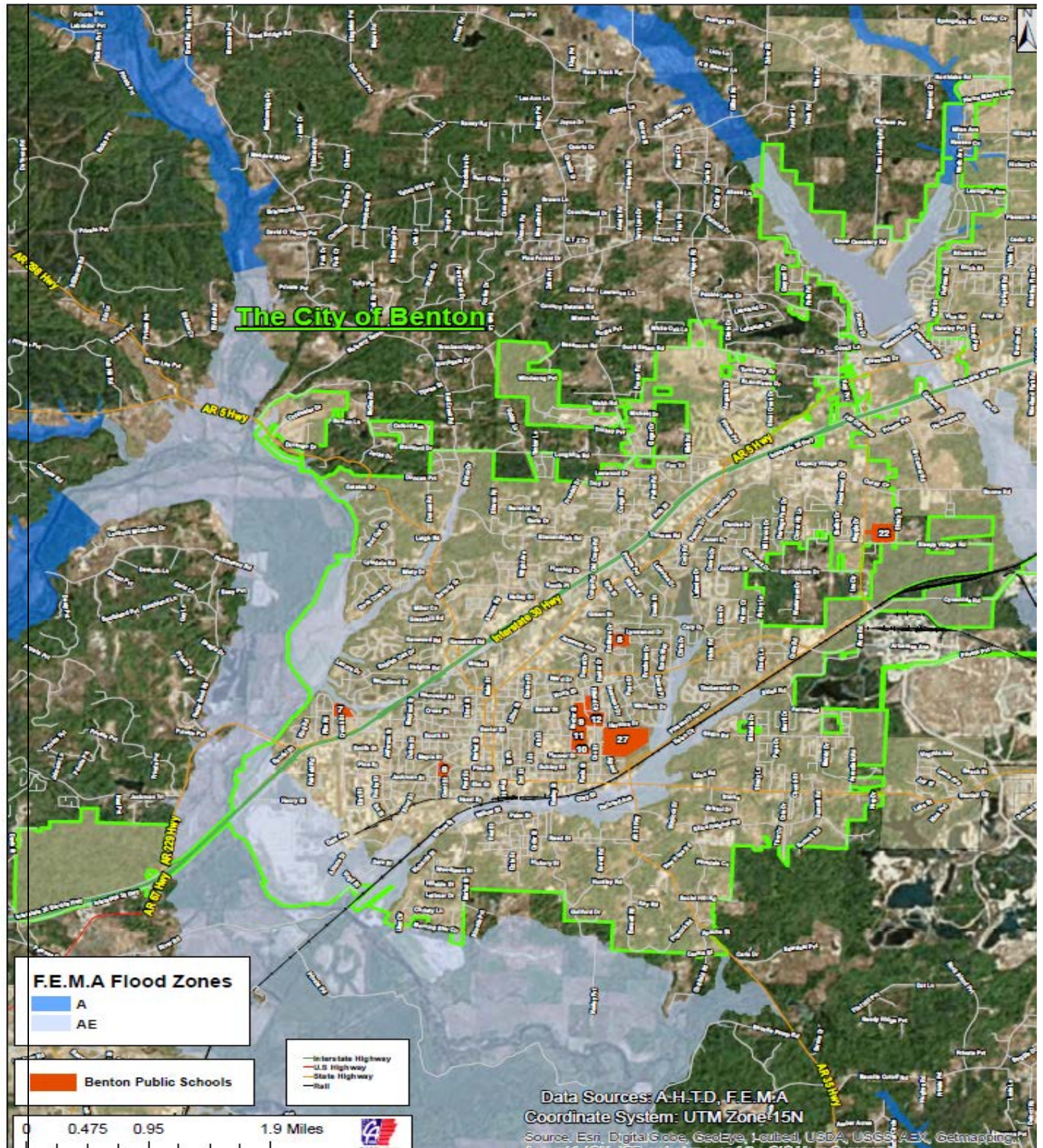




### Bauxite School District

1. Pine Haven Elementary
2. Bauxite Middle School
3. Bauxite High School
4. Miner Academy
5. Also Miner Academy







Benton School District Campuses:

