

Newton County Hazard Mitigation Action Plan



Newton County & City of Newton

Version 4.0
September 2022

Developed in accordance with PUBLIC LAW 106-390-OCT. 30, 2000 (Disaster Mitigation Act of 2000), et al. by the Newton County Hazard Mitigation Committee with assistance from Traylor & Associates, Inc.

ACKNOWLEDGEMENTS

Preparation of the Newton County Hazard Mitigation Action Plan (HMAP) Update involved collaboration among public, private, and non-profit organizations.

This project would not have been possible without the work of the Newton County Hazard Mitigation Committee (HMC). Thanks go out to all HMC participants for their efforts to provide accurate and timely information and project ideas throughout the planning and preparation of this plan.

Elected officials and City, County and state personnel participated in the planning process and contributed to the plan's development. Listed below are the official members of the HMC:

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MR. DANNY BENTSEN	Newton County	Precinct 1 Commissioner
MR. PHILIP A. WHITE	Newton County	Precinct 2 Commissioner
MR. GARY FOMBY	Newton County	Precinct 3 Commissioner
MR. GENE THOMPSON	Newton County	Precinct 4 Commissioner
MS. ELIZABETH HOLLOWAY	Newton County	Grants Officer
MS. RHONDA ALFORD	Newton County	Asst. Grants Officer
MR. OLEN BEAN	Newton County	Emergency Management Coordinator
MR. ROBERT BURBY	Newton County	Sheriff
MS. SANDRA K. DUCKWORTH	Newton County	County Clerk
MS. EMILEE GERNGROSS	Texas A&M AgriLife Extension	County Extension Agent
MS. CATHY PEARSON	Texas A&M AgriLife Extension	County Extension Agent
MR. SHANNON POINTHIER	Newton County	IT Administrator
MR. DON ILES	Sabine River Authority	Middle Basin Regional Manager
MR. ANDREW MILLS	Sabine River Authority	Assistant Toledo Bend Administrator
MR. DONNIE MEEK	City of Newton	City Administrator
MR. WILL JACKSON	City of Newton	Police Chief
MR. MARK MCCALL	Emergency Services District #1	Chief
MR. JOHN CLINGAMAN	TDEM	District Coordinator
MR. JOEY DAVIS	Jasper – Newton Electric Cooperative	Assistant General Manager
MR. JESSIE MORGAN	Deep East Texas Electric Cooperative	Director of Engineering
MR. LUKE ALFARO	Texas A&M Forest Service	Forester

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SECTION 1: INTRODUCTION

1.1 BACKGROUND

Newton County, the easternmost County of Texas, is in a region that experiences relatively frequent and devastating natural disasters. Bounded on the north by Sabine County, on the west by Jasper County, on the south by Orange County, and on the east by the Sabine River, which separates the County from the state of Louisiana, Newton County is approximately 150 miles northeast of Houston and 250 miles southeast of Dallas. Though flooding is a well-known risk, Newton County is vulnerable to a wide range of natural hazards, including but not limited to high winds, wildfires, and winter storms. These life-threatening events can destroy property, disrupt the local economy, and lower the overall quality of life for individuals.

The impacts of natural hazards directly affect the safety and well-being of the residents of the planning area, highlighting the importance of developing ways to eliminate or reduce future damages from hazards.

The goal of the Newton County Hazard Mitigation Action Plan is to promote the health, safety, and welfare of all residents and local interests. The purview of this document includes the jurisdiction of Newton County and the City of Newton commonly referred to hereafter as the 'planning area.'

The purpose of mitigation planning in general is to reduce or prevent the negative impacts of future events. The concept could be summarized with the saying, 'an ounce of prevention is worth a pound of cure.' The purpose of mitigation planning as it relates to natural hazards is to prevent injuries, loss of life and material damage via initiative-taking measures. The State of Texas Hazard Mitigation Plan quotes from FEMA's Mitigation Directorate: "Mitigation is the cornerstone of emergency management. It is the ongoing effort to lessen the impact disasters have on people's lives and property through damage prevention and flood insurance. Through measures such as, building safely within the floodplain or removing homes altogether; engineering buildings and infrastructures to withstand earthquakes; and creating and enforcing effective building codes to protect property from floods, hurricanes and other natural hazards, the impact on lives and communities are lessened."

A hazard mitigation plan is distinguishable from an emergency operations plan (EOP) or disaster response plan to the extent that it plans the implementation of mitigation actions prior to a hazard occurrence. Mitigation actions are long-term activities which reduce a community's vulnerability to hazard impact through various means, including avoidance, protection, and preparedness. The Texas Division of Emergency Management (TDEM) is required to review the plan and FEMA has the authority to review and approve hazard mitigation plans through the Disaster Mitigation Act of 2000. The Newton County Hazard Mitigation Action Plan (HMAP, the Plan, or plan) serves in the interest of protecting the public and County assets by reducing the impact of future disasters.

1.2 AUTHORITIES

The Newton County Hazard Mitigation Action Plan was developed in accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), which is the primary authority for providing federal disaster recovery and hazard mitigation financial assistance to states and local governments. The Stafford Act was last amended in October 2000 by Public Law (PL) 106-390 (Disaster Mitigation Act of 2000) and incorporated as federal rules in Code of Federal Regulations (CFR) 44.

Program requirements related to hazard mitigation are included in 44 CFR Parts 9, 10, 13, 14, 78, 201 and 206. Federal regulatory authority for hazard mitigation planning in Texas resides with FEMA VI.

The Texas Disaster Act of 1975, V.T.C.A., Government Code, Chapter 418 and Executive Order of the Governor pertaining to Emergency Management are the primary authorizing statutes at the state level. State regulatory authority for hazard mitigation planning resides with the Texas Division of Emergency Management (TDEM), Mitigation Section.

Additionally, the HMAP complies with standards outlined in both FEMA's "Local Mitigation Plan Review Guide" (October 2011) and the "Local Mitigation Planning Handbook" (March 2013).

Local authority for hazard mitigation resides with the County Judge, who reserves the right to appoint a County Hazard Mitigation Officer to direct the activities under the purview of this Plan.

1.3 LOCAL ADOPTION

44 CFR 201.6(c) Plan content. The plan must include the following:

- (5) Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

Newton County and the City of Newton have adopted this plan. Copies of the local adoption instruments for each participating jurisdiction will be included in Appendix A of this document.

1.4 SUMMARY OF SECTIONS

This document is structured to match the required elements for hazard mitigation plans under federal and state requirements. It consists of eight sections, each of which satisfies a specific grouping of requirements as described in the *Local Mitigation Planning Handbook* published by FEMA in March of 2013. Code of Federal Regulations (CFR) requirement(s) pertaining to each respective plan section is included below the corresponding section heading. Tables, figures, and charts are numbered in order of appearance within each chapter.

Section 1 includes the prerequisites for hazard mitigation plans and describes the purpose, authorities, and process of local adoption.

Section 2 describes the process through which this plan was developed, via planning committee and public meetings, and input from citizens and regional stakeholders. Section 2 also describes approach to plan maintenance, which includes process for local adoption, evaluation criteria, and implementation timeline.

Section 3 provides general profiles of the participating jurisdictions, Newton County, and the City of Newton.

Section 4 includes the risk and vulnerability assessments for the County and participating jurisdictions, describing the hazards that occur in the deep east Texas region, and an inventory of local assets and critical facilities that represent varying degrees of vulnerability to hazard impacts.

Section 5 presents a hazard overview and information on individual natural hazards in the planning area. The hazards appear in order of priority based on potential losses to life and property, and other

community concerns. For each hazard, the Plan Update presents a description of the hazard, a list of historical hazard events, and the results of the vulnerability and risk assessment process.

Section 6 gives an analysis for the previous Plan's actions, including designations of Deferral or Deletion. Section 7 addresses the participating jurisdictions' mitigation strategy and represents this Plan's primary function moving forward. It outlines the Plan's overarching goals and the actionable items and projects that the participating jurisdictions intend to implement. Section 7 also addresses National Flood Insurance Program (NFIP) involvement.

Section 8 identifies Plan maintenance mechanisms, including monitoring and update schedules and continued public involvement.

Local adoption instruments are found in Appendix A. Public survey results are analyzed and presented in Appendix B. Appendix C contains a detailed list of critical facilities for the planning area. Appendix D contains information regarding workshops and meeting documentation. Appendix E contains FEMA FIRM (Flood Insurance Rate Map) Panels for the planning area.

1.5 2022 UPDATE – VERSION 4.0

This multi-jurisdiction hazard mitigation plan is an update of the existing Hazard Mitigation Action Plan for Newton County. The initial version of the document was adopted in 2005 and was one of the first hazard mitigation documents approved in the State of Texas. The second version of this document was developed and approved in 2011-12. The third version of this document was developed and approved in 2017.

The Disaster Mitigation Act of 2000 requires that hazard mitigation plans be reviewed and revised every five years to maintain eligibility for Hazard Mitigation Assistance (HMA) grant funding. This is the fourth version of the Newton County multi-jurisdiction Hazard Mitigation Action Plan (Version 4.0).

Profiles of the participating jurisdictions were updated, and recent hazard events incorporated into the current document. New action items prioritized by the Hazard Mitigation Team are developed for this updated document. Modifications were made to the document structure and formatting to provide clarity and assist reference and review. A detailed description of revisions to update this hazard mitigation plan is provided in Section 2.5.

1.6 PARTICIPATING JURISDICTIONS

44 CFR 201.6(a) Plan requirements. The plan must include the following:

- (1) A local government must have a mitigation plan approved pursuant to this section in order to receive HMGP project grants. A local government must have a mitigation plan approved pursuant to this section in order to apply for and receive mitigation project grants under all other mitigation grant programs.

The planning area is defined by the boundaries of the following governmental entities and remains the same from previous versions of the Plan. Each jurisdiction participated in the development of this plan and has been adopted by each of the respective governing bodies:

Newton County

City of Newton

SECTION 2: PLANNING PROCESS

44 CFR 201.6(c) Plan content. The plan must include the following:

- (1) Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Update of the Hazard Mitigation Plan for Newton County and the City of Newton marked the completion of the third full planning cycle. During the first planning cycle 2005-2010 and second planning cycle 2011-2016, mitigation projects were successfully implemented despite the occurrence of a series of major disasters. The 2017-2021 planning cycle saw the occurrence of several unprecedented disasters, including the COVID-19 Pandemic and the 2021 North American Winter Storm, Uri. These extraordinary events provided the backdrop for numerous conversations leading up to this Version 4.0 update.

Removal, revision, and addition of Action Items in Sections 6 and 7 reflect changes in community priorities and concerns. A recurrence of tropical storms and hurricanes resulted in a prioritization of flood and drainage improvements in areas of critical concern. The COVID-19 Pandemic mentioned in the above paragraph changed the landscape of community healthcare and communicable disease prevention across the globe. Newton County was no exception to this. A target of this update is to amend the plan to better reflect the current and anticipated future hazard concerns of the planning area.

Newton County played the lead role in initiating the update of this plan. Funding for the project was secured through the work of the County Judge and staff in coordination with Texas Division of Emergency Management (TDEM). Traylor and Associates, Inc. was procured for the application and management of a FEMA Building Resilient Infrastructure and Communities (BRIC) grant. This grant provided the federal share of proceeds. The local matching contribution was funded through a Texas General Land Office (GLO) grant. Upon awarding of the grant, Traylor and Associates, Inc. began the process to update the Hazard Mitigation Action Plan document to meet new federal standards, incorporate current information, and include new mitigation ideas and priorities.

The planning process followed a nine-step outline prescribed in FEMA publication, Local Mitigation Planning Handbook (2013):

1. Determine the Planning Area and Resources
2. Build Planning Team
3. Create an Outreach Strategy
4. Review Community Capabilities
5. Conduct a Risk Assessment
6. Develop a Mitigation Strategy
7. Keep the Plan Current
8. Review and Adopt the Plan
9. Create a Safe and Resilient Community

Like previous versions of the plan, the participating jurisdictions are limited to Newton County and the City of Newton; the City of Newton being the only incorporated City within the County.

The second step was addressed by assembling the Hazard Mitigation Committee as coordinated by the executive committee and project consultant.

To achieve the outreach strategy of including neighboring communities, agencies, businesses, academia, non-profits, and interested parties in the planning process, invitation letters were distributed to identified key representatives of the Stakeholders listed in Section 2.3

A survey was developed and distributed on the official websites and social media pages of the participating jurisdictions. Results from the survey were analyzed by the Committee and provided insight to the key past experiences and future concerns of local citizens.

Task four, the review of community capabilities, was a focal point in the public meetings. Committee members discussed the current capabilities and shortfalls of local regulatory and economic infrastructure. The sourcing of future grant and other funding opportunities was stressed during talks of the prioritization of action items.

As mentioned above, the previous planning cycle saw the occurrence of unprecedented natural disasters. The participating jurisdictions identified two (2) new hazards to the community that were not considered in previous plans, including Pandemics and Cyber Attacks. Version 3.0 of this Plan flagged Winter Storms as having a High Probability of future occurrence. That was certainly evident.

A risk assessment was conducted to determine the potential impacts of identified hazards to the people, economy, and environments of the participating jurisdictions. This risk assessment provided the foundation for Task 6 and the development of a mitigation strategy.

Development of a mitigation strategy was coordinated by the project consultant and included the input from the committee and data sources. Action item development and prioritization for the mitigation plan emphasized a review of costs vs. benefits and the social, technical, administrative, political, legal, economic, and environmental considerations of mitigation related projects. Plan update/development involved preparing a public review draft and a two-week public comment period to solicit and collect input from the Hazard Mitigation Committee and interested parties. Comments and recommendations from these sources were incorporated into the last version of the Hazard Mitigation Plan submitted to the State and FEMA and adopted by the participating jurisdictions.

A successful plan is a living document. Plan implementation and monitoring will occur on an ongoing and annual basis as action items are applied and developed, following major disaster events and during annual plan review meetings of the Hazard Mitigation Committee.

Adoption of the approved plan by the participating jurisdictions is the first step toward implementing the plan. Prior to adoption, the plan was submitted to TDEM, which serves as the State Hazard Mitigation Officer (SHMO). Upon review, any required revisions were addressed prior to State approval. Once the State has been satisfied, FEMA's review began. Local adoption of the plan occurred upon receipt of FEMA's Approvable Pending Adoption notice and adoption documents are recorded in Appendix A of the Plan.

Proactive policies and actions reduce risk and future losses. The Texas Department of Emergency Management (TDEM) likes to say, "Recovery begins today." Feasibility study and mitigation project scoping are integral steps in this process, followed by grant writing coordinated through TDEM to secure funding and the implementation of projects to create a safe and resilient community.

2.1 HAZARD MITIGATION COMMITTEE

As previously mentioned in the Acknowledgements section, the HMC was comprised of representatives from the participating jurisdictions. Together with the Stakeholders listed in Section 2.3 below, they make up the Hazard Mitigation Team. Professional fields represented by the HMC include Administrative Services, Planning and Community Development, Emergency Response and Preparedness, Floodplain Management, Geographic Information Systems, Hazard Mitigation, Public Works, and Engineering. The table of participating members can be found again below:

REPRESENTATIVE	AGENCY/ORGANIZATION	TITLE/POSITION
HON. KENNETH WEEKS	Newton County	County Judge
MR. DANNY BENTSEN	Newton County	Precinct 1 Commissioner
MR. PHILIP A. WHITE	Newton County	Precinct 2 Commissioner
MR. GARY FOMBY	Newton County	Precinct 3 Commissioner
MR. GENE THOMPSON	Newton County	Precinct 4 Commissioner
MS. ELIZABETH HOLLOWAY	Newton County	Grants Officer
MS. RHONDA ALFORD	Newton County	Assistant Grants Officer
MR. OLEN BEAN	Newton County	Emergency Management Coordinator
MR. ROBERT BURBY	Newton County	Sheriff
MS. SANDRA K. DUCKWORTH	Newton County	County Clerk
MS. EMILEE GERNGROSS	Texas A&M AgriLife Extension	County Extension Agent
MS. CATHY PEARSON	Texas A&M AgriLife Extension	County Extension Agent
MR. SHANNON POINTHIER	Newton County	IT Administrator
MR. DON ILES	Sabine River Authority	Middle Basin Regional Manager
MR. ANDREW MILLS	Sabine River Authority	Assistant Toledo Bend Administrator
MR. DONNIE MEEK	City of Newton	City Administrator
MR. WILL JACKSON	City of Newton Police Department	Police Chief
MR. MARK MCCALL	Emergency Services District #1	Chief
MR. JOHN CLINGAMAN	TDEM	District Coordinator
MR. JOEY DAVIS	Jasper – Newton Electric Cooperative	Director of Member Relations
MR. JESSIE MORGAN	Deep East Texas Electric Cooperative	Director of Engineering
MR. LUKE ALFARO	Texas A&M Forest Service	Forester

2.2 MULTI – JURISDICTIONAL PARTICIPATION

44 CFR 201.6(a) Plan requirements.

(4) Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan. State-wide plans will not be accepted as multi-jurisdictional plans.

From the outset of the planning process, the Hazard Mitigation Committee encouraged the participation of a broad range of jurisdictional entities. The involvement of representatives from Newton County, the City of Newton, local special districts, state, and regional agencies provided diverse perspectives and mitigation ideas.

Newton County and the City of Newton are the two formal participants in this hazard mitigation plan. As such, each entity provided information relevant to its jurisdiction and developed its own mitigation action item list. Meetings were hosted by both the County and the City of Newton during the planning process, and each will assist the other to implement the plan and in other endeavors pursuant to the plan's goals. Formal participation in this plan includes but is not limited to the following activities:

- Participation in Hazard Mitigation Committee meetings
- Updating hazard profiles
- Identifying local vulnerabilities
- Local action item development
- Formal adoption of the Hazard Mitigation Plan document following provisional approval by the State of Texas and FEMA

2.3 PUBLIC AND STAKEHOLDER INVOLVEMENT

The following local special districts were represented on the Hazard Mitigation Team or had significant input in the planning process:

Bon Wier Volunteer Fire Department	Burkeville Independent School District
Burkeville Volunteer Fire Department	Deweyville Independent School District
Devils Pocket Volunteer Fire Department	Newton Independent School District
Deweyville Volunteer Fire Department	Jasper Newton County Public Health District
Newton Volunteer Fire Department	Jasper – Newton Long Term Recovery
Old Salem Volunteer Fire Department	American Red Cross of Deep East Texas (ARC)
Trout Creek Volunteer Fire Department	Newton County Extension Office
Bon Wier Food Bank	Mauriceville Municipal Utility District (MUD)
Burkeville Food Bank	Deep East Texas Electric Cooperative
Deweyville Food Bank	Kansas City Southern Railroad
Newton Food Bank	Timber Rock Railroad
Trout Creek Food Bank	National Weather Service
Newton County Food Share	Texas Water Development Board
Deep East Texas Council of Governments (DETCOG)	Pipelines
Texas Department of Transportation (TxDOT)	

2.4 TEAM MEETINGS

44 CFR 201.6(b) Planning process. An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process must include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and nonprofit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

A strategy to involve the public in the update of the Newton County Hazard Mitigation Action Plan was developed at an early stage in the planning process; both through announcements and invitations to public meetings and by encouraging team members to continue a dialogue with neighbors and colleagues for the purpose of capturing input for mitigation ideas. The planning process began with an executive meeting March 3, 2022, to discuss the overarching goals and timelines for the plan development process and to create a list of invitees to serve on the Hazard Mitigation Committee (HMC). A detailed listing of participants on the HMC and its functions is presented in Section 2.1.

The main benchmark in the plan update process was a series of three (3) meetings. The public was invited to attend these meetings and notice was advertised via the local newspaper, the Newton County News. Copies of the public notice announcements are included in Appendix D of this document. The schedule of these meetings and their main agenda points are described below:

A kick-off meeting was held March 3, 2022, at the Iris and Anne Howard Civic Center in Newton. Agenda items for this meeting included the following:

- Introductions of Team members
- Discuss FEMA requirements for Hazard Mitigation Plan updates
- Discuss the targets scheduled for this committee
- Review Proposed Work Schedule and Timeline
- Review dates and times for meetings to be held at Howard Civic Center
- Review Mitigation Action Items from 2017 Hazard Mitigation Action Plan

- Identify Hazards for Newton County and City of Newton including those mentioned in existing plan
- Discuss preliminary agenda items for future meetings
- Discussion of previous/recent disaster events
- Data offered by Team Members

A second meeting was held March 14, 2022, at the Iris and Anne Howard Civic Center in Newton. Agenda items for this meeting included the following:

- Discuss any “Identified Hazards” not listed on the printed handout from the kick-off meeting.
 - Newton County
 - City of Newton
- Distribution of Hazard Mitigation Citizen Survey
- Reevaluate targets scheduled for this committee

A third meeting was held March 31, 2022, at the Iris and Anne Howard Civic Center in Newton. Topics of discussion included specific mitigation projects and the prioritization of those projects. Projects were categorized as High, Moderate, or Low, and the City of Newton elected to adopt several action items that the County had adopted in previous versions of the Plan.

Following provisional plan approval by TDEM and FEMA, additional opportunity for public comment will be provided at plan adoption meetings. The plan adoption meetings will be held in open session allowing opportunity for comment and announced under customary public notice processes.

2.5 PLAN UPDATE

Several restructurings were made to Version 3.0 to better convey information found herein. These changes are detailed below.

Updated Section 1: Introduction

There is no change in the entities participating in this plan, nor any changes in authorizing legislation or administrative entities. The profiles for the County and City of Newton were update, expanded, and moved to Section 3. Specifically, an updated history of disaster declarations and non-declared hazard events can be found in Section 3.1.3.

Updated Section 2: Planning Process

Hazard Mitigation Committee (HMC) membership for this update included participants in previous mitigation plan processes, as well as new members.

In general, plan update meetings involved review of goals, risk assessment, and plan maintenance process from the previous plan, and recommended changes were incorporated into this updated document.

Specifically, a printed copy of the original version of the hazard mitigation plan was reviewed at the kick-off meeting to orient the Committee on materials covered by the original document and to gather feedback on areas for future emphasis. Some information reported in the original plan was deemed still relevant, particularly regarding flood prone areas of the County. The original plan was evaluated in relation to experience gained from disaster response and recovery from disaster occurrences during the prior planning cycles. The Committee determined that implemented and ongoing mitigation actions led to reductions in threat to public safety and emergency responders.

The Continued Public Involvement portion of the document (previously Chapter 2.9) shifted to Section 8.

The plan update process also included a progress report on the previous plan's mitigation activities (previously reported in Appendix G) and was guided by review of information from various agencies and technical documents noted in Section 4.

Add-on Section 3: Jurisdictional Profiles

Version 4.0 saw the addition of a Jurisdictional Profiles Section. Previously a subchapter under the Introduction of Version 3.0, a standalone Section allows for greater detail and emphasis on the changes to the participating jurisdictions.

Add-on Section 4: Risk Overview

Previously detailed within the Risk Assessment Chapter, Risk Overview was given a standalone Section in Version 4.0.

Information about the planning area and recent hazard events was updated and incorporated into the current document. This updated information includes descriptions of the major disaster events to occur since publication of the previous plan:

- DR-4332-TX: Hurricane Harvey, August 2017
- DR-4485-TX: COVID-19 Pandemic, March 2020
- DR-4572-TX: Hurricane Laura, December 2020
- DR-4586-TX: Severe Winter Storm, February 2021

Updated Section 5: Risk Assessment

Risk Assessment was organized as Chapter 3 in Version 4.0. This updated risk assessment places an emphasis on the use of mapping to identify hazard areas. Maps were developed that show flood prone areas and their correspondence to the location of critical facilities and vulnerable development types.

Areas impacted by hurricanes and the paths of previous tornado events were also mapped.

Maps were developed that represent the urban wildland interface and projected inundation area of a hypothetical dam failure, among other new hazard analyses reported in Sections 5.1 and 5.11 of this document.

Individual hazard profiles were developed for Cyber Attacks (Section 5.1) and Pandemics (Section 5.11). These hazards were previously unidentified.

Add-On Section 6: Previous Actions

The Team conducted a thorough review of mitigation activities proposed in the previous version of the plan, with findings summarized in this Section (previously located in the Appendix D Previous Action Item Status Report). Items were given a classification of Keep, Revise, or Delete, with elaborations and/or justifications for each analysis.

Updated Section 7: Mitigation Strategy

Mitigation Strategy was previously organized as Chapter 4. New action items prioritized by the Hazard Mitigation Team were incorporated into the updated document and are reported in Section 7. Lessons

learned in development of FEMA mitigation grant applications during the previous planning cycle also guided the process for updating the mitigation strategy for Newton County.

Add-On Section 8: Plan Maintenance

Previously detailed within the Planning Process Chapter, Plan Maintenance was given a standalone Section in Version 4.0.

Procedures and policies for Maintenance, Monitoring and Evaluation, and Updating are detailed herein. This section also absorbed the Continuing Public Involvement portion of the document.

2.6 ADOPTION

44 CFR 201.6(c) Plan content. The plan must include the following:

- (5) Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

Newton County and the City of Newton have adopted this plan. Copies of the local adoption instruments for each participating jurisdiction will be included in Appendix A of this document.

2.7 IMPLEMENTATION TIMELINE

44 CFR 201.6(c) Plan content. The plan must include the following:

- (4) A plan maintenance process that includes:
 - (i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Newton County and the City of Newton are committed to implementing this Hazard Mitigation Action Plan (HMAP) through execution of the action items listed herein. HMAP monitoring will include a report to the local Hazard Mitigation Officer at the outset and at the completion of each project to ensure oversight, to gather feedback for future updates and to ensure that project timelines are met (see example report, Appendix F). The local Hazard Mitigation Officer will work in coordination with TDEM during post disaster operations to ensure that disaster response teams have access to information and to ensure mitigation opportunities are identified.

In addition, the participating jurisdictions are committed to utilizing this plan to access mitigation grant funds to assist the implementation of action items set forth in Section 7 (Mitigation Strategy). Implementation of high benefit and low-cost action items will be encouraged in parallel with high priority action items that require grant funding to implement. Opportunities to partner and share costs with affiliated agencies and neighboring jurisdictions for multi-objective projects are encouraged.

The Hazard Mitigation Committee (HMC) will monitor the plan in the intervening years between 5-year plan update cycles. The local Hazard Mitigation Officer will oversee the monitoring process, the maintenance of meeting notes, hazard information, and update of the mitigation annex.

The HMC will meet annually on the last business day of January and/or after a disaster event to monitor and evaluate the plan and present data, findings, lessons learned, and future mitigation opportunities or needs. Further evaluation will be conducted by reviewing the Summary Analysis sections of the Hazard Mitigation Project Report (example Appendix F), to gauge relative effectiveness of completed mitigation projects. These meetings will be open to the public and involve both participating jurisdictions. The annual monitoring meetings will involve discussion of hazard related data from the previous year and discussion of progress made toward action item implementation.

Once a year the HMC will brief the County commissioners or City council as appropriate on the progress made or obstacles encountered in the implementation of the plan.

Unless otherwise specified these annual hazard mitigation action plan monitoring meetings will occur at as the last agenda item of the February regular meeting for Newton County Commissioners' Court and Newton City Council. Additional special meetings of the HMC will be organized as appropriate.

The HMC will monitor the plan to assess if significant changes have occurred in the premises upon which the plan was developed such as the following:

- changes in data sources and/or methodology used to determine vulnerabilities and loss estimates, in terms of quality and availability
- changes in federal or state plans that could affect the continued implementation of any of the mitigation actions
- the identification of new hazards requiring new mitigation actions
- identification of mitigation grant opportunities
- changes in community perception relative to specific hazards

In addition to these functions, the HMC agrees to work to educate and involve the public in hazard mitigation activities and to oversee the incorporation of this plan into future planning and public policy documents as these are updated or developed. The incorporation of this plan into other planning instruments will serve as an additional metric for success. This plan will be evaluated based on implementation of action items, the incorporation of mitigation principles into future public policy, improved public safety, and the overall reduction of losses for Newton County residents.

2.8 INCORPORATION INTO EXISTING AND FUTURE PLANNING DOCUMENTS

44 CFR 201.6(c) Plan content. The plan must include the following:

(4) A *plan maintenance process* that includes:

- (ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning Mechanisms such as comprehensive or capital improvement plans, when appropriate.

Mitigation is most successful when it is codified and incorporated into the functions and priorities of government, planning and future development. Incorporating mitigation strategies into other planning documents is an effective way to leverage the support of affiliated agencies and departments while ensuring mutually supportive goals and policies.

Accordingly, the goals and mitigation strategies of this Hazard Mitigation Action Plan will be incorporated into other planning documents within the purview of participating jurisdictions as they are updated or are developed. Examples of such planning documents include the Jasper/Newton County Emergency Operations Plan and the Newton County Flood Damage Prevention Order (Newton County Floodplain Ordinance), Newton County Code, City of Newton Floodplain Ordinance, future City of Newton Fire Code, to name a few. Please refer to Chapter 4, Section 4.6 (Integration with Planning Mechanisms) for a detailed listing of opportunities for incorporation of this document into other public policy decisions and public administration.

Version 3.0 of this Plan was not incorporated into other planning mechanisms within the previous planning cycle.

Development of future or update of existing plans will include a review of this Hazard Mitigation Action Plan for consideration and incorporation of pertinent elements. Also, to further ensure the incorporation of goals and actionable items of this plan, Hazard Mitigation Committee members representing both the City

of Newton and Newton County will be invited to sit on plan development or plan update committees for existing planning mechanisms or any developed in the future. And furthermore, this Hazard Mitigation Action Plan will be cited as a technical reference and data source for these update or future planning processes.

For example, the upcoming Long Range Master Plan for Newton County will include a major section on natural hazards, will cite data, findings, action items from this plan, and hazard mitigation committee members will serve on the long-range plan development committee.

SECTION 3: JURISDICTIONAL PROFILES

3.1 NEWTON COUNTY

3.1.1 Overview

Newton County is in southeastern Texas along the Texas-Louisiana border. Newton, the county seat, and largest town is seventy miles northeast of Beaumont. Newton County is the 147th largest of the 254 counties in Texas. According to the US Census, estimated population in 2020 was 12,217.

Newton County is bounded by Sabine County to the north, Orange County to the south, and Jasper County to the west. In general, the centerline of the Sabine River marks the eastern boundary; across the river in the State of Louisiana are Sabine and Vernon Parishes to the northeast, and Beauregard Parish to the east, and Calcasieu Parish to the southeast. Major creeks and bayous in Newton County include Big and Little Cow Creek, Quicksand Creek, and Big Cypress Creek. Toledo Bend Reservoir in northeastern Newton County is the largest lake. Elevation ranges from a low of 8 feet above mean sea level south of Deweyville to a high of 568 feet at Weeks Settlement, with low, level terrain in the south and rolling topography in northern portion of the County.

The Texas State Legislature established Newton County on April 22, 1846, from the eastern half of Jasper County and named it in honor of John Newton, a veteran of the American Revolution. The County's boundaries have remained predominantly unchanged since that time, apart from a small adjustment to the western boundary in 1852.

The county is 933.7 square miles in area, approximately 65 miles north/south and 18 miles east/west. Population density is 13.1 residents per square mile. Rainfall averages 56.0 inches per year.

Newton County is governed by a County Judge and four Commissioners elected by Precinct. County offices include District Attorney, County Clerk, County Treasurer, County Assessor/Collector, County Court at Law, Constable, Sheriff, Justice of the Peace, and County Auditor. Additional offices include Emergency Management and Floodplain Management.

Table 3.1–1 Census Demographic Characteristics, Newton County, Texas (2020)

DESCRIPTION	NEWTON COUNTY	TEXAS	U.S.
2020: ACS 5-YEAR POPULATION ESTIMATE	12,717	29,145,505	331,449,281
MEDIAN AGE	44.4	34.8	38.2
NUMBER OF COMPANIES	128	609,476	7,959,103
HIGH SCHOOL DEGREE OR HIGHER	43.0%	24.7%	26.7%
BACHELOR'S DEGREE OR HIGHER	8.8%	30.7%	32.9%
GRADUATE OR PROFESSIONAL DEGREE	1.7%	10.8%	12.7%
TOTAL HOUSING UNITS	6,376	11,589,324	122,354,219
EMPLOYMENT RATE	45.9%	61.0%	59.6%
MEDIAN HOUSEHOLD INCOME	\$40,690	\$63,826	\$64,994
FOREIGN BORN POPULATION	1.0%	16.8%	13.5%
INDIVIDUALS BELOW POVERTY LEVEL	25.8%	14.2%	12.8%
VETERANS	8.6%	6.8%	7.1%

Source: US Census Bureau, 2020 American Community Survey 5-Year Estimates

3.1.2 Population and Demographics

According to the 2020 Census, Newton County has a population of 12,217 residents. Table 3.1–2 provides the population distribution by jurisdiction within Newton County based on the 2020 Census information.

Table 3.1–2 Population Distribution by Jurisdiction

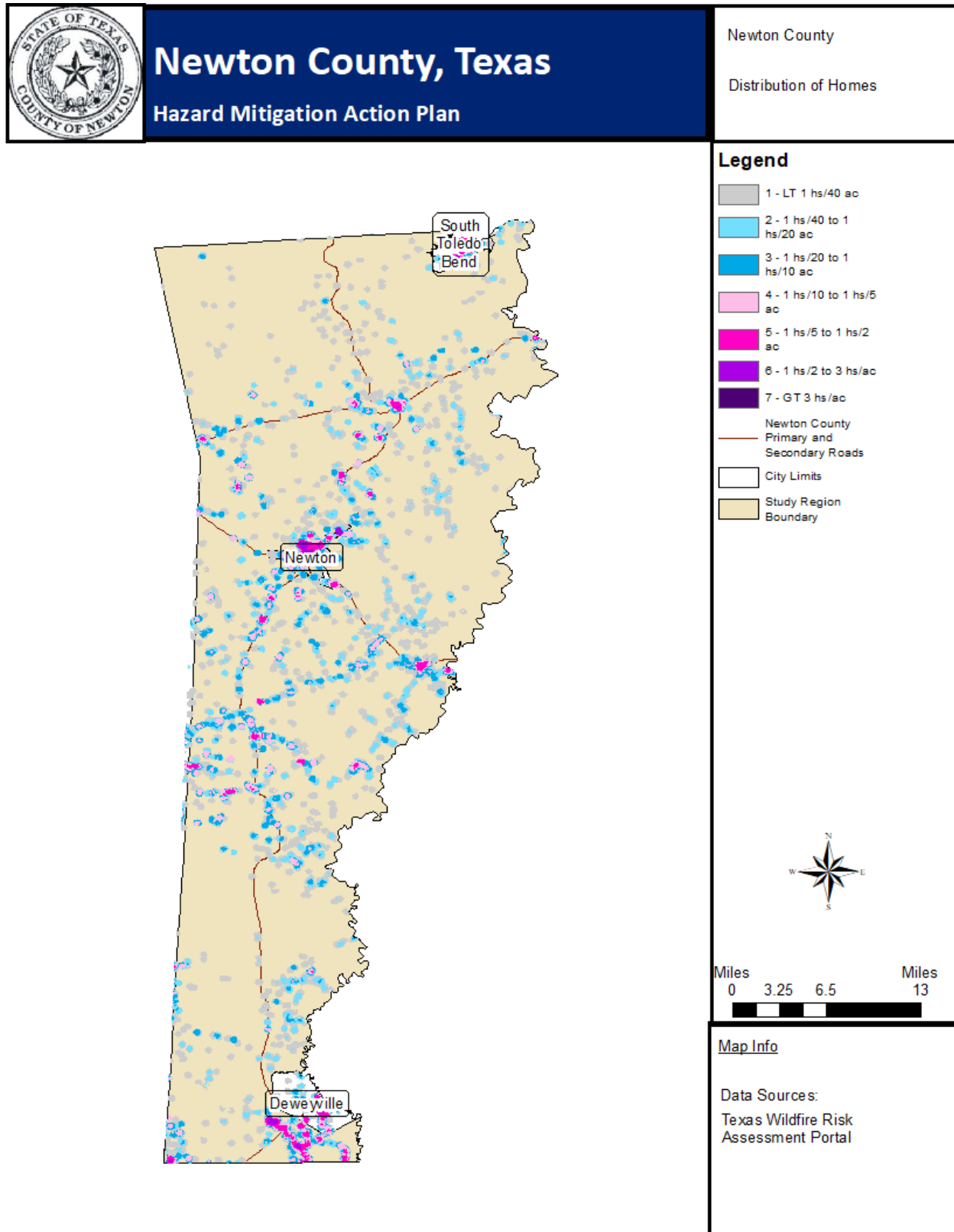
JURISDICTION	TOTAL 2020 POPULATION	PERCENTAGE	ESTIMATED VULNERABLE OR SENSITIVE POPULATION		
			YOUTH (UNDER 5)	ELDERLY (OVER 65)	BELOW POVERTY LEVEL
CITY OF NEWTON	1,633	13.37%	124	330	500
DEWEYVILLE*	571	4.67%	11	118	69
SOUTH TOLEDO BEND*	434	3.55%	0	167	63
UNINCORPORATED NEWTON COUNTY	9,579	78.41%	403	1,926	2,520
NEWTON COUNTY	12,217	100%	538	2,541	3,152

Source: US Census Bureau

Note: Though they are not cities, Deweyville and South Toledo Bend are Census-Designated Places.

Approximately 9,579 people, or over 78% of the total population live in the unincorporated areas of Newton County. A map depicting the distribution of homes throughout the planning area can be found on the next page.

Figure 3.1–2 Distribution of Homes, Newton County



Historic Population Trends

The official 2010 Newton County population is 12,217. Overall, Newton County experienced a decrease in population between 1990 and 2020 by 9.96%, or 1,352. The City of Newton experienced an increase in population between 1990 and 2010 but experienced a sharp decline between 2010 and 2020. The planning area did not experience development changes in hazard prone areas within the last planning cycle that impacted its vulnerability to identified hazards.

Table 3.1–3 Population for Newton County, 1990 – 2020

JURISDICTION	1990	2000	2010	2020	POPULATION CHANGE 1990 - 2010	PERCENT OF CHANGE	POPULATION CHANGE 2010 - 2020	PERCENT OF CHANGE
CITY OF NEWTON	1,885	2,459	2,478	1,633	(+) 593	(+) 31.46%	(-) 845	(-) 34.10%
DEWEYVILLE*	1,218	1,190	1,023	571	(-) 195	(-) 16.00%	(-) 452	(-) 44.18%
SOUTH TOLEDO BEND*	–	576	524	434	–	–	(-) 90	(-) 17.18%
UNINCORPORATED NEWTON COUNTY	10,466	10,847	10,420	9,579	(-) 46	(-) 0.44%	(-) 841	(-) 8.07%
NEWTON COUNTY	13,569	15,072	14,445	12,217	876	(+) 6.46%	(-) 2,228	(-) 15.42%

Source: US Census Bureau

3.1.3 Disaster Declaration History

Since 1953 there have been 21 federal disaster/emergency declarations in Texas that included Newton County. This number does not reflect all the natural disaster occurrences in this region's history. The total damage estimate that includes all affected Texas Counties is over \$88.445 billion.

Table 3.1–4 Federal Disaster Declaration History, Newton County

DECLARATION NUMBER	DATE	DISASTER DESCRIPTION	*DAMAGE ESTIMATE
4586	11/12/2021	Texas Severe Winter Storm	NOT AVAILABLE
4485	03/11/2021	Texas COVID-19 Pandemic	NOT AVAILABLE
4572	12/09/2020	Hurricane Laura	\$105,000,000
3540	08/24/2020	Tropical Storms Marco and Laura	NOT AVAILABLE
4332	10/11/2017	Hurricane Harvey	\$45,000,000
4266	03/28/2016	Flooding	\$160,772,727
4245	11/25/2015	Flooding	\$95,551,170
4223	05/29/2015	Flooding	\$421,025,314
4029	09/09/2011	Wildfire	\$78,753,469
1999	07/01/2011	Wildfire	\$55,425,473
1791	09/13/2008	Hurricane Ike	\$3,479,373,023
3290	08/29/2008	Hurricane Gustav	\$3,190,000,000
1606	09/25/2005	Hurricane Rita	\$2,206,412,313
1379	06/09/2001	Severe Storms, Flooding	NOT AVAILABLE
3142	09/01/1999	Wildfire	NOT AVAILABLE
1236	08/26/1998	Tropical Storm Charley	\$38,153,774
3127	06/23/1998	Wildfire	NOT AVAILABLE
836	07/18/1989	Tropical Storm Allison	\$14,466,308
828	05/19/1989	Severe Storms, Flooding	\$54,462,633
398	07/11/1973	Severe Storms, Flooding	\$8,972,138
9	06/20/1953	Flood	\$322,800
TOTAL	-	-	\$9,953,691,142

Source: FEMA (Damage estimates include regional impacts across multiple counties/states.)