6. Ringgold Elementary

7. Caldwell Elementary

8. Perrin Elementary

9. Benton Jr. High

10. Angie Grant Elementary

11. Benton High School

12. Benton Middle School

22. Hurricane Creek Elementary

27. Benton Schools Sports Complex



Bryant School District Campuses:

13. Bryant Elementary

14. Bryant High School

16. Collegeville Elementary

18. Salem Elementary

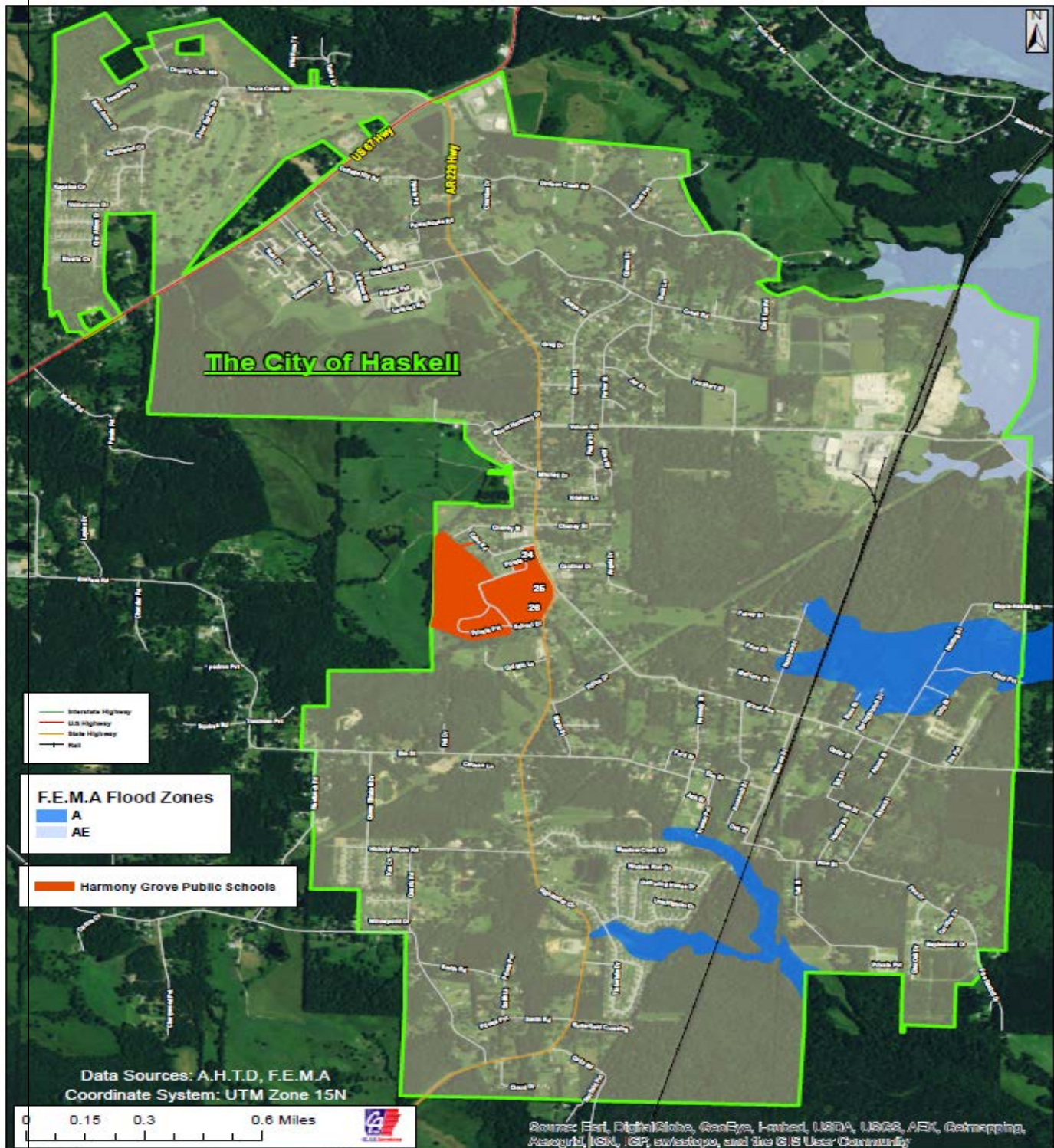
19. Springhill Elementary

20. Hill Farm Elementary

21. Bryant Middle School

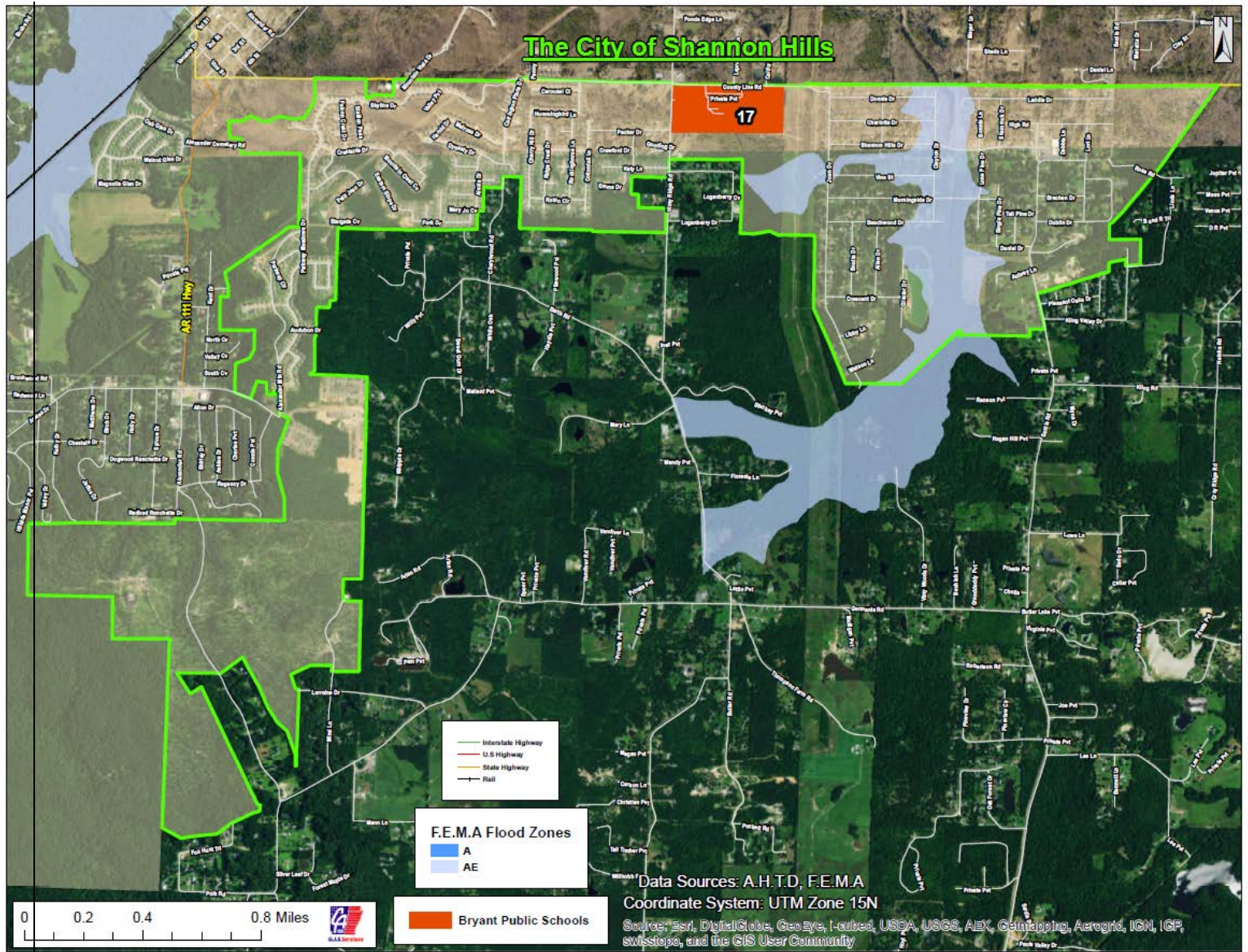
23. Bethel Middle School





Harmony Grove School District: 24. Harmony Grove Middle School; 25. Westbrook Elementary; 26. Harmony Grove High School.