Numerous other major disasters have struck Newton County since 1959 that did not result in federal disaster declarations. As reported by the Public Entity Research Institute, these non-declared disasters are listed below in Table 3.1–5.

Table 3.1–5 Other Federal Disaster Declaration Requests, Newton County

DR REQUEST #	DATE	DISASTER DESCRIPTION
3284	03/14/2008	Wildfire
1624	01/11/2006	Wildfire
4137	12/29/2004	Severe Storms and Flooding
3139	12/04/2003	Severe Storms and Tornadoes
3119	11/06/2003	Severe Storms
1114	01/09/2002	Severe Storms & Flooding
1097	12/21/2001	Queen Isabel Bridge Collapse
1102	11/27/2001	Severe Storms & Tornadoes
1035	06/28/2001	Severe Weather
79	09/20/2000	Fire Emergency Request
35	05/11/2000	Severe Weather
99105	10/08/1999	Missing Data
99162	04/09/1999	Possible Fire Hazard
99163	04/09/1999	Possible Fire Hazard
98158	11/10/1998	Drought
97060	06/06/1997	Severe Storms, Flooding Tornadoes
97020	01/29/1997	Severe Storms, Flooding, Hurricane
97016	01/29/1997	Severe Storms and Flooding
95037	08/02/1995	Severe Storms, Tornadoes, Hail, Flooding
93096	08/11/1993	Tropical Storm Arlene
93095	06/08/1993	Tornadoes, Severe Storms
92058	11/19/1992	Severe Storm and Flooding
92026	07/24/1992	Severe Storms, Tornadoes & Flooding
90039	08/09/1990	Tornadoes & Flooding
89034	09/01/1989	Hurricane Chantal
85008	12/27/1984	Severe Thunderstorms and Tornadoes
84048	07/16/1984	Severe Storms & Flooding
83046	10/27/1983	Severe Storms and Hail
83037	07/07/1983	Severe Storms, Flooding, Tornadoes
82030	06/22/1982	Severe Storms and Flooding
81030	06/20/1981	Severe Storms & Flooding
81004	11/12/1980	Torrential Rains & Flooding
78096	09/30/1978	Severe Storms & Flooding
76065	07/30/1976	Flooding
76046	06/11/1976	Severe Storms
76012	09/16/1975	Heavy Rains & Flooding
76002	07/18/1975	Storms, Flooding & Tornadoes
75031	10/25/1974	Flooding
74017	03/13/1974	Flooding
74012	03/01/1974	Beach Erosion
73093	10/09/1973	Flooding (Tropical Storm Delia)
73078	08/24/1973	Flooding
73043	05/25/1973	Flooding
73035	05/09/1973	Tornadoes
69010	06/10/1969	Flooding, Hard Wind & Hail
66009	09/12/1966	Flooding
64008	11/24/1964	Flood
62004	07/18/1962	Mosquitoes
61001	02/13/1961	Rains & Floods
59009	10/12/1959	Hurricane Debra

Source: FEMA, Public Entity Research Institute (PERI)

3.1.4 Future Development

To better understand how future growth and development in the County might affect hazard vulnerability, it is useful to consider population growth, occupied and vacant land, the potential for future development in hazard areas, and current planning and growth management efforts. This section includes an analysis of the projected population change and economic impacts.

Population projections from 2020 to 2050 are listed in Table 3.1–5, as provided by the Office of the State Demographer, Texas State Data Center. This information is only available at the County level; however, the population projection shows a decrease in population density for the County, which would mean overall decline for the County.

Table 3.1–5 Newton County Population Projections

COUNTY	LAND AREA (SQ MI)	POPULATION AND DENSITY							
		2020		2030		2040		2050	
NEWTON	933.7	12,217	13.08	12,873	13.79	11,668	12.50	10,751	11.51

Source: US Census Bureau. 2020

3.1.5 Economic Impact

Protecting infrastructure is critical to the economic growth of Newton County. Thus, mitigating the risk associated with natural disasters is important to the participating jurisdictions.

Attracting industries and investors is key to the future economic health and growth of Newton County. Maintenance of infrastructure is needed to continue providing essential utility services. The county is in a unique location and position to face and embrace growth in the next planning cycle and the action items posed by the Hazard Mitigation Committee including expansion of the airport, improvement of road and bridge conditions, and addressing of existing drainage issues take this into serious consideration.

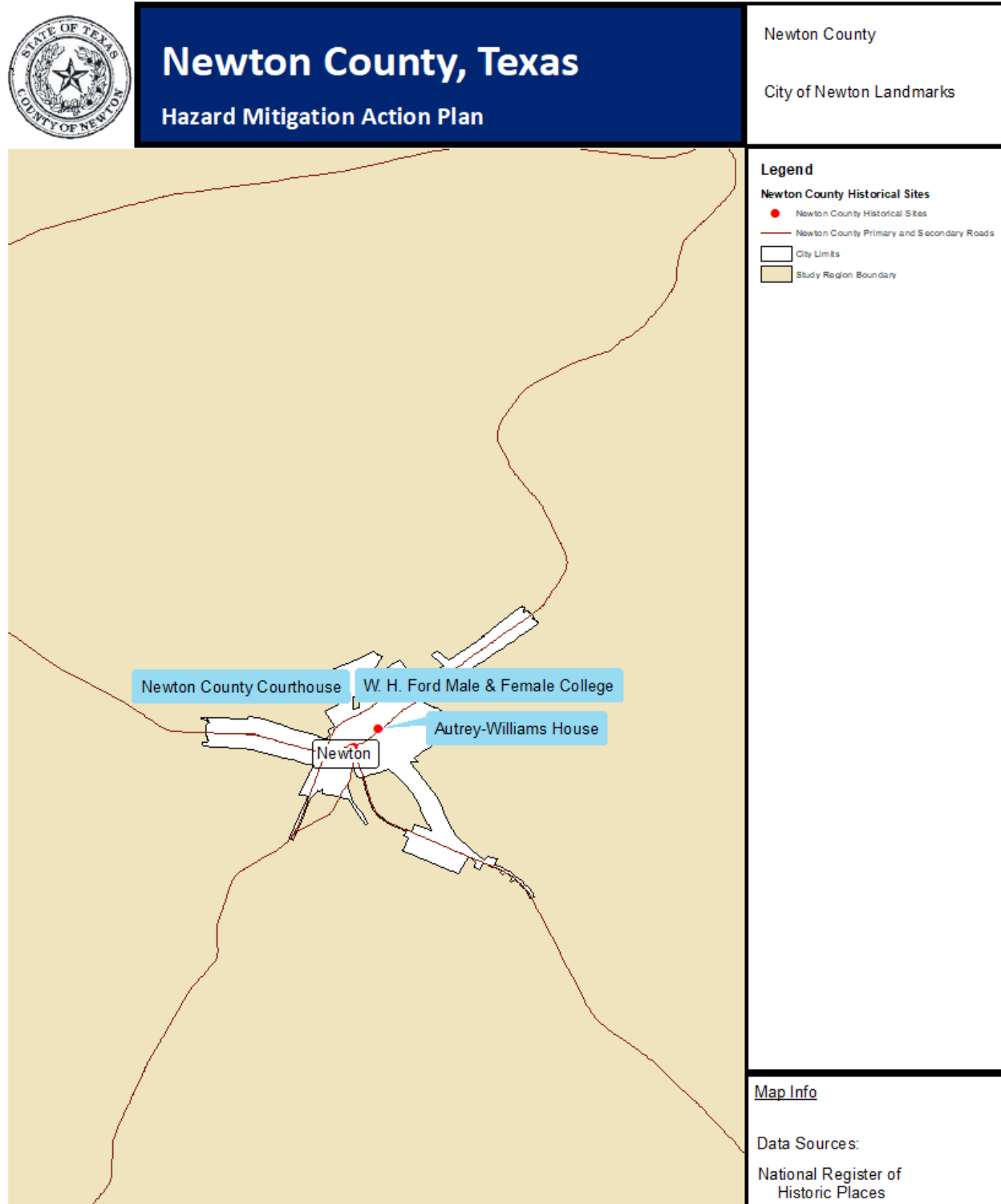
The county has experienced a decline in population in the past planning cycle. It is the focus of the participating jurisdictions to draw new employers in new industries in the next few planning cycles to facilitate a positive population growth trend that can improve both the health of the local economy and the quality of life of current and future residents.

3.2 CITY OF NEWTON

3.2.1 Overview

Newton is in central Newton County along the intersection of Highway 87 and Highway 190. The elevation of Newton is approximately 194 feet above mean sea level. The incorporated area encompasses 5.5 square miles. City Hall is located northwest of the county courthouse. Caney Creek runs through the center of town, Big Cow Creek to the west and Little Quicksand Creek to the east. Figure 3.1–3 on the following page shows landmarks for the City of Newton.

Figure 3.1–3 Landmarks, City of Newton



According to the U.S. Census, the population of the City of Newton in 2020 was 1,633. Population density is 297 people per square mile. Median household income was \$33,077 in 2020.

The top employers by industry as a percentage of the workforce include education, health, and social services (34.6 percent); construction (14.5 percent); retail trade (10.5 percent); manufacturing (8.3 percent); transportation and warehousing, and utilities (7.7 percent); public administration (6.9 percent).

Table 3.1–1 Census Demographic Characteristics, City of Newton, Texas (2020)

DESCRIPTION	CITY OF NEWTON	TEXAS	U.S.
2020: ACS 5-YEAR POPULATION ESTIMATE	1,633	29,145,505	331,449,281
MEDIAN AGE	38.6	34.8	38.2
NUMBER OF COMPANIES	–	609,476	7,959,103
HIGH SCHOOL DEGREE OR HIGHER	44.1%	24.7%	26.7%
BACHELOR'S DEGREE OR HIGHER	15.7%	30.7%	32.9%
GRADUATE OR PROFESSIONAL DEGREE	5.6%	10.8%	12.7%
TOTAL HOUSING UNITS	780	11,589,324	122,354,219
EMPLOYMENT RATE	46.4%	61.0%	59.6%
MEDIAN HOUSEHOLD INCOME	\$33,077	\$63,826	\$64,994
FOREIGN BORN POPULATION	1.4%	16.8%	13.5%
INDIVIDUALS BELOW POVERTY LEVEL	30.6%	14.2%	12.8%
VETERANS	10.3%	6.8%	7.1%

Source: US Census Bureau, 2020 American Community Survey 5-Year Estimates

3.2.2 Population and Demographics

According to the 2020 Census, the City of Newton has a population of 1,633 residents. Table 3.1–2 in the previous section compares the population distribution by jurisdiction within Newton County based on the 2020 Census information.

SECTION 4: RISK OVERVIEW

44 CFR 201.6(c) Plan content. The plan must include the following:

(2) A *risk assessment* that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards.

Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include:

(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description must include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008, must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:

- (A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
- (B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate;
- (C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

4.1 HAZARD DESCRIPTION

Section 4 is the first phase of the Risk Assessment, providing background information for the hazard identification process and descriptions for the hazards identified. The Risk Assessment continues with Sections 5, which include hazard descriptions and vulnerability assessments.

Upon a review of the full range of natural hazards suggested under FEMA planning guidance, participating jurisdictions within Newton County identified two (2) previously unaddressed hazards, bringing the total up to eleven (11) natural hazards and three (3) man-made hazards that are addressed in the Plan Update.

In general, there are two main categories of natural hazards that affect the planning area: atmospheric, and hydrological. Atmospheric hazards are events or incidents associated with weather generated phenomenon. Atmospheric hazards that have been identified as significant for the planning area include excessive heat, hurricanes, lightning, hail, high winds, tornado, wildfires, and winter storms.

Hydrologic hazards are events or incidents associated with water related damage and account for over 75 percent of Federal disaster declarations in the United States. Hydrologic hazards identified as significant for the planning area include flooding, dam failure, and drought. It should be noted that while the latter is the result of human activity, dam failure has been included in the hydrologic hazards category given the nature of its consequences.

The man-made hazards include cyber-attack, hazardous materials, and pandemics.

4.2 NATURAL HAZARDS AND CLIMATE CHANGE

Climate change is the long-term shift in weather patterns, categorizing it as a long-term hazard. As it affects several types of weather events, it can increase or decrease the risk of other weather hazards.

NASA highlights the following long-term effects of global climate change:

- Rising temperatures that will not be uniform over time or geographic region
- Lengthened growing seasons, especially in the western United States
- Decreasing total precipitation, with an increase in heavy precipitation events in the Southwest
- Increased intensity of droughts and heat waves in the Southwest
- Increased intensity, frequency, and duration of hurricanes

- Rising sea levels from 1 – 8 feet by 2100
- Decreasing footprint of ice caps in Arctic Ocean

Texas is considered one of the more vulnerable states in the U.S. Its long coastline is vulnerable to storm surges, and that susceptibility will only increase with rising sea levels. Newton County is no stranger to these weather events.

Megadroughts can trigger abrupt changes to regional ecosystems and the water cycle, reducing the availability of water resources through increasing the evaporation rate and decreasing the groundwater recharge rate. They can also drastically increase both extreme summer temperatures and wildfire risks.

These trends leave Texas' agricultural and livestock industries at risk for decreased productivity, which could result in abrupt economic impacts.

4.3 OVERVIEW OF HAZARD ANALYSIS

The Hazard Mitigation Committee (HMC) reviewed information on hazards required for consideration. The HMC identified hazards listed below as relevant to the planning area and selected these for detailed profile and mitigation efforts pursuant to the goals of this plan.

NEWTON COUNTY HAZARDS	CITY OF NEWTON HAZARDS
CYBER ATTACK	–
DAM FAILURE	–
DROUGHT	DROUGHT
EXCESSIVE HEAT	EXCESSIVE HEAT
FLOOD	FLOOD
HAIL	HAIL
HAZARDOUS MATERIALS	HAZARDOUS MATERIALS
HIGH WINDS	HIGH WINDS
HURRICANE	HURRICANE
LIGHTNING	LIGHTNING
PANDEMIC	–
TORNADO	TORNADO
WILDFIRE	WILDFIRE
WINTER STORM	WINTER STORM

Source: Hazard Mitigation Team

The Hazard Mitigation Committee (HMC) also considered the following hazards. The committee decided not to profile these hazard types in this updated plan due to lack of previous occurrences, lack of data regarding previous occurrences, low vulnerability due to geographic location, and/or low vulnerability as determined by the HMC which presided over development of this plan update. Hazards not profiled and the explanation for omission per FEMA guidance, such as lack of vulnerability in the case of volcanoes and avalanche, are listed.

HAZARD TYPE	REASON FOR OMISSION
COASTAL EROSION	Negligible potential for occurrence due to geographic location
EARTHQUAKE	Negligible potential for direct impacts
EXPANSIVE SOILS	Lack of data regarding previous occurrences
LAND SUBSIDENCE	Hazard has not and is not expected to pose a threat in the next five years

Source: Hazard Mitigation Team

4.4 HAZARD RANKING METHODS

The hazard profiles in Sections 5.1 – 5.14 were developed from information provided by the State of Texas Hazard Mitigation Plan, FEMA, the National Weather Service, the previous version of the HMAP, and other referenced sources. Geographic location information is provided for each profiled hazard, based on information on the impact areas of previous occurrences. For many hazards including drought, excessive heat, hurricane, thunderstorm, hail, etc., the geographic location of impacts is potentially any location in the county and is noted accordingly.

A common set of definitions/classifications was established for the probability of future hazard occurrences and the magnitude and severity of impacts, for the purpose of describing the identified hazards in a quantitative and qualitative way (to the extent that data allows).

Classifications used to categorize probability of future occurrence were based on statistical assessments of previous occurrences (or recurrence interval) and equated to a percent probability of occurrence each year whenever possible. Probability of future occurrence classifications used in the hazard profiles for this plan are listed below:

- Highly Likely – probable in the next year
- Likely – probable in the next three years
- Occasional – probable in the next five years
- Unlikely – probable in the next ten years

Severity classifications are defined as follows:

- Catastrophic – Severe property damage on a regional or metropolitan scale; shutdown of critical facilities, utilities, and infrastructure for extended periods; and/or multiple injuries and fatalities
- Major – Severe property damage on a neighborhood scale; temporary shutdown of critical facilities, utilities, and infrastructure; and/or injuries or fatalities
- Minor – Isolated occurrences of moderate to severe property damage; brief shutdown of critical facilities, utilities, and infrastructure; potential injuries
- Negligible – Isolated occurrences of minor property damage; minor disruption of critical facilities, utilities, and infrastructure; potential minor injuries

Overall Ranking classifications are defined as follows:

- Very High – High probability of future occurrence and potentially catastrophic severity.
- High – Moderate/high probability of future occurrence and potentially critical severity.
- Moderate – Moderate/high probability of future occurrence and limited potential severity.
- Low – Low/moderate probability of future occurrence and negligible/limited potential severity.

Data Sources

Information contained in the Risk Assessment chapter came from the following sources:

- Federal Emergency Management Agency (FEMA)
- FEMA's HAZUS MH-MR4 (Loss estimation and hazard mapping software)
- State of Texas Division of Emergency Management (TDEM)
- State of Texas Mitigation Plan (2018)
- U.S. Army Corps of Engineers (USACE) (Lower Sabine Section 90(5b) Analysis: Reconnaissance Report 2004)
- National Oceanic and Atmospheric Administration (NOAA)
- National Weather Service (NWS), Galveston and Lake Charles

- National Severe Storms Laboratory (NSSL)
- National Climatic Data Center (NCDC)
- FEMA Flood Insurance Study and Flood Insurance Rate Maps (2018)
- U.S. Geological Survey (USGS)
- Local media, library, and historical records
- The Newton County News (historic information and public notice)
- Newton County & City of Newton

There were certain limitations in the amount and specificity of data available for the update of this hazard mitigation plan. It is expected that over time the availability of hazard related data will continue to improve and be included in future updates. Such improvements in data accessibility should result from the implementation of this Hazard Mitigation Action Plan and others like it throughout southeast Texas region and Gulf Coast states.

4.5 THIRA ANALYSIS

Table 4.5 – 1 portrays the results of the planning areas' self-assessment hazard ranking, using FEMA's Threat and Hazard Identification and Risk Assessment (THIRA) procedure. THIRA helps to determine the current and future capabilities of addressing and responding to various threats.

	CONTINUITY OF OPERATIONS	ECONOMIC COST	EMERGENCY SERVICES	ENVIRONMENT	FACILITIES AND INFRASTRUCTURE	PROPERTY	PUBLIC CONFIDENCE IN GOVERNMENT	PUBLIC HEALTH AND SAFETY
CYBER ATTACK	Major	Major	Limited	Limited	Minor	Limited	Minor	Minor
DAM FAILURE	Major	Major	Major	Major	Major	Major	Minor	Major
DROUGHT	Limited	Limited	Minor	Major	Minor	Minor	Limited	Major
EXCESSIVE HEAT	Limited	Limited	Minor	Major	Minor	Minor	Limited	Major
FLOOD	Minor	Major	Major	Major	Major	Major	Minor	Major
HAIL	Limited	Limited	Limited	Minor	Minor	Minor	Limited	Minor
HAZARDOUS MATERIALS	Limited	Minor	Minor	Minor	Minor	Limited	Limited	Major
HIGH WINDS	Limited	Limited	Limited	Minor	Minor	Minor	Limited	Minor
HURRICANE	Major	Major	Major	Major	Major	Major	Minor	Major
LIGHTNING	Limited	Limited	Limited	Minor	Minor	Minor	Limited	Minor
PANDEMIC	Minor	Major	Major	Limited	Limited	Limited	Major	Major
TORNADO	Major	Major	Major	Minor	Major	Major	Minor	Major
WILDFIRE	Major	Major	Major	Major	Major	Major	Minor	Major
WINTER STORM	Major	Major	Major	Minor	Major	Minor	Major	Major

Source: Newton County HMC

4.6 VULNERABILITY ASSESSMENT

Overall vulnerability to each hazard was based on assessments of previous and potential occurrences regarding the scale of geographic area affected, future probability, and severity of impact considering a worst-case scenario. Factors including risk exposure of special needs populations and the location of critical facilities and infrastructure were also considered.

Relative to other geographic regions of the U.S., overall vulnerability to natural hazard impacts is considered high in the region of southeastern Texas that includes the planning area. For Newton County, certain hazard types have more severe historic and potential impacts than others, particularly flooding, hurricanes, and wildfire (Very High). Pandemics, though not historically common, are fresh on the minds of the HMC members due to recent unprecedented events.

Based on these factors and the definitions established in the table notes, Table 4.6 – 1 below shows the Hazard Mitigation Committee's assessment of overall vulnerability to each of the identified hazards and the probability of each category at the County level.

Table 4.6–1 Overall Vulnerability and Impact by Hazard Type, Newton County

HAZARD	PROBABILITY	SEVERITY	OVERALL RANKING
CYBER ATTACK	Unlikely	Major	LOW
DAM FAILURE	Unlikely	Catastrophic	LOW
DROUGHT	Likely	Minor	MODERATE
EXCESSIVE HEAT	Likely	Minor	MODERATE
FLOOD	Highly Likely	Catastrophic	VERY HIGH
HAIL	Likely	Minor	MODERATE
HAZARDOUS MATERIALS	Occasional	Major	LOW
HIGH WINDS	Likely	Major	HIGH
HURRICANE	Highly Likely	Catastrophic	VERY HIGH
LIGHTNING	Likely	Minor	MODERATE
PANDEMIC	Unlikely	Catastrophic	MODERATE
TORNADO	Likely	Major	MODERATE
WILDFIRE	Likely	Catastrophic	HIGH
WINTER STORM	Occasional	Minor	LOW

Source: Newton County HMC

4.6.1 Repetitive Loss Properties

44 CFR 201.6(c) Plan content. The plan must include the following:

- (2) (ii) ... All plans approved after October 1, 2008, must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:
 - (A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
 - (B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate;
 - (C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

National Flood Insurance Program Repetitive Loss Strategy

The National Flood Insurance Program (NFIP) has developed a strategy to mitigate future losses related to repetitive loss properties. The primary objective of the Repetitive Loss Properties Strategy is to eliminate or reduce the damage to property and the disruption of life caused by repeated flooding of the

same properties. This is accomplished by elevation of the property or purchasing these properties and demolishing them.

Severe Repetitive Loss properties (SRL) are identified as having experienced:

- Four or more paid flood insurance claims of more than \$1,000 each; or
- Two paid flood claims within a 10-year period that, in the aggregate, equal or exceed the current value of the insured property; or
- Three or more paid flood claims that, in the aggregate, equal or exceed the current value of the insured property.

Repetitive Loss properties (RL) have 2 or more paid flood claims in excess of \$5,000 in 10-year period.

Loss history is determined by counting all flood claims paid on an insured property, regardless of any change(s) of ownership, since the building's construction or back to 1978 if the building was constructed before 1978.

Local Repetitive Loss Information

At least 61 properties in Newton County have flood loss histories that meet the definition for repetitive loss (RL) properties. Fifteen (15) of these properties also meet one or more of the definitions for severe repetitive loss (SRL) properties. The available data indicates that 59 of the 61 properties are residential, with the remaining two (2) properties identified as non-residential. and these represent 140 of the 531 total flood insurance claims for the county overall. The City of Newton has one (1) repetitive loss properties as defined by the NFIP.

Six (6) properties are tied for the highest number offload insurance claims on a sole property with four. Six (6) properties have made three flood loss claims each, and forty-nine (49) properties have made two flood insurance claims. According to the available records, four properties have been successfully mitigated, twenty-three (23) properties have current flood policies, and four (4) are covered under the Special Direct Facility.

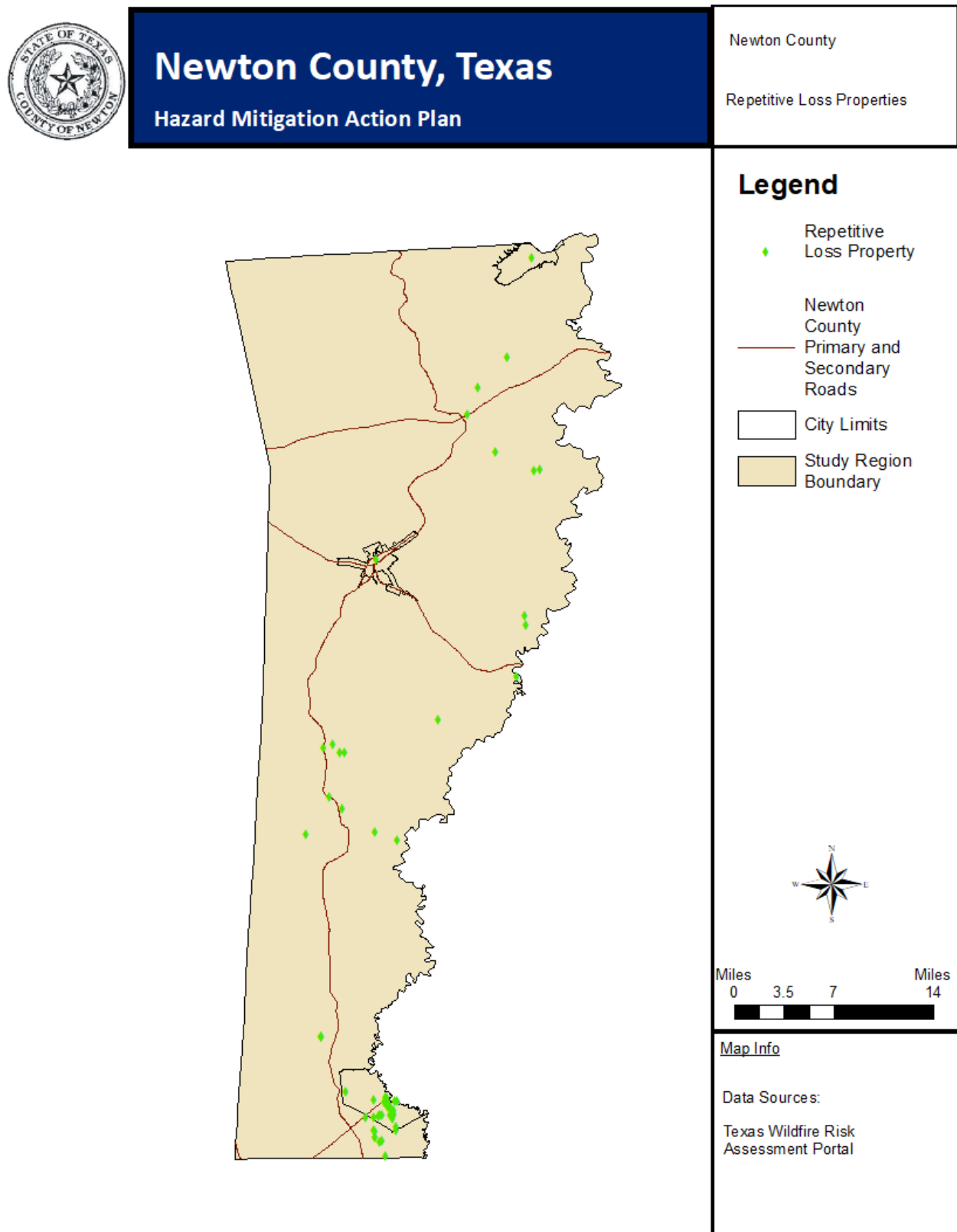
Table 4.6 – 2 summarizes numbers of losses and amounts paid in insurance building claims by category. An additional \$2.57 million has been paid in building contents claims.

Table 4.6–2 Summary of Repetitive and Severe Repetitive Loss Building Claims, Newton County

# OF PROPERTIES	# OF LOSSES	TOTAL PAYMENTS	AVERAGE PAYMENT PER LOSS	AVERAGE PAYMENT PER PROPERTY
61	140	\$8,602,955.66	\$61,449.68	\$141,032.06

Figure 4.6–1 on the following page shows the locations of repetitive loss properties in Newton County. See also Section 4.6.2 (Flood Insurance Claim Information).

Figure 4.6–1 Repetitive Loss Properties, Newton County



4.6.2 Flood Insurance Claim Information

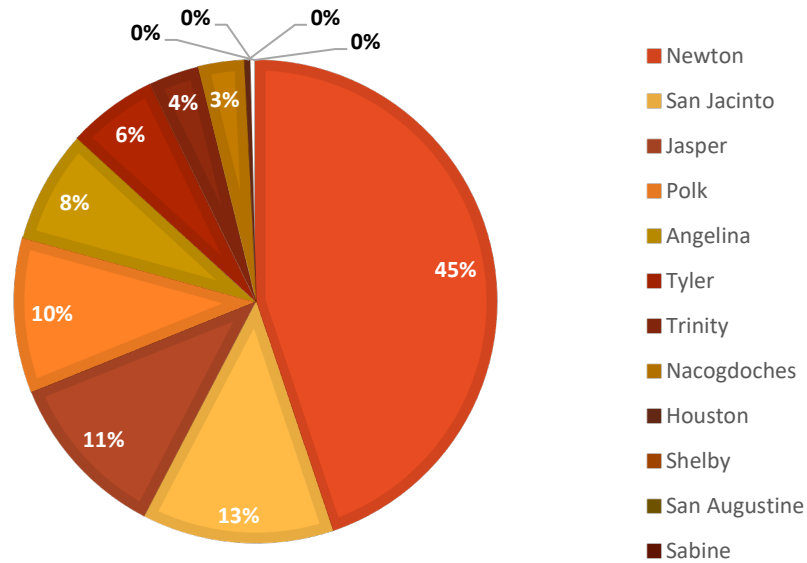
Newton County has 531 paid flood insurance claims during the period 1970-2021 according to the FEMA/NFIP database, with total claim payments totaling over \$26.5 million. When compared to the other counties in the Deep East Texas Council of Governments, Newton County's total payments are nearly equal to the other eleven (11) counties combined, as shown in the table below and chart that follows.

Table 4.6–3 Flood Insurance Claim Data, DETCOG Counties (1970 – 2021)

COUNTY	PAID FLOOD INSURANCE CLAIMS	AVERAGE PAID FLOOD INSURANCE CLAIM	TOTAL FLOOD INSURANCE CLAIM PAYMENTS
NEWTON	531	\$50,016.15	\$26,558,577.59
SAN JACINTO	446	\$16,959.34	\$7,563,867.77
JASPER	223	\$30,031.63	\$6,697,053.23
POLK	276	\$22,104.67	\$6,100,889.08
ANGELINA	311	\$14,393.39	\$4,476,343.32
TYLER	177	\$20,083.76	\$3,554,824.71
TRINITY	122	\$16,417.68	\$2,002,957.11
NACOGDOCHES	224	\$8,150.75	\$1,825,767.17
HOUSTON	25	\$8,646.13	\$216,153.18
SHELBY	5	\$19,805.26	\$99,026.32
SAN AUGUSTINE	6	\$13,713.82	\$82,282.90
SABINE	5	\$5,127.82	\$25,639.08
TOTAL	1820	—	\$32,644,803.87

Source: FEMA, National Flood Insurance Program OpenFEMA Data Resources

TOTAL FLOOD INSURANCE CLAIM PAYMENTS
DETCOG COUNTIES (1970 - 2017)
SOURCE: OPENFEMA



4.6.3 Critical Facilities and Infrastructure

Critical facilities can be defined as facilities that provide vital operational, protection, maintenance or care services to vulnerable populations and the greater community.

Figures 4.6–2 through 4.6–4 on the following pages show the locations of critical facilities, fire stations, and schools and school districts throughout the planning area.

Figure 4.6–2 Critical Facilities, Newton County

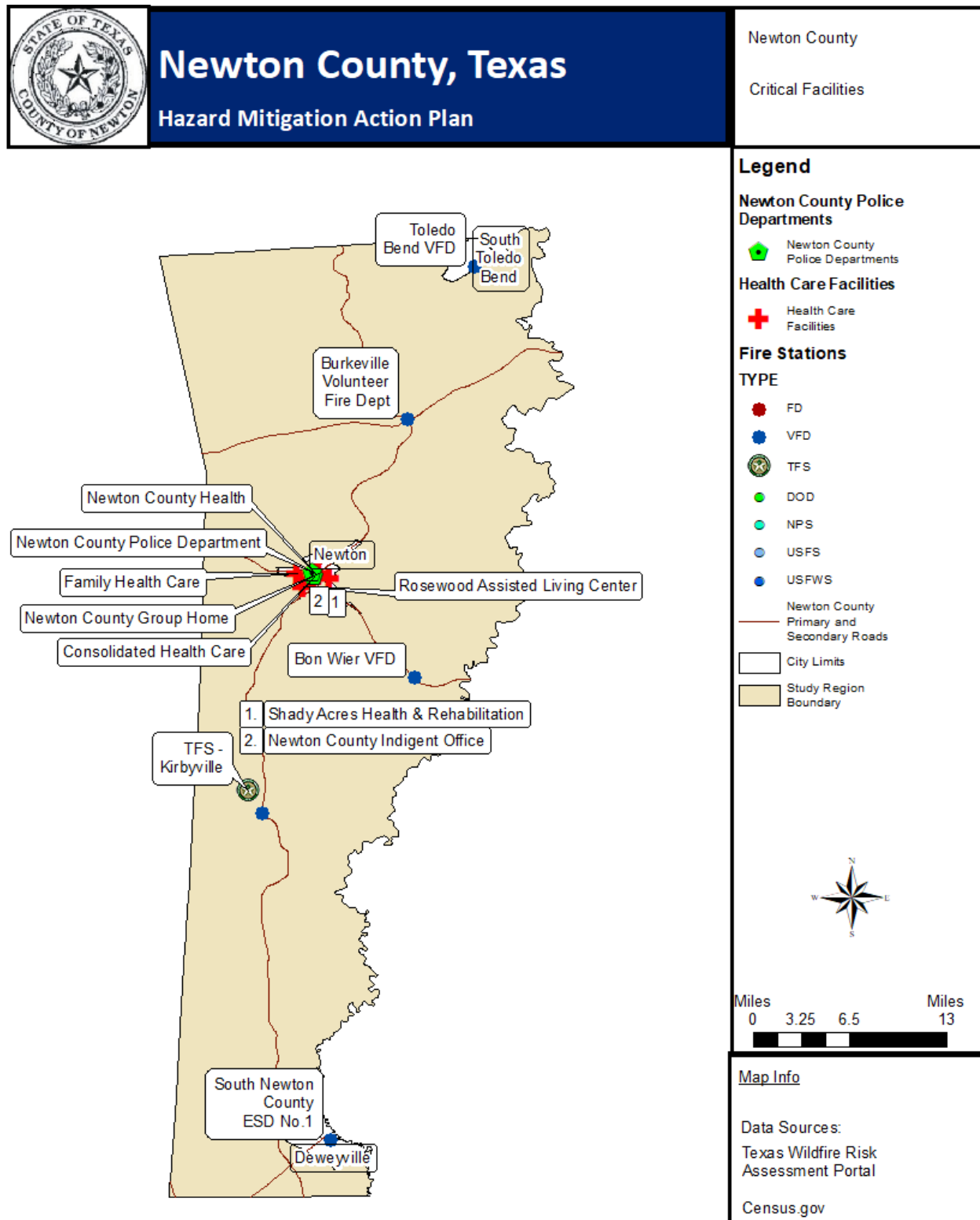


Figure 4.6–3 Fire Stations, Newton County

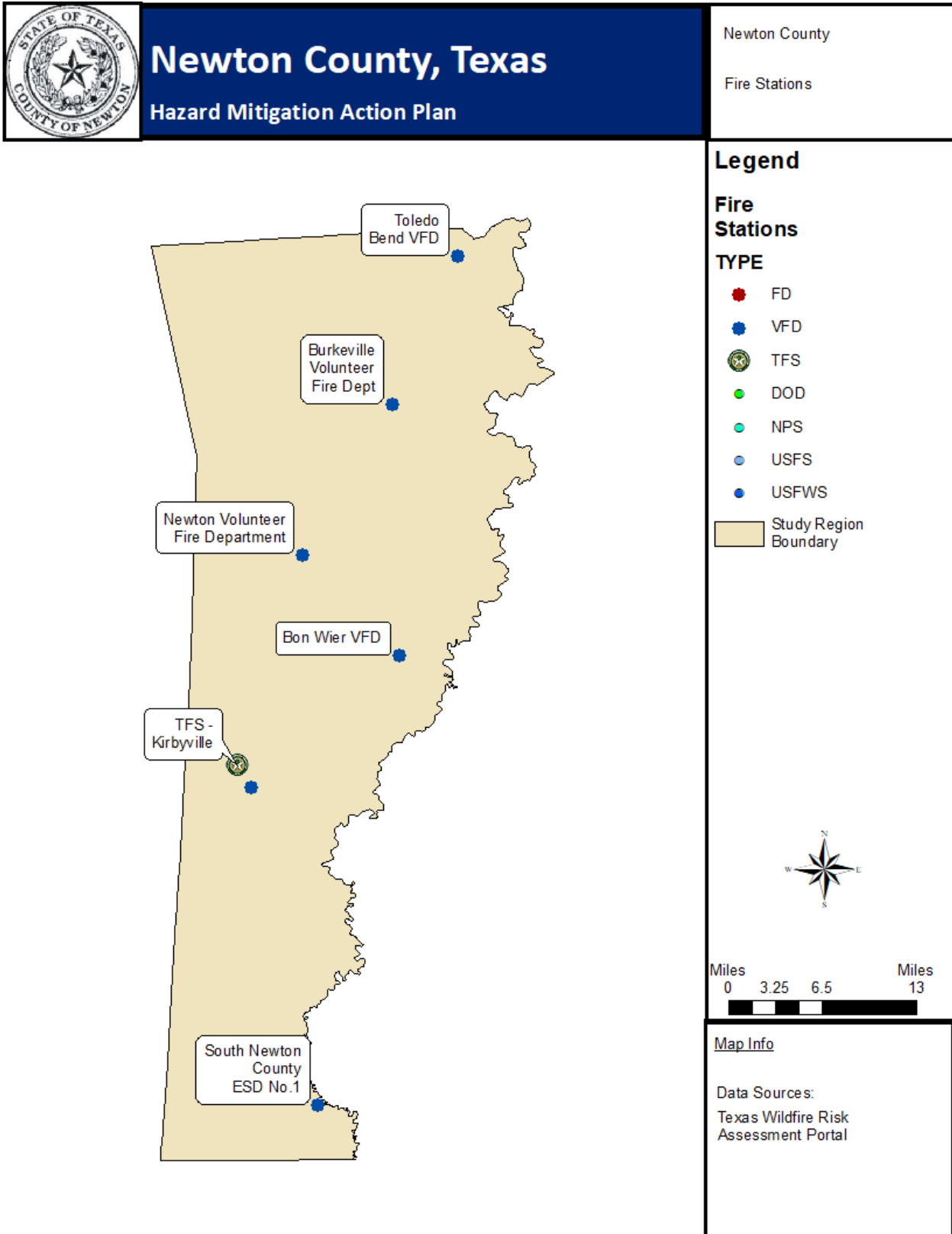
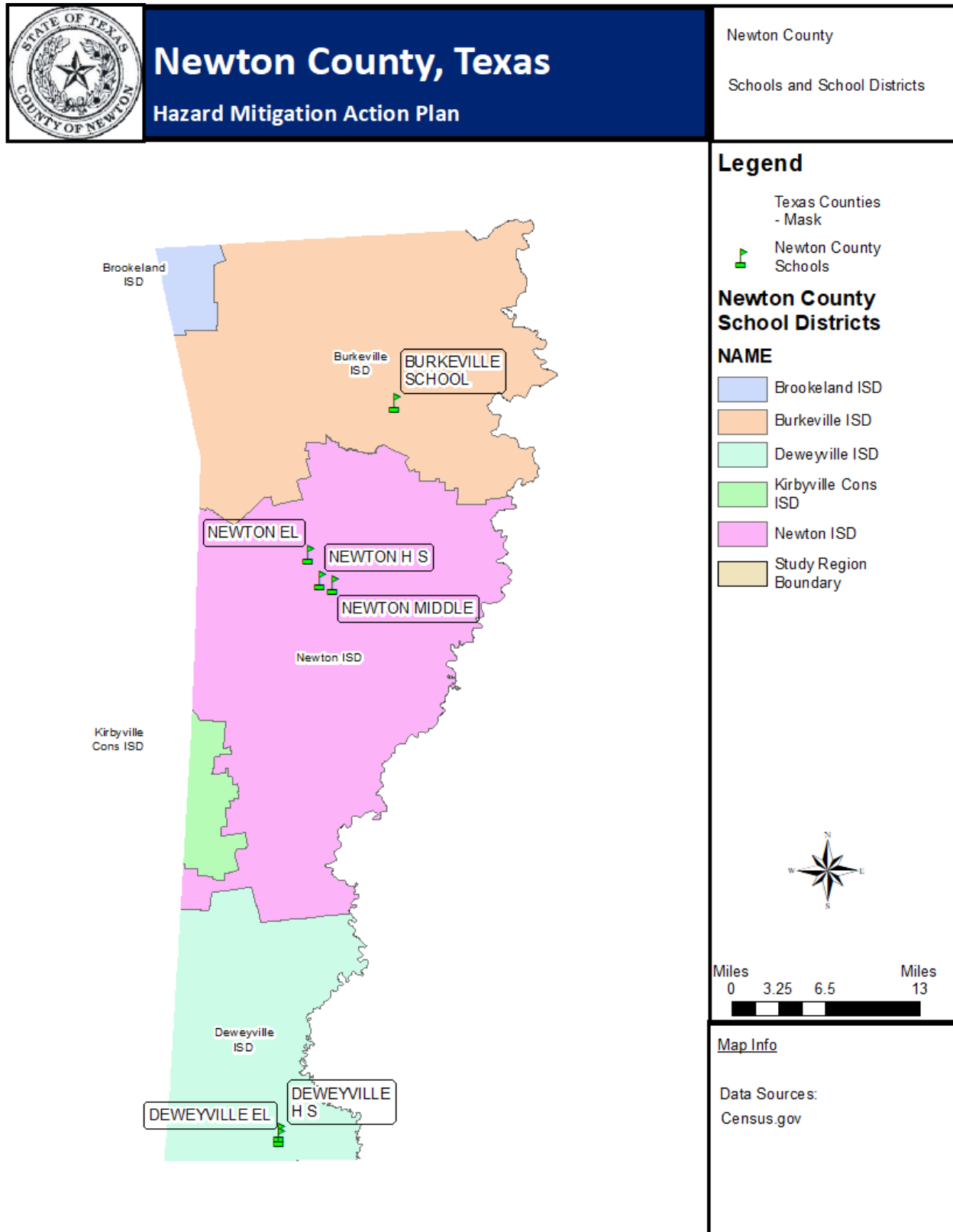