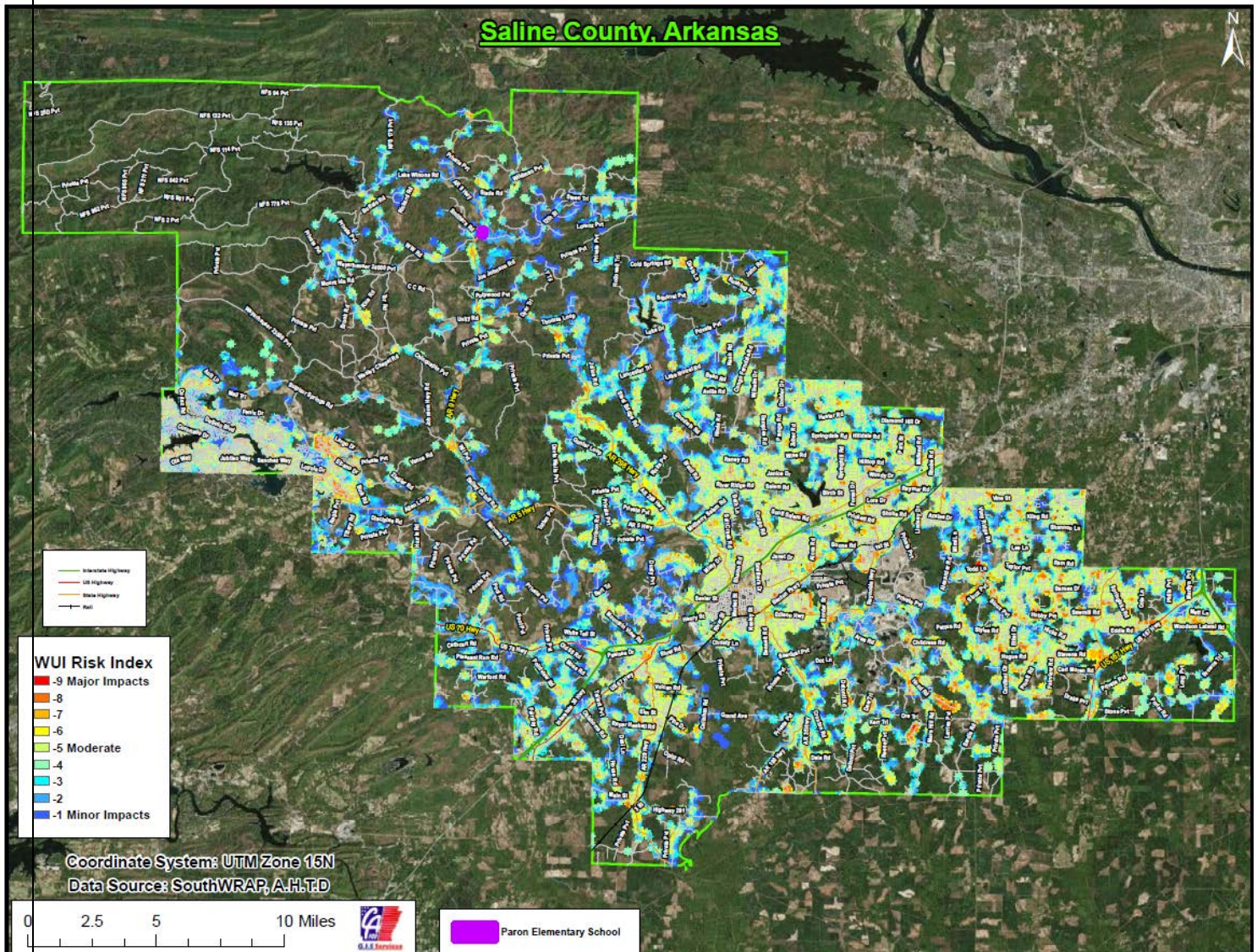




Bryant School District  
17. Robert L. Davis Elementary School



Additional Fire Maps for Paron Elementary School (Bryant School District)



The purple dot signified the location of Paron Elementary within the County. The following page is a zoomed in map of the campus.