Figure 4.6–4 Schools and School Districts, Newton County



4.6.4 Vulnerable Populations

Vulnerable populations can be defined as persons that may not be able to assist themselves during an emergency. Vulnerable populations include persons under five (5) years of age, over 65, persons with disabilities, and below average income. Mitigation efforts that consider the needs, abilities, and location of vulnerable populations are particularly important. Newton County has above average percentage of population over 65, below federal poverty level, and disabled when compared to the U.S. overall. Listed below in the following tables, vulnerable population information from the 2020 U.S. Census is the best available data for Newton County, the City of Newton, and the Census – Designated Places of Deweyville and South Toledo Bend.

Table 4.6–4 Vulnerable Populations, Newton County

JURISDICTION	NUMBER OF PERSONS	PERCENTAGE OF COUNTY	PERCENTAGE OF TEXAS	PERCENTAGE OF US	COUNTY – US DIFFERENCE
UNDERAGE 5	538	4.4%	7.0%	6.0%	(+) 1.6%
OVER AGE 65	2,541	20.8%	12.5%	16.0%	(+) 4.8%
DISABLED*	2,040	16.7%	11.5%	12.7%	(+) 4.0%
BELOW FEDERAL POVERTY LEVEL	3,152	25.8%	14.2%	12.8%	(+) 13.0%
TOTAL POPULATION	12,217	–	–	–	–

Source: US Census Bureau

*Note: The U.S. Census defines a person as having a work disability if one or more of the following conditions are met:

Persons with health problem or disability which prevents work or limits the kind or amount of work they can do

Persons who have retired or left a job for health reasons

Persons currently not in the labor force because of a disability.

Persons who did not work at all in the previous year because of illness or disability

Under 65 years old and covered by Medicare in previous year.

Under 65 years old and received Supplemental Security Income (SSI) in previous year.

Received VA disability income in previous year.

Table 4.6–5 Vulnerable Populations, City of Newton

JURISDICTION	NUMBER OF PERSONS	PERCENTAGE OF CITY	PERCENTAGE OF TEXAS	PERCENTAGE OF US	CITY – US DIFFERENCE
UNDERAGE 5	124	7.6%	7.0%	6.0%	(+) 1.6%
OVER AGE 65	330	20.2%	12.5%	16.0%	(+) 4.2%
DISABLED*	279	17.1%	11.5%	12.7%	(+) 4.4%
BELOW FEDERAL POVERTY LEVEL	500	30.6	14.2%	12.8%	(+) 17.8%
TOTAL POPULATION	1,633	–	–	–	–

Source: US Census Bureau

*Note: See notes from Table 4.6–4 for definitions pertaining to Disabled status.

Table 4.6–6 Vulnerable Populations, Census-Designated Place (CDP) of Deweyville

JURISDICTION	NUMBER OF PERSONS	PERCENTAGE OF CDP	PERCENTAGE OF TEXAS	PERCENTAGE OF US	CDP – US DIFFERENCE
UNDERAGE 5	11	2.0%	7.0%	6.0%	(–) 4.0%
OVER AGE 65	118	20.7	12.5%	16.0%	(+) 4.7%
DISABLED*	115	20.1%	11.5%	12.7%	(+) 7.4%
BELOW FEDERAL POVERTY LEVEL	69	12.0%	14.2%	12.8%	(–) 0.8%
TOTAL POPULATION	571	–	–	–	–

Source: US Census Bureau

Note: Though not a city, Deweyville is identified as a Census-Designated Places.

*Note: See notes from Table 4.6–4 for definitions pertaining to Disabled status.

Table 4.6–7 Vulnerable Populations, Census-Designated Place of South Toledo Bend

JURISDICTION	NUMBER OF PERSONS	PERCENTAGE OF CDP	PERCENTAGE OF TEXAS	PERCENTAGE OF US	CDP – US DIFFERENCE
UNDERAGE 5	0	0.0%	7.0%	6.0%	(–) 6.0%
OVER AGE 65	167	38.4%	12.5%	16.0%	(+) 22.4%
DISABLED*	177	40.8%	11.5%	12.7%	(+) 28.1%
BELOW FEDERAL POVERTY LEVEL	63	14.6%	14.2%	12.8%	(+) 1.8%
TOTAL POPULATION	434	–	–	–	–

Source: US Census Bureau

Note: Though not a city, South Toledo Bend is identified as a Census-Designated Places.

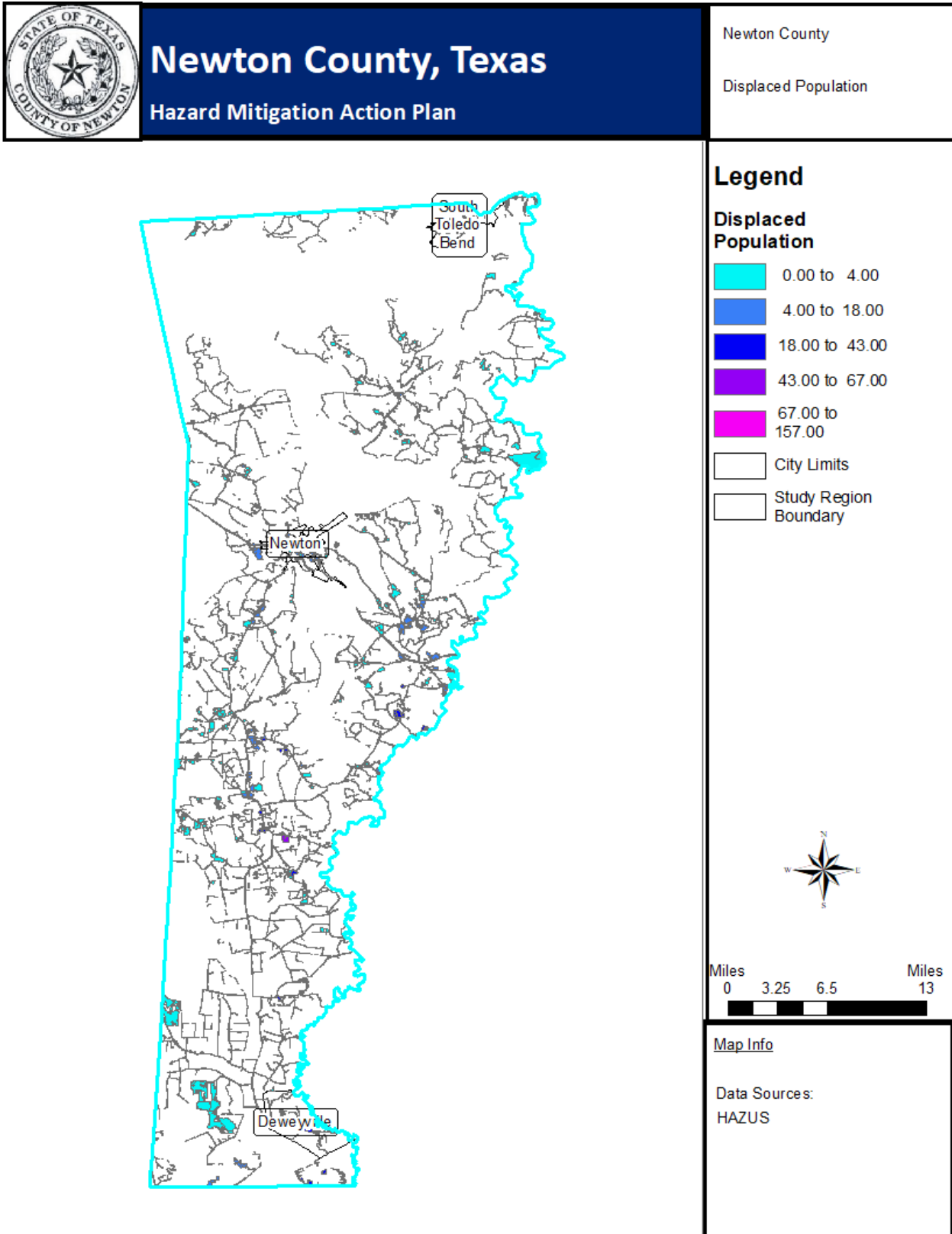
*Note: See notes from Table 4.6–4 for definitions pertaining to Disabled status.

As shown in the tables above, the County and listed communities in general have an above average proportion of vulnerable populations relative to the U.S. overall. More detailed data is not available that further identifies the location of vulnerable populations relative to hazard prone areas, though anecdotal reports of concentrations of vulnerable populations in the neighborhoods of Indian Lake, Camp House Road, and River Oaks was presented by the HMC. Flooding, dam failure, and hurricanes pose the greatest risk to these communities, and frequently these neighborhoods are cut off from main roads due to floodwaters resulting in temporary displacement and/or dangerous ingress-egress by boat.

Information in Section 4.6.5 (Small and Impoverished Community Status) includes metrics for mitigation capabilities as it relates to protection of vulnerable populations. Additional information regarding the location of vulnerable populations is presented in Section 4.6.8 (Vulnerable Structures) for homes and businesses in flood zones and the urban-wildland interface; and in Dam Failure and Hazardous Materials profiles.

Figure 4.6–5 on the following page was developed using FEMA's HAZUS MH MR-4 loss estimation software. This map estimates the potential number of residents displaced by a '100- year flood event' as defined by the software program. Populations potentially displaced are shown by Census Block for the county. It should be noted that this map is based on 2020 population estimates, and the defined floodplain may differ from FEMA Flood Insurance Rate Maps. Flood hazard areas developed using HAZUS methods derived from USGS National Elevation Dataset information and hydrologic analysis. As expected, the census blocks nearer the Sabine River tend to have higher displaced population values. There are also high displaced population values between Newton and Trout Creek along Thickety, White Oak, and Big Cow Creeks, among others.

Figure 4.6–5 Displaced Persons, Newton County



4.6.5 Small and Impoverished Community Status

Based on recent economic analysis, communities in the planning area qualified for the Texas Water Development Board Economically Distressed Area Program (EDAP). The U.S. Census reports data pertaining to small and impoverished community status for Newton County, the City of Newton, and the Census-Designated Places of Deweyville and South Toledo Bend. Information including percentage of vacant housing units, median income, poverty data and unemployment rate are all indicators for disadvantaged communities and those with higher-than-average vulnerability.

Table 4.6–8 Small and Impoverished Community Data, Newton County

JURISDICTION	NUMBER	PERCENTAGE OF COUNTY	TEXAS	US	COUNTY – US DIFFERENCE
VACANT HOUSING UNITS (2020)	1,397	21.9%	9.5%	9.7%	(+) 12.2%
VETERANS	1,051	8.6%	6.8%	7.1%	(+) 1.5%
DISABLED*	2,040	16.7%	11.5%	12.7%	(+) 4.0%
MEDIAN HOUSEHOLD INCOME (2020)	\$40,690	–	\$63,826	\$64,994	(–) \$24,304
MEDIAN HOUSEHOLD INCOME (2000)	\$35,684	–	51,398	\$54,058	(–) \$18,374
BELOW FEDERAL POVERTY LEVEL	3,152	25.8%	14.2%	12.8%	(+) 13.0%
UNEMPLOYMENT RATE (2020)	1,356	11.1%	7.7%	8.1%	(+) 3.0%
UNEMPLOYMENT RATE (2000)	965	7.9%	4.3%	4.0%	(+) 3.9%

Source: US Census Bureau, US Bureau of Labor Statistics, Texas A&M University: Texas Real Estate Research Center

*Note: See notes from Table 4.6–4 for definitions pertaining to Disabled status.

Table 4.6–9 Small and Impoverished Community Data, City of Newton

JURISDICTION	NUMBER	PERCENTAGE OF CITY	TEXAS	US	CITY – US DIFFERENCE
VACANT HOUSING UNITS (2020)	126	16.2%	9.5%	9.7%	(+) 6.5%
VETERANS	168	10.3%	6.8%	7.1%	(+) 3.2%
DISABLED*	279	17.1%	11.5%	12.7%	(+) 4.4%
MEDIAN HOUSEHOLD INCOME (2020)	\$33,077	–	\$63,826	\$64,994	(–) \$31,917
MEDIAN HOUSEHOLD INCOME (2000)	\$35,656	–	51,398	\$54,058	(–) \$18,402
BELOW FEDERAL POVERTY LEVEL	500	30.6	14.2%	12.8%	(+) 17.8%
UNEMPLOYMENT RATE (2020)	181 (est.)	11.1% (est.)	7.7%	8.1%	(+) 3.0%
UNEMPLOYMENT RATE (2000)	194 (est.)	7.9% (est.)	4.3%	4.0%	(+) 3.9%

Source: US Census Bureau, US Bureau of Labor Statistics, Texas A&M University: Texas Real Estate Research Center

*Note: See notes from Table 4.6–4 for definitions pertaining to Disabled status.

Table 4.6–10 Small and Impoverished Community Data, CDP of Deweyville

JURISDICTION	NUMBER	PERCENTAGE OF CDP	TEXAS	US	CDP – US DIFFERENCE
VACANT HOUSING UNITS (2020)	59	20.4%	9.5%	9.7%	10.7%
VETERANS	41	7.1%	6.8%	7.1%	0.0%
DISABLED*	115	20.1%	11.5%	12.7%	(+) 7.4%
MEDIAN HOUSEHOLD INCOME (2020)	N/A	–	\$63,826	\$64,994	N/A
MEDIAN HOUSEHOLD INCOME (2000)	\$30,714	–	51,398	\$54,058	(–) \$23,344
BELOW FEDERAL POVERTY LEVEL	69	12.0%	14.2%	12.8%	(–) 0.8%
UNEMPLOYMENT RATE (2020)	63 (est.)	11.1% (est.)	7.7%	8.1%	(+) 3.0%
UNEMPLOYMENT RATE (2000)	94 (est.)	7.9% (est.)	4.3%	4.0%	(+) 3.9%

Source: US Census Bureau, US Bureau of Labor Statistics, Texas A&M University: Texas Real Estate Research Center

Note: Though not a city, Deweyville is identified as a Census-Designated Places.

*Note: See notes from Table 4.6–4 for definitions pertaining to Disabled status.

Table 4.6–11 Small and Impoverished Community Data, CDP of South Toledo Bend

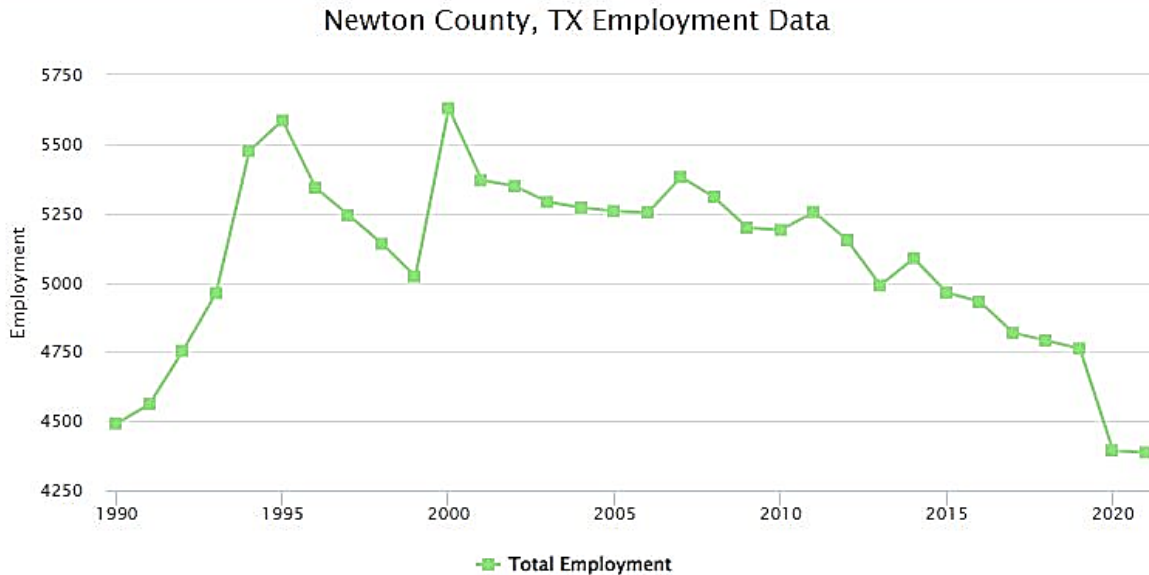
JURISDICTION	NUMBER	PERCENTAGE OF CDP	TEXAS	US	CDP – US DIFFERENCE
VACANT HOUSING UNITS (2020)	464	67.1%	9.5%	9.7%	(+) 57.4%
VETERANS	136	31.4	6.8%	7.1%	(+) 24.3%
DISABLED*	177	40.8%	11.5%	12.7%	(+) 28.1%
MEDIAN HOUSEHOLD INCOME (2020)	N/A	–	\$63,826	\$64,994	N/A
MEDIAN HOUSEHOLD INCOME (2000)	\$37,697	–	51,398	\$54,058	(–) \$16,361
BELOW FEDERAL POVERTY LEVEL	63	14.6%	14.2%	12.8%	(+) 1.8%
UNEMPLOYMENT RATE (2020)	48 (est.)	11.1% (est.)	7.7%	8.1%	(+) 3.0%
UNEMPLOYMENT RATE (2000)	46 (est.)	7.9% (est.)	4.3%	4.0%	(+) 3.9%

Source: US Census Bureau, US Bureau of Labor Statistics, Texas A&M University: Texas Real Estate Research Center

Note: Though not a city, South Toledo Bend is identified as a Census-Designated Places.

*Note: See notes from Table 4.6–4 for definitions pertaining to Disabled status.

The following graph from Texas A&M University's Texas Real Estate Research Center depicts employment trends in Newton County from 1990 to 2020. It should be noted that County unemployment rates nearly doubled between 2019 and 2020, a trend that the rest of the state and county share. This trend has been attributed at least in part to the onset of the COVID-19 pandemic.



Source: Texas A&M University's Texas Real Estate Research Center

4.6.6 Potential Dollar Loss

In this analysis, potential economic losses due to hazard occurrence are estimated, expressed in dollar terms, and based on the best available data. Potential loss projections are estimated under what is considered 'most likely worst-case scenario', for each hazard type. This subjective approach to potential dollar loss estimates losses resulting from the most severe event occurrence possible within a 0-99 percent probability parameter (less than one percent of occurrences would exceed the estimated severity).

Potential Dollar Loss, General Hazards

For hazards other than flooding and hurricanes (developed in individual analyses in the following subsection), the Hazard Mitigation Committee developed estimates for property losses and commercial activity losses based on data from previous occurrences and general evaluation of potential impact. These estimates are based on approximations of 'most likely worst-case scenarios' for each hazard and are subjective and hypothetical. For potential dollar loss to structures and contents, differentiation of impact across the various development types (residential, commercial, industrial, etc.) was not developed, but rather is reported as a static value for estimated loss based on total replacement value within each category. Table 4.6–12 on the following page outlines potential dollar losses to structures and personal property for a range of identified hazard types, followed by Table 4.6–13 which shows estimated economic impacts to commercial activity for all industrial/commercial sectors.

Table 4.6–12 Estimated Potential Dollar Loss by Type, Structures and Contents, Newton County

DEVELOPMENT TYPE	TOTAL REPLACEMENT VALUE	DAM FAILURE (–10.0% TRV)	THUNDERSTORM (–5.0% TRV)	TORNADO (–5.0% TRV)	WILDFIRE (–5.0% TRV)	DROUGHT, EXCESSIVE HEAT, HAZARDOUS MATERIALS, WINTER STORM (–2.0% TRV)
RESIDENTIAL	649,842,000	64,984,200	32,492,100	32,492,100	64,984,200	12,996,840
COMMERCIAL	21,915,000	2,191,500	1,095,750	1,095,750	2,191,500	438,300
INDUSTRIAL	8,594,000	859,400	429,700	429,700	859,400	171,880
AQRICULTURE	2,481,000	248,100	124,050	124,050	248,100	49,620
RELIGION	10,929,000	1,092,900	546,450	546,450	1,092,900	218,580
GOVERNMENT	4,144,000	414,400	207,200	207,200	414,400	82,880
EDUCATION	17,946,000	1,794,600	897,300	897,300	1,794,600	358,920
TOTAL	715,851,000	71,585,100	35,792,550	35,792,550	71,585,100	14,317,020

Source: HAZUS MH – MR3 (replacement value data)

Note: All figures in USD (\$)

Table 4.6–13 Estimated Potential Dollar Loss by Type, Commercial Activity, Newton County

DESCRIPTION	ANNUAL RECEIPTS (AR)	DAM FAILURE (–10.0% TRV)	DROUGHT (–5.0% AR)	EXCESSIVE HEAT (–2.0% AR)	HAZARDOUS MATERIALS (–5.0% TRV)	THUNDERSTORM (–5.0% TRV)	TORNADO (–5.0% TRV)	WILDFIRE (–5.0% TRV)	WINTER STORM (–2.0% TRV)
TOTAL FOR ALL INDUSTRY SECTORS	\$23,013,000	\$2,301,300	\$1,150,650	\$460,260	\$1,150,650	\$230,130	\$230,130	\$9,205,200	\$460,260

Source: HAZUS MH – MR3 (replacement value data)

Note: All figures in USD (\$)

Potential Dollar Loss, Flood

FEMA's HAZUS Loss Estimation Program was employed to develop potential dollar loss for flooding and hurricanes. Table 4.6–14 outlines the results of potential dollar loss of structures and replacement value by development type for a HAZUS modeled flood event.

Table 4.6–14 Total Structure and Value Inventory, Newton County-HAZUS Flood Model

TYPE OF STRUCTURE (OCCUPANCY CLASS)	TOTAL STRUCTURES COUNTYWIDE	TOTAL IN HAZARD AREA (VULNERABLE TO FLOODING)	TOTAL REPLACEMENT COST COUNTYWIDE	TOTAL REPLACEMENT COST IN HAZARD AREA (VULNERABLE TO FLOODING)	POTENTIAL BUILDING LOSS ACCORDING TO HYPOTHETICAL HAZUS 100-YEAR EVENT
RESIDENTIAL	7,849	4,633	\$ 649,842,000	\$ 391,069,000	\$21,121,000
COMMERCIAL	68	29	\$ 21,915,000	\$ 11,353,000	\$136,000
INDUSTRIAL	26	14	\$8,594,000	\$3,325,000	\$ 97,000
AGRICULTURAL	9	5	\$ 2,481,000	\$2,103,000	\$12,000
RELIGIOUS / NON- PROFIT	13	7	\$10,929,000	\$8,141,000	\$42,000
GOVERNMENT	15	6	\$4,144,000	\$1,769,000	\$8,000
EDUCATION	7	2	\$ 17,946,000	\$ 10,585,000	\$ 33,000
TOTAL	7,987	4,696	\$ 715,851,000	\$ 428,345,000	\$21,449,000

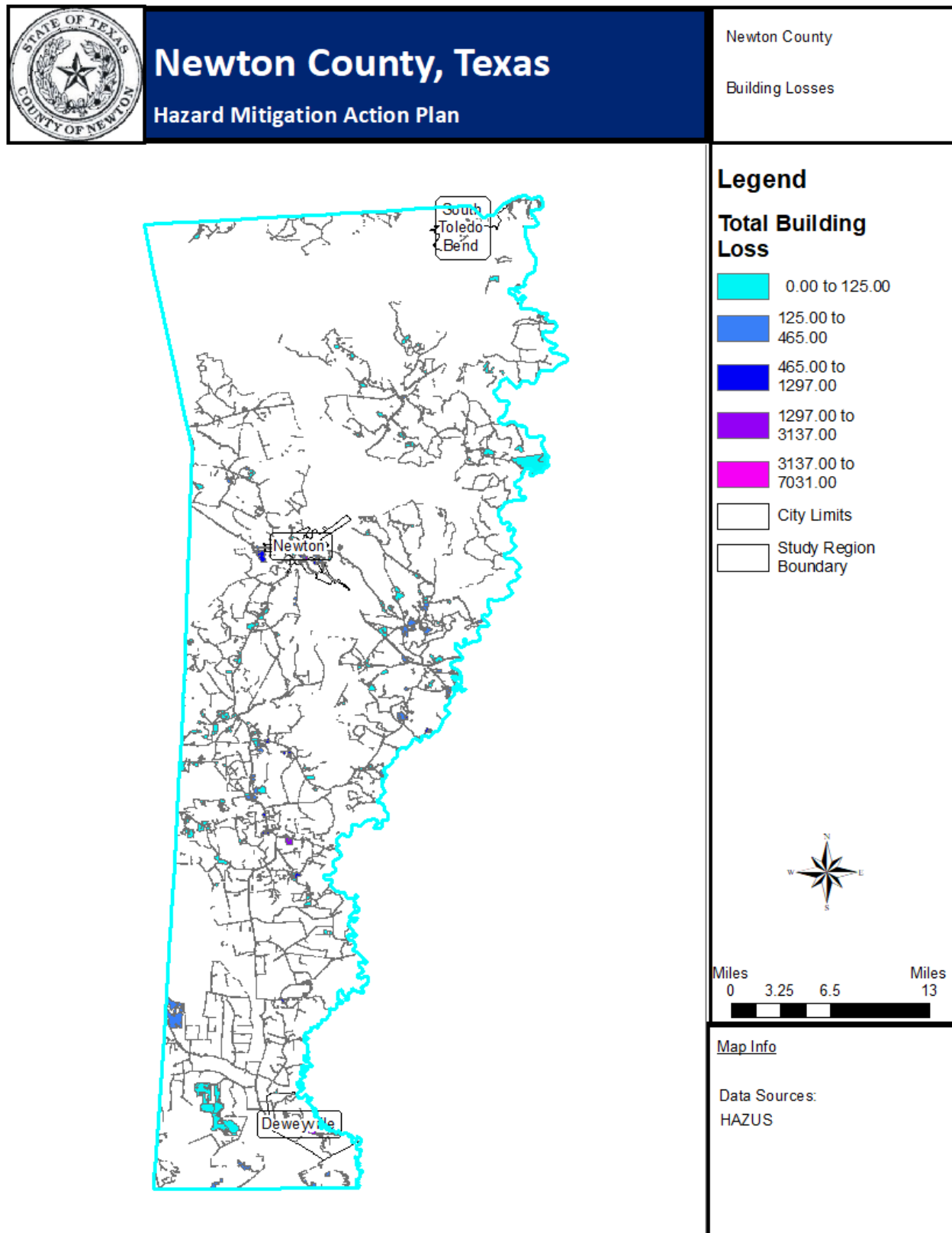
Source: HAZUS MH – MR3 (replacement value data)

Note: All figures in USD (\$)

A secondary source of potential dollar loss analysis for flooding specific to the Sabine River communities is developed in the U.S. Army Corps of Engineers Lower Sabine Section 905b Analysis, Reconnaissance Report 2004. Using a discount rate of 5 7/8 percent and 2002 property values, it estimates the annual total of flood caused damage in the five counties and parishes that comprise the lower Sabine River Basin floodplain is \$3,000,000 per year. Annual property damage to urban and suburban structures is conservatively estimated at 32 percent (32%) of that total, or \$960,000 per year, with 10 percent of the annual total relating to agricultural losses, and 58 percent non-agricultural (roads, infrastructure, utilities, etc.). Assuming an equivalent proportion of damage for each of the counties and parishes, Newton County's share of annual flood losses to residential structures is \$192,000, \$60,000 in agricultural damage, \$348,000 in non-agricultural damage, and \$600,000 total annual damage in the Sabine River floodplain.

Figure 4.6 – 6 on the following page shows concentrations of potential residential building losses due to flooding as estimated by FEMA HAZUS MH MR-4 loss estimation software. Based on this analysis method, somewhat scattered areas of east central and southeastern Newton County have the highest concentrations of residential property value at risk from flooding impact.

Figure 4.6–6 Building Losses, Newton County



4.6.7 Land Use and Development Trends

Trends in Floodplain Development

Land use and development trends in Newton County include a steady migration of residential and commercial/public structures away from flood prone areas. This is due in large part to acquisition-relocation projects funded by FEMA mitigation grants from 2006-2021 and ongoing. It is expected that current and future flood prone property acquisition projects will continue to create opportunities for people to move away from hazard prone areas and into safer neighborhoods and communities.

Almost 300 flood prone properties in the floodway/floodplain of the Sabine River have been acquired by the County and converted to open space since the acquisition project began in 2006. Funding has recently been approved to acquire fifty-six (56) more structures under DR-4332.

Housing Construction Trends

The US Census reports 6,447 housing units in Newton County with an owner-occupied housing unit rate of 82.5%, a rate nearly 20% higher than the state figure.

Furthermore, in the March 2016 Sabine River Flood (DR-4266), an estimated 800 housing units were destroyed, and an additional 300 homes were impacted. Replacement of this damaged housing will likely lead to an even greater degree of new or newer housing in Newton County.

Public Facilities Trends

Notable planned migration of public facilities include relocation of the county sub-courthouse, elementary and middle schools, south library, south fire station, and maintenance barn away from flood prone locations to new locations approximately 5 miles to the east. The planned Interstate 14 will route through northern Newton County toward Fort Polk in Leesville, LA, and a major bridge replacement occurred for the Highway 63-Burr Ferry Bridge in 2020.

Industrial Facilities Trends

A major pumping station is planned in the floodway of the Sabine River in the southern portion of the County. Also, numerous cell phone towers are under construction or planned across Newton County. Major networks of fiber-optics lines have been routed in late 2016 and 2017. Engineering for a rural broadband project for the planning area is underway at the time of this writing. In February of 2022, it was announced that a \$1.7 billion refinery will bring 100+ jobs to the county in the next few years.

Other Anticipated Development

The most prominent source of development activity over the last decade has been the rebuilding or relocation of homes that were destroyed in Hurricanes Rita (2005), Hurricane Ike (2008), major flooding in May and October 2015 (DR-4223, 4245) and the catastrophic floods of March 2016 (DR-4266). Activity in the last planning period includes Hurricane Harvey in 2017 (DR-4332), Hurricane Laura (DR-4572) and COVID-19 (DR-4485) of 2020, and the Severe Winter Storm of 2021 (DR-4586). Any future development in Special Flood Hazard Areas is required to be with the County Flood Damage Prevention Order, constructed to meet elevation requirements in accordance with the County's Floodplain Development ordinance.

4.6.8 Vulnerable Structures

Due to the location of the planning area within a region of the U.S. that experiences relatively frequent hazard events with catastrophic magnitude and geographic scale, all structures in Newton County can be considered vulnerable to disaster impacts. A subset of the complete inventory of structures in the planning area are those with unique propensity to damage from hazard events, either due to architectural design, building material type, location, or combination of these factors. This subsection discusses the location and concentrations of structures that fall into this subset, starting with Table 4.6–15 that estimates type and number of existing and future structures in hazard areas, followed by discussions of mobile home parks, homes and businesses in floodplains, and an inventory of structures located in areas particularly vulnerable to wildfire impacts.

Table 4.6–15 Existing Structures in Relation to Hazard Areas: Number and Type

TYPE OF STRUCTURE (OCCUPANCY CLASS)	TOTAL STRUCTURES	DAM FAILURE RISK AREA	DROUGHT RISK AREA	EXCESSIVE HEAT RISK AREA	FLOOD RISK AREA	HAZ. MAT. RISK AREA	HAIL RISK AREA	HURRICANE RISK AREA	LIGHTNING RISK AREA	WIND-STORM RISK AREA	TORNADO RISK AREA	WILDFIRE RISK AREA	WINTER STORM RISK AREA
RESIDENTIAL	8,469	1,859	8,469	8,469	1,386	5,492	8,469	8,469	8,469	8,469	8,469	1,406	8,469
COMMERCIAL	78	17	78	78	13	50	78	78	78	78	78	13	78
INDUSTRIAL	26	6	26	26	4	17	26	26	26	26	26	4	26
AGRICULTURAL	9	2	9	9	1	6	9	9	9	9	9	1	9
RELIGIOUS	17	4	17	17	3	11	17	17	17	17	17	3	17
GOVERNMENT	17	2	17	17	2	11	11	17	11	17	17	3	17
EDUCATION	9	3	9	9	3	6	9	9	9	9	9	1	9
TOTAL	8,615	1,891	8,615	8,615	1,410	5,587	8,615	8,615	8,615	8,615	8,615	1,430	8,615

Source: HAZUS MH – MR3 (replacement value data)

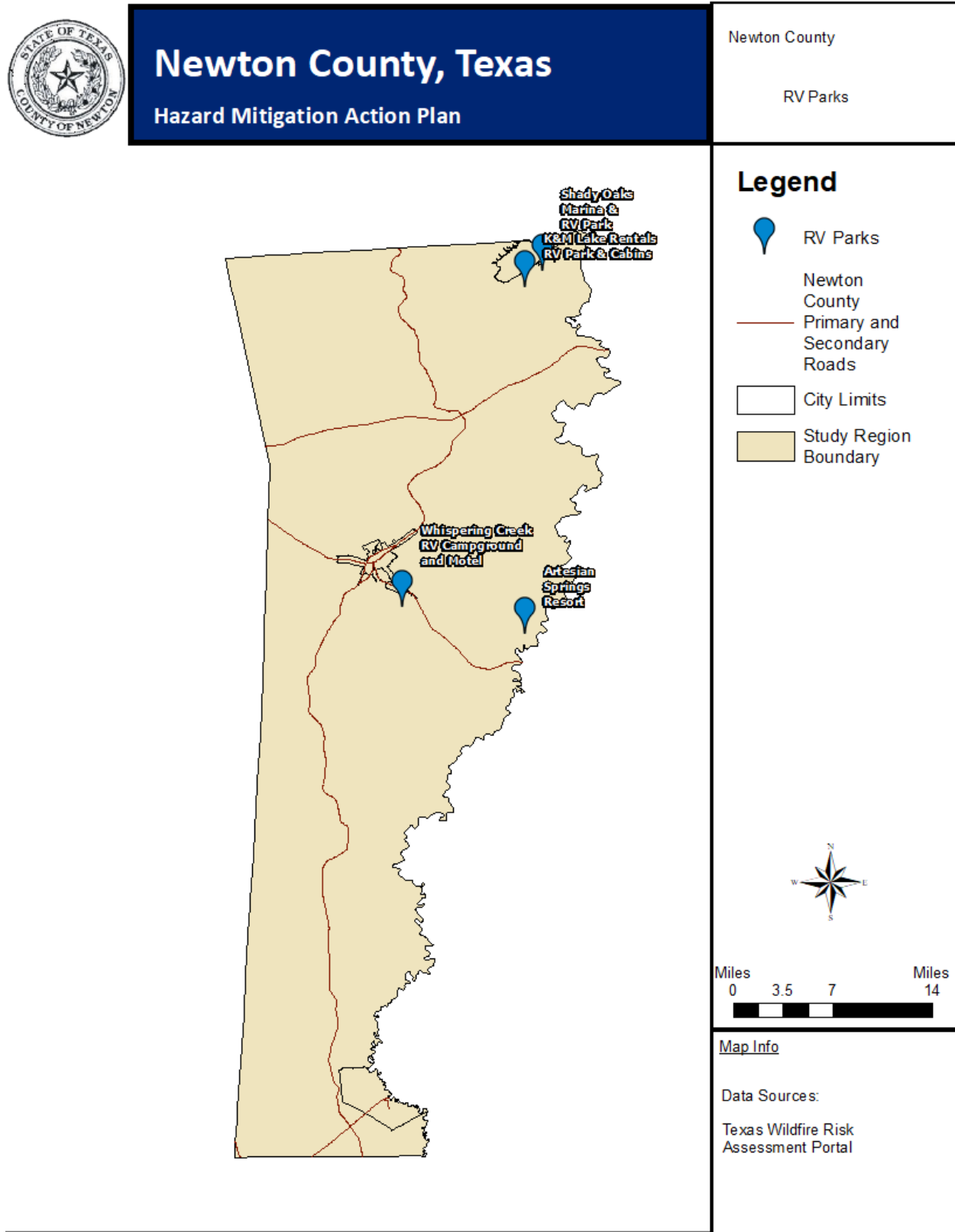
Note: All figures in USD (\$)

Future structures are expected to be located and constructed in accordance with the County's Floodplain Development Ordinance and all applicable building codes, foundation design ordinances, etc. For example, in recent years, a proposed moderate sized housing project in the City of Newton was relocated to accommodate floodplain considerations. No other major residential or commercial developments are anticipated at this time. Limited construction of residential development in rural areas can be expected over the next 5-year planning cycle and should be consulted to consider hazard conditions with regard to site choice and design.

Mobile Home Parks

Based on a number of factors including the method and materials used to fasten mobile homes to their foundation, weight to surface area ratios, and building material characteristics, mobile homes are considered more vulnerable to hazard impacts than certain other structure types. The safety of inhabitants, bystanders, and first responders is the primary concern, as mobile homes can become dislodged from their foundation or break apart during flood, high wind, and tornado events. Other considerations include secondary property and infrastructure damage and the environmental impacts of broken sewer lines. Newton County has four recreational vehicle or trailer parks identified by the HMC, which are shown on the map below.

Figure 4.6–7 Mobile Home Parks, Newton County



Urban-Wildland Interface

In general terms, structures located outside the fringes of cities and towns have notably higher propensity for wildfire impacts. This includes both individual home units that are relatively isolated from other development, and rural neighborhoods with variable physical layouts. Wildfire vulnerability is higher in these areas due to a number of factors. Fire detection and response is typically slower in outlying areas than in cities and towns, water supply and fire-fighting resources are more limited, and density of fuels (trees, brush, tall grass, etc.) generally increases along with distance from urban centers and communities.

4.6.9 City of Newton Risk Assessment

This section details risk and vulnerability factors for the City of Newton. Certain identified hazards affect the planning area comparability, such as drought, winter storm and excessive heat. Probability, severity, and vulnerability for other hazards may vary based on location, such as flooding, hurricanes, and wildfires. With that in mind, this subsection identifies risk characteristics that are unique to the City of Newton as distinguishable from the planning area overall.

Overall vulnerability, probability of occurrence, and magnitude and severity for some of the identified hazards are somewhat lower than the county as a whole. This is due in part to a smaller geographic footprint, and due to its location relative to the Sabine River and Gulf of Mexico.

Dam and levee failure vulnerability is low for the City of Newton, due to its distance from dam failure inundation areas and lack of levees. Vulnerability to wildfire is slightly lower than county overall due to concentration of firefighting resources and relatively lower fuel volumes in the city limits. Vulnerability to hazardous materials incidents involving road transport considers the two main highways running through town. Vulnerability to flooding is marginally lower than the county overall, with no city facilities located in flood hazard areas and a relatively small number of homes located along the east side of Caney Creek.

Probability, magnitude, and severity follow the general trend for overall vulnerability per hazard type for the City of Newton. As the city has a smaller geographic profile than the county, probability to certain hazards (especially tornado) is correspondingly lower. Also, as it is situated in the northern half of the county, probability and severity to hurricane impact is marginally lower than southern portions of the county, though probability is still high and severity potentially catastrophic. Table 4.6–16 summarizes the probability of occurrence and magnitude and severity assessments from the individual hazard profiles detailed in Sections 5.1 through 5.14.

Based the definitions established in Section 4.4 (also below in the table notes), Table 4.6–16 below shows an assessment of overall probability and severity for the City of Newton for each of the identified hazards.

Table 4.6–16 Overall Vulnerability and Impact by Hazard Type, City of Newton

HAZARD	PROBABILITY	SEVERITY	OVERALL RANKING
CYBER ATTACK	Unlikely	Major	LOW
DAM FAILURE	Unlikely	Minor	LOW
DROUGHT	Likely	Minor	MODERATE
EXCESSIVE HEAT	Likely	Minor	MODERATE
FLOOD	Highly Likely	Catastrophic	VERY HIGH
HAIL	Likely	Minor	MODERATE
HAZARDOUS MATERIALS	Occasional	Major	LOW
HIGH WINDS	Likely	Major	HIGH
HURRICANE	Highly Likely	Catastrophic	VERY HIGH
LIGHTNING	Likely	Minor	MODERATE
PANDEMIC	Unlikely	Catastrophic	MODERATE
TORNADO	Likely	Major	MODERATE
WILDFIRE	Likely	Major	MODERATE
WINTER STORM	Occasional	Minor	LOW

Source: Newton County HMC

Notes: Overall probability classifications are defined as follows:

- Highly Likely – probable in the next year
- Likely – probable in the next three years
- Occasional – probable in the next five years
- Unlikely – probable in the next ten years

Severity classifications are defined as follows:

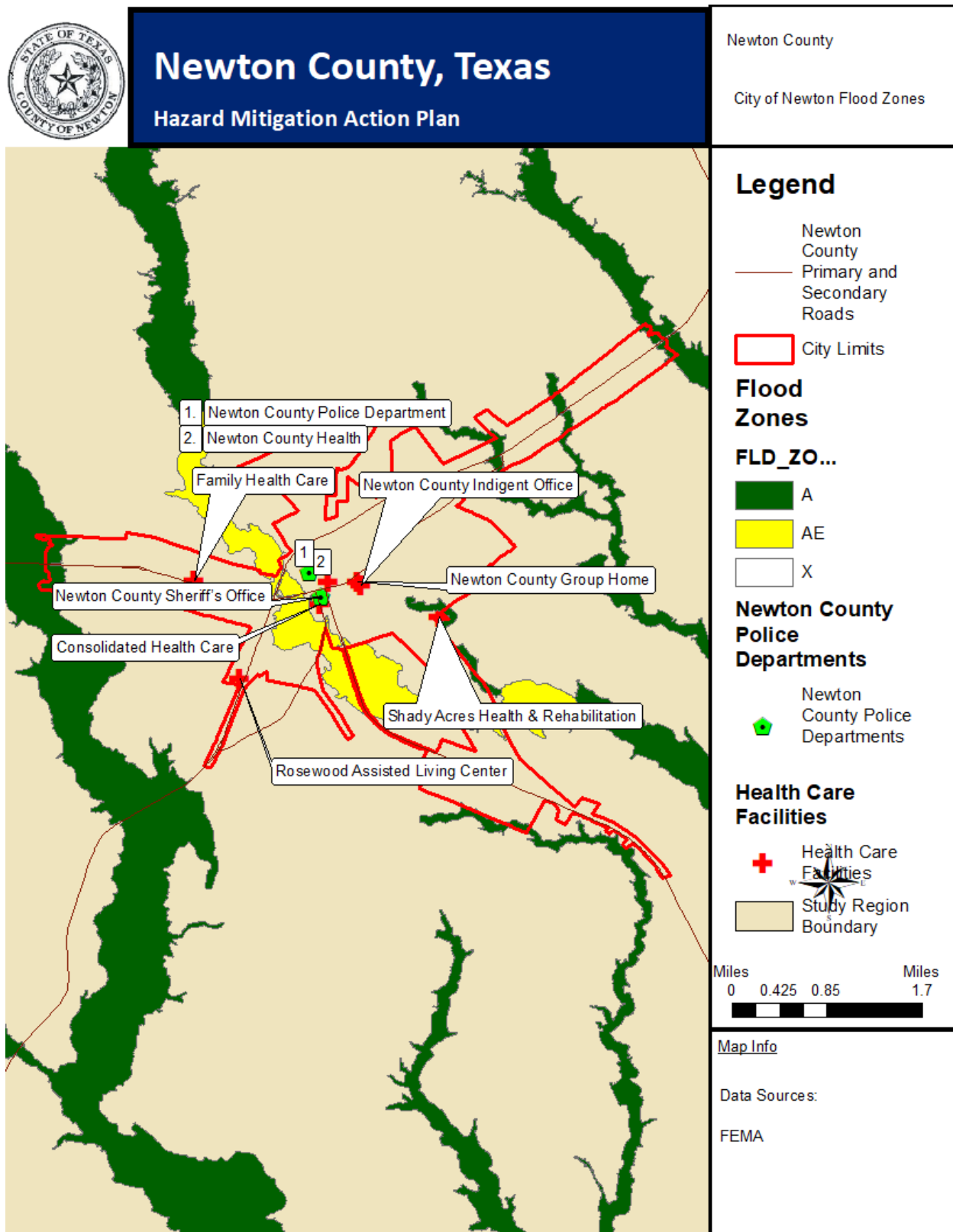
- Catastrophic – Severe property damage on a regional or metropolitan scale; shutdown of critical facilities, utilities and infrastructure for extended periods; and/or multiple injuries and fatalities
- Major – Severe property damage on a neighborhood scale; temporary shutdown of critical facilities, utilities and infrastructure; and/or injuries or fatalities
- Minor – Isolated occurrences of moderate to severe property damage; brief shutdown of critical facilities, utilities and infrastructure; potential injuries
- Negligible – Isolated occurrences of minor property damage; minor disruption of critical facilities, utilities and infrastructure; potential minor injuries

Overall Ranking classifications are defined as follows:

- Very High – High probability of future occurrence and potentially catastrophic severity.
- High – Moderate/high probability of future occurrence and potentially critical severity.
- Moderate – Moderate/high probability of future occurrence and limited potential severity.
- Low – Low/moderate probability of future occurrence and negligible/limited potential severity.

Figure 4.6–8 on the following page shows the relationship of facilities in Newton to the 100-year floodplain as defined on FEMA Flood Insurance Rate Maps (FIRMs). As the map shows, there are properties in the city limits located near or in the floodplain of Caney Creek. Other facilities in the City of Newton including City Hall, the County Courthouse, Sheriff's Office and County Jail, airport, clinics, and schools are located outside of floodplain areas, but still could be impacted by hurricanes, thunderstorms, tornados, et al.

Figure 4.6–8 Critical Facilities in Relation to Flood Zones, City of Newton



SECTION 5: RISK ASSESSMENT

44 CFR 201.6(c) Plan content. The plan must include the following:

- (3) A *risk assessment* that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment must include:
 - (i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan must include information on previous occurrences of hazard events and on the probability of future hazard events.
 - (iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

The hazard profiles that follow include general descriptions of the hazard, the geographic area affected, information of previous occurrences, and assessments of probability of future occurrence, magnitude and severity, and overall vulnerability to each hazard identified as relevant to the planning area. Hazard profiles are organized alphabetically for ease of reference and order of appearance does not infer relative importance.

5.1 CYBER ATTACK

5.1.1 Hazard Description

A cyberattack is any offensive maneuver targets computer information systems, infrastructures, computer networks, and personal computer devices with malicious intent. The malicious act usually originates from an anonymous individual or organization that either steals, alters, or destroys a specified target by hacking into a susceptible system.

Protective actions that participating jurisdictions can implement quickly and easily include the following:

- Use strong passwords and two-factor authentication.
- Watch for suspicious activity. When in doubt, do not click!
- Protect government Wi-Fi networks.
- Keep software up to date and use antivirus solutions to block threats.
- Encrypt your files when sending sensitive information through emails.
- Regularly up your files.

Cyberattacks can be difficult to prevent against, due to the rapidly evolving world of cyberspace. While other Newton County hazards have easily identifiable sources, like flooding from a failure of the Toledo Bend Dam, a cyberattack can originate from anywhere in the world, take on many different shapes, and have many different targets or objectives. As we become ever more globalized and information technology becomes increasingly integrated with physical infrastructure operations, the risks and consequences associated with a cyberattack grow daily.

This section reviews the hazards to the cybersecurity assets for the Newton County planning area:

Advance Persistent Threats

An advanced persistent threat (APT) is a stealthy and continuous attack on Newton County over a long period of time. “Advanced” signifies the breadth of intelligence-gathering techniques an attacker is capable of employing. “Persistent” implies a specific objective and that this style is not as random as other attacks may be. Often the objective includes the need for long-term access to the server or network.

Data Loss/Leakage

Data loss can be both intentional and unintentional. It could result from a failure to properly backup or have disaster recovery equipment and processes, improper handling of sensitive data by employees, or criminal malicious intent.

Denial Of Service Attacks

A denial-of-service attack (DoS) is the attempt to make a computer or network resource unavailable to its intended users. A DoS attack may come from one or several computers. While a DoS attack may occur frequently and typically can be handled by the County's equipment, a distributed denial of service attack (DDoS) attack can overload the Newton County's network or computer resources resulting in extended downtime. Unlike a DoS attack, a DDoS could be launched from many, often thousands of computers. Often these attacks rely on lower-level network vulnerabilities.

Infrastructure Loss/Failure

Loss of computer and network resources may result from a variety of the other hazards listed in this plan.

Insider Threats

These come from Newton County employees, contractors, and volunteers who have access to the County's computers, networks, and data. An insider can initiate a DoS attack, leak or steal data, infect a device with malware, or sabotage the infrastructure and data.

Malware

Short for "malicious software," malware is a file or code that infects computers, explores networks, or steals information. The most common type of malware are viruses. Usually attached to an email, these files quickly infect a device when opened.

Organized Cybercrime, State-Sponsored Hackers Espionage

Organized cybercrime, which may include state-sponsored cybercrime, are attacks on the Newton County's computers, network, and data by criminal organizations. Often these attacks are well planned out, difficult to identify due to their more limited scope, and can result in extensive damage. The U.S. Department of Homeland Security (DHS) currently identifies Russia and China as the two biggest international state-sponsored cybercrime threats to the United States.

Phishing

Phishing, like its name suggests, involves an attacker attempts to glean information, often financial, via email. These emails are designed to trick the victim into thinking the request is legitimate. The release of sensitive information could lead to financial catastrophe.

Third Party Mismanagement

Reliance on third parties for cyber services implies acceptance of the risk that the third party will properly protect the cyber resources from loss or unavailability.

5.1.2 Location

The entire planning area within Newton County is susceptible to and can be affected by a cyberattack. Cyberattacks are a unique hazard that can be difficult to quantitate. Unlike other hazards such as floods or tornados, there may not be obvious, visible, or immediate repercussions from a cyberattack. A hacker may have accomplished their mission long before the effects are discovered. Additionally, cyberattacks are often random, making it difficult to discern where the threat originated.

5.1.3 Extent

No official index for quantifying the extent of a cyberattack exists. Similarly, there is little an organization can do to predict or project the occurrence or frequency of such events. There may or may not be any warning. Thus, it can be said that the planning area is vulnerable to any threat at any time.

We can make a prediction on the extent of damages based on the parameters and features of the planning area. These are based on previous occurrences and prevalence of each threat in our state and nation as a whole.

Advance Persistent Threats: High

Loss of many computer and network resources could result in significant expenses to repair and recover from the interruption of access to assets.

Data Loss/Leakage: Medium

Data loss and leakage could result in significant remediation expenses given the extremely sensitive nature of much of the information that Newton County manages.

Denial Of Service Attacks: Low

These attacks could result in an extended outage and loss of access for the County. Though this would impact daily schedules and productivity, the economic impact is low.

Infrastructure Loss/Failure: High

Loss of a computer and network resources could result in significant expenses to repair and recover from the interruption of access to assets.

Insider Threats: Medium

Sabotage by an insider can be catastrophic to an organization, depending on what the hacker has accessed. Though the potential for catastrophe is there, Newton County has mitigated this type of threat by performing background checks of all employees, contractors, and volunteers and through enforcing separation of duties across departments.

Malware: High

Newton County is susceptible to malware given its high frequency and increased stealth. Consequences could be catastrophic to extremely sensitive financial data and records managed by the County.

Organized Cybercrime, State-Sponsored Hackers Espionage: Medium

Though this type of cyberattack is growing at the state and nation-wide levels, the planning area is an unlikely target for organized criminals and state-sponsored hackers due to its size and lack of a charged

political environment. Due to the potential extent of attacks by organized criminals, the possibility and severity of resulting damages are great.

Phishing: High

Like Malware, Newton County is susceptible to phishing scams given their high frequency and increased stealth. Consequences could be catastrophic to extremely sensitive financial data managed by the County.

Third Party Mismanagement: Low

Division of responsibilities and isolation of access of individual vendors mitigates the potential damage each vendor can cause.

5.1.4 Historical Occurrences

Though the planning area does not have a history with cyberattacks, that does not mean the hazard should not be taken seriously. The Federal Bureau of Investigation (FBI) reports that losses tied to cybercrime exceeded \$4.1 billion in 2020 alone. The Secret Service prevented another \$2 billion in potential fraud cases with the arrest of over 1,000 people. The DHS names cybersecurity as the top growing threat to national security and democracy.

Even though cyber-attack events are virtually impossible to predict, the Newton County planning area has the potential of an occurrence happening at any time.

5.1.5 Probability of Future Events

The probability of occurrence based on historical incidents in the planning area are classified as low, medium, and high. If the County has not had an occurrence, it considers the prevalence of each threat in our state and nation as a whole.

Advance Persistent Threats: High

Newton County maintains systems which monitor symptoms of APT and deflect attacks.

Data Loss/Leakage: Low

Newton County has mitigated this type of threat by performing background checks of all employees, contractors, and volunteers and through enforcing separation of duties across departments. There has not been evidence of past insider attacks.

The planning area is subject to compliance requirements which specifically address data loss and leakage. These compliance standards include but are not limited to:

- Payment Card Industry Security Standard (PCI DSS)
- Health Insurance Portability and Accountability Act of 1996 (HIPAA)
- Criminal Justice Information Services Division (CJIS)

Denial Of Service Attacks: Low

These attacks could result in an extended outage and loss of access for the County. Though this would impact daily schedules and productivity, the economic impact is low.

The planning area has experienced DOS attacks that were not severe enough to negatively impact Newton County's daily services. Historically the County has had no DDoS attacks over the last year which successfully impacted services. Attempts to disrupt services through phishing emails have occurred, but sensitive information has not been successfully obtained.

Infrastructure Loss/Failure: High

Protecting the computers and network servers of the planning area are of utmost concern. The system has historically experienced extended outages during and after severe weather events. Routine reviews of the systems' resiliency occur to mitigate the risks of loss and failure. Newton County and City of Newton staff participate in education and awareness campaigns to minimize the risks to the data centers.

Insider Threats: Low

Newton County has mitigated this type of threat by performing background checks of all employees, contractors, and volunteers and through enforcing separation of duties across departments. There has not been evidence of past insider attacks.

Malware: High

The County should continue to educate and caution employees on the frequency and increased stealth of these types of attacks.

Organized Cybercrime, State-Sponsored Hackers Espionage: Low

Though this type of cyberattack is growing at the state and nation-wide levels, the planning area is an unlikely target for organized criminals and state-sponsored hackers due to its size and lack of a charged political environment.

Phishing: High

Like Malware, the County should continue to educate and caution employees on the frequency and increased stealth of these types of attacks.

Third Party Mismanagement: Low

Newton County utilizes third parties for its cyber activities, and vets all contracts prior to final agreement. As part of the contractual agreements, all data are required to be stored within the U.S. and segregated from other entities' data. There has not been an instance of third-party mismanagement to date.

5.1.6 Vulnerability and Impact

As mentioned above, cyberattacks are difficult to quantitate and even harder to predict. The growing dependence on the digital world has only heightened the risk for these types of events to occur.

Cybersecurity, or information technology security, is the practice of protecting critical computer systems and networks, especially those managing sensitive data, from digital attacks. Unlike preventative measures for other hazards, cybersecurity must always be on the defensive. There is no "season" to prepare for, like we see with the physical threats of hurricanes or wildfires. Thus, it is imperative that the County not be lax in its commitment to mitigation efforts. While these efforts can include the installation of security hardware and software, they can also include educational and awareness efforts for county employees, contractors, and volunteers.

5.2 DAM FAILURE

5.2.1 Hazard Description

Dams are water storage or diversion barriers that impound water upstream in reservoirs. Dam failure is a collapse, breach or overtopping of the structure. While most dams have storage volumes small enough that failures have relatively minor repercussions, dams with large storage volumes can cause significant flooding at lower relative elevations.

The failure of dams can result in injuries, loss of life, and damage to property and environment. While levees are built solely for flood protection, dams often serve multiple purposes such as hydroelectric generation, flood control, and recreation. Dams and levees are usually engineered to withstand a flood with a calculated risk of occurrence. Severe flooding can increase the potential of dam or levee failure because of the physical force of the flood waters or overtopping. Failed dams can create floods that are catastrophic to life and property, in part because of the tremendous energy of the released water.

Dam failure can be caused by structural failure, or any combination of the following factors:

- arson
- earthquake
- failure of upstream dams
- flood conditions leading to overtopping
- improper operation or maintenance
- inadequate spillway capacity
- internal erosion

Warning time for dam failure varies widely and depends on the causal factors. Dam failure can occur in as little as a few minutes or slowly over the course of months. Catastrophic failure of a large dam would result in short evacuation times for locations directly downstream. Topography and floodplain characteristics determine warning time for locations further downstream.

5.2.2 Location

In Newton County there are thirteen dams (three within the Toledo Bend Dam complex) included in the USACE National Inventory of Dams. A dam is included in the National Inventory of Dams if it meets at least one of the following criteria:

1. High Hazard classification – loss of human life is likely if the dam fails,
2. Significant hazard classification – possible loss of human life and likely disruption of access to critical facilities, damage to public and private facilities, and difficult mitigation efforts
3. Equal or exceed 25 feet in height and exceed 15 acre-feet in storage,
4. Equal or exceed 50 acre-feet storage and exceed 6 feet in height.

Based on information provided by the National Inventory of Dams, Table 3-3 below outlines the eleven NID dams in Newton County.

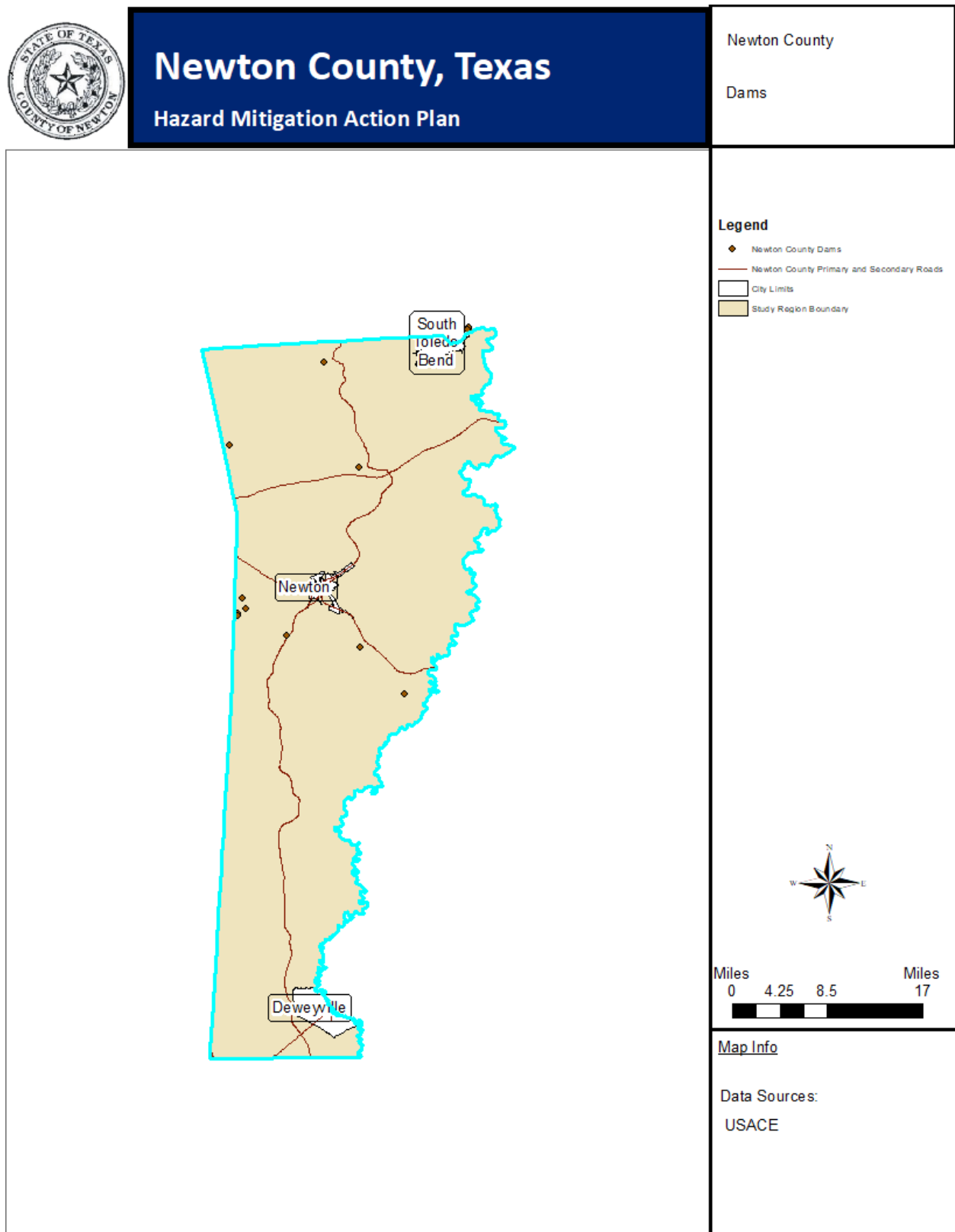
Table 5.2–1 Dams of Newton County

COUNTY LOCATION	DAM NAME	NID I.D.	PRIMARY PURPOSE	HEIGHT (FT)	STORAGE (ACRE/FT)
NEWTON	Toledo Bend Dam	LA00030	Hydroelectric	75	5,097,500
NEWTON	Roundtree Lake Dam	TX03879	Water Supply	15	96
NEWTON	Scrappin Valley Lake Dam	TX03880	Recreation	21	50
NEWTON	Wickersham Dam	TX03881	Recreation	12	80
NEWTON	Walker Lake Dam	TX03882	Water Supply	17	175
NEWTON	Club Lake Dam	TX03883	Recreation	25	130
NEWTON	Coastal Dam D	TX03884	Water Supply	22	95
NEWTON	Island Lake Dam	TX03885	Recreation	32	175
NEWTON	Javalina Lake Dam	TX03886	Recreation	26	85
NEWTON	Temple Eastex Dam	TX04278	Irrigation	10	90
NEWTON	Smith Lake Dam	TX05269	--	16	70

Source: National Inventory of Dams

Figure 5.2–1 illustrates locations of the dams identified in the National Inventory of Dams. Note only Toledo Bend Dam has a high hazard classification, the remaining ten (10) smaller dams present negligible risk. Therefore, the remainder of this hazard profile will focus on Toledo Bend Dam only.

Figure 5.2–1 National Inventory of Dams, Newton County



5.2.3 Extent

The Flood Insurance Study for Newton County (2018) notes that no flood protection measures have been undertaken in the County. A railroad two miles south of Deweyville that runs parallel with Highway 12 impacts local hydrology and increases flood levels on upstream side. Temporary levees were constructed in October-November 2009 to protect the downtown Deweyville from flooding.

Figure 5.2 – 2 was released by National Weather Service (NWS) Lake Charles during the March 2016 Sabine River Flood Event to depict record releases from the Toledo Bend Dam and associated crest elevations.

Figure 5.2–2 NWS Media Release during March 2016 Sabine River Flood Event

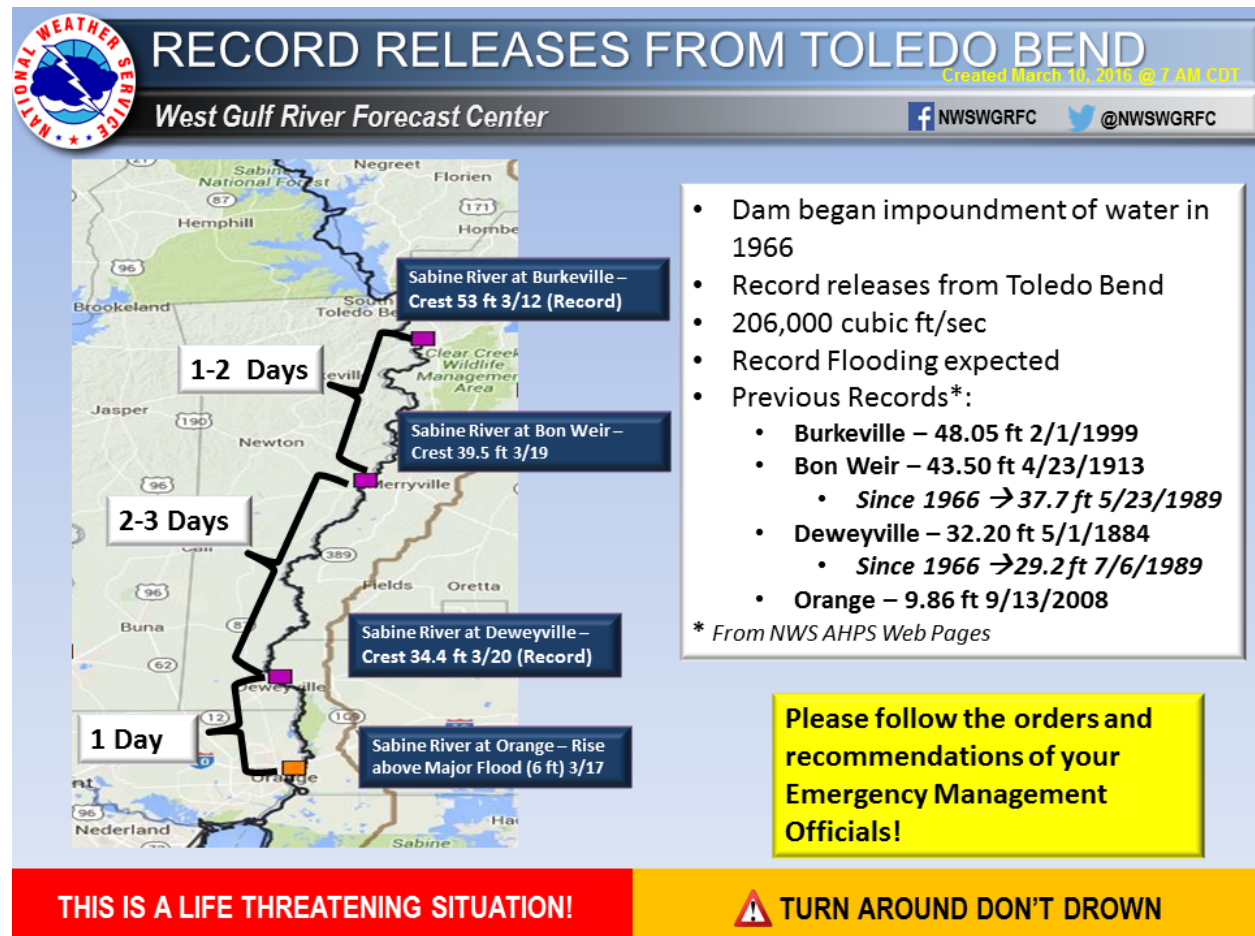


Figure 5.2 – 3, shown below, was derived from NWS Lake Charles simulation data of the March 2016 flood. The figure shows the extent of inundation at the county level. While several communities are impacted, Deweyville is the only Census Designation Place (CDP) to be impacted.

Figure 5.2 – 4 zooms in to the Deweyville region to depict the critical facilities that were affected.

Figure 5.2–3 Inundation Extent (County – Wide) of March 2016 Sabine River Flood

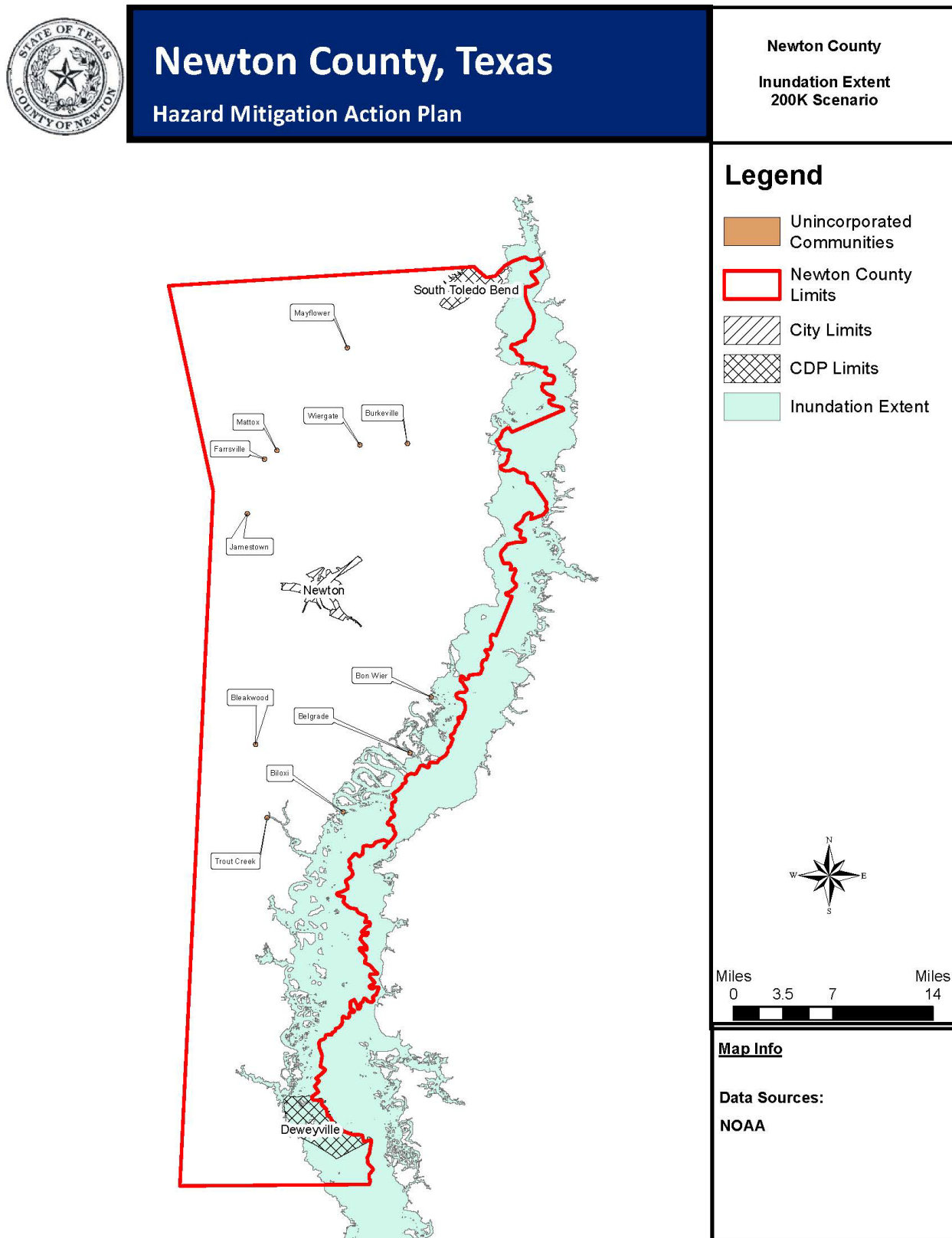
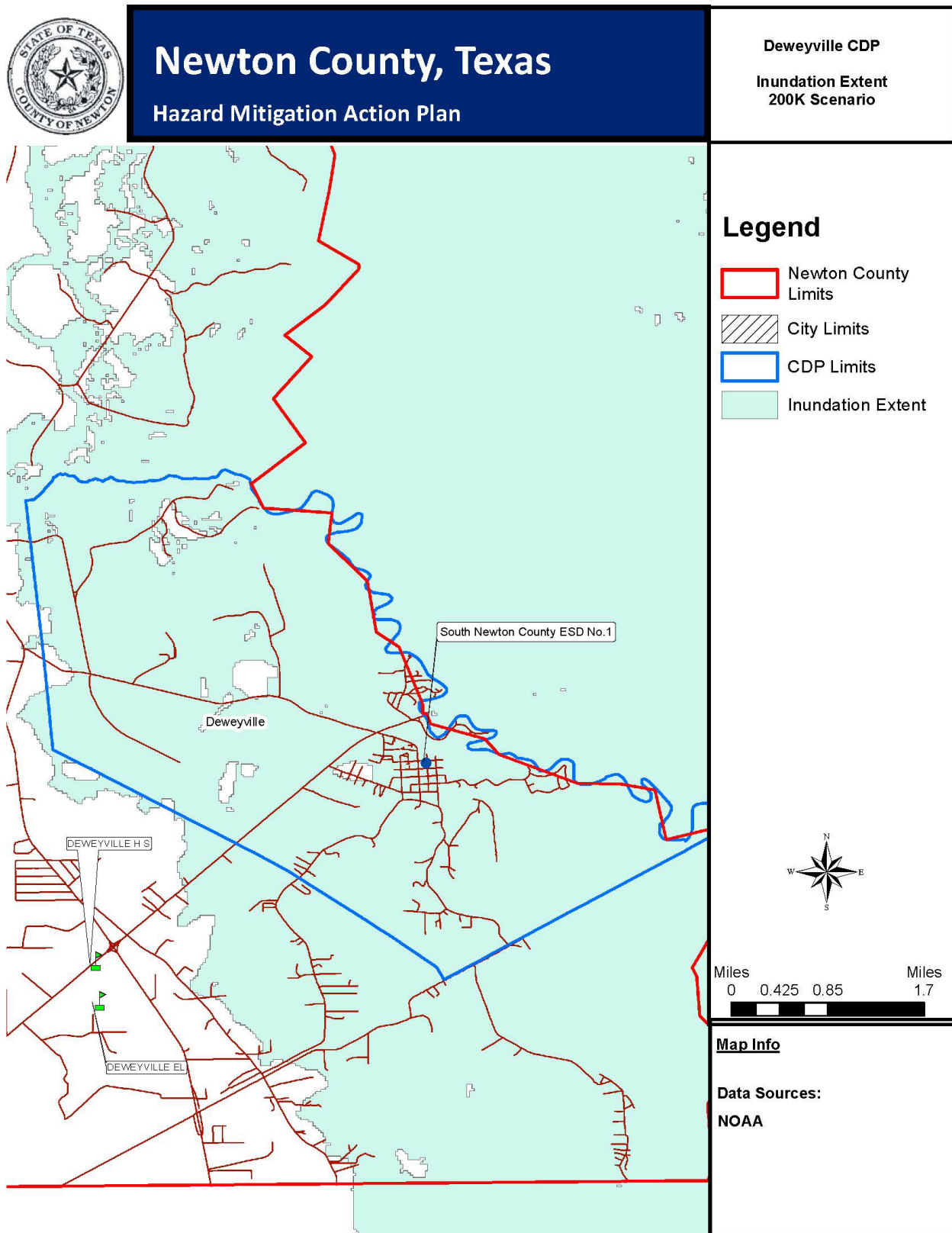


Figure 5.2–4 Inundation Extent (Deweyville) of March 2016 Sabine River Flood



Probable maximum flood event studies and dam breach scenarios are required on High Hazard Dams as defined by the Federal Energy Regulatory Commission (FERC). Table 5.2–2 provides projected flood arrival times and elevations for a dam breach at Toledo Bend Dam (Sunny Day Breach scenario), followed by Table 5.2–3 showing projected inundation under the Probable Maximum Failure (PMF scenario). These tables were derived from Sabine River Authority (SRA) maps and data to catalog the extent of inundation at various benchmark locations along the Sabine River. Due to security protocols, these maps cannot be released for a public document and are not included herein. Newton County, however, has a copy of the maps on file and regularly communicates with SRA before, during, and following severe weather events.

Table 5.2–2 Projected Inundation Profile: Sunny Day Breach Scenario

LOCATION	DISTANCE FROM DAM	FLOOD ARRIVAL TIME	PEAK ARRIVAL TIME	FLOOD PEAK ELEVATION	ESTIMATED LOCAL INUNDATION DEPTH
SANDY CREEK	7.4 miles	2.9 hours	19.0 hours	124 feet	14 TO 19 FEET
BURR FERRY/HWY 63	15.0 miles	4.4 hours	24.2 hours	117 feet	13 TO 17 FEET
BAYOU ANACOCO, VERNON/BEAUREGARD PARISH LINE	29.3 miles	10.0 hours	35.0 hours	92.6 feet	16 TO 22 FEET
BELGRADE	43.0 miles	15.0 hours	49.0 hours	73.6 feet	12 TO 14 FEET
COW CREEK/BANCROFT	55.2 miles	26.0 hours	58.0 hours	59.9 feet	18 FEET
BEAUREGARD/CALCASIEU PARISH LINE	68.0 miles	36.0 hours	65.0 hours	44.5 feet	16 FEET
HWY 12 DEWEYVILLE	76.6 miles	48.0 hours	72.0 hours	29.3 feet	10 TO 14 FEET
INTERSTATE 10/ORANGE, TX	90.0 miles	58.0 hours	81.0 hours	10.6 feet	4 to 10 feet

Source: Sabine River Authority Inundation Scenario Maps 1-5

Table 5.2–3 Projected Inundation Profile: Probably Maximum Failure (PMF) Scenario

LOCATION	DISTANCE FROM DAM	PEAK ARRIVAL TIME	FLOOD PEAK ELEVATION	ESTIMATED LOCAL INUNDATION DEPTH
SANDY CREEK	7.4 miles	16.0 hours	128.4 feet	16 to 21 feet
BURR FERRY/HWY 63	15.0 miles	21.0 hours	123.4 feet	19 to 23 feet
BAYOU ANACOCO, VERNON/BEAUREGARD PARISH LINE	29.3 miles	35.0 hours	92.6 feet	16 to 22 feet
BELGRADE	43.0 miles	49.0 hours	73.6 feet	12 to 14 feet
COW CREEK/BANCROFT	55.2 miles	58.0 hours	59.9 feet	18 feet
BEAUREGARD/CALCASIEU PARISH LINE	68.0 miles	65.0 hours	44.5 feet	16 feet
HWY 12 DEWEYVILLE	76.6 miles	72.0 hours	29.3 feet	14 to 18 feet
INTERSTATE 10/ORANGE, TX	90.0 miles	81.0 hours	10.6 feet	4 to 10 feet

Source: Toledo Bend Project Emergency Action Plan

Note: Annual probability for Probable Maximum Failure Scenario is very low, estimated at 1 in 2,000 to 1 in 1,000,000. Flood Arrival Time not estimated for PMF Scenario.

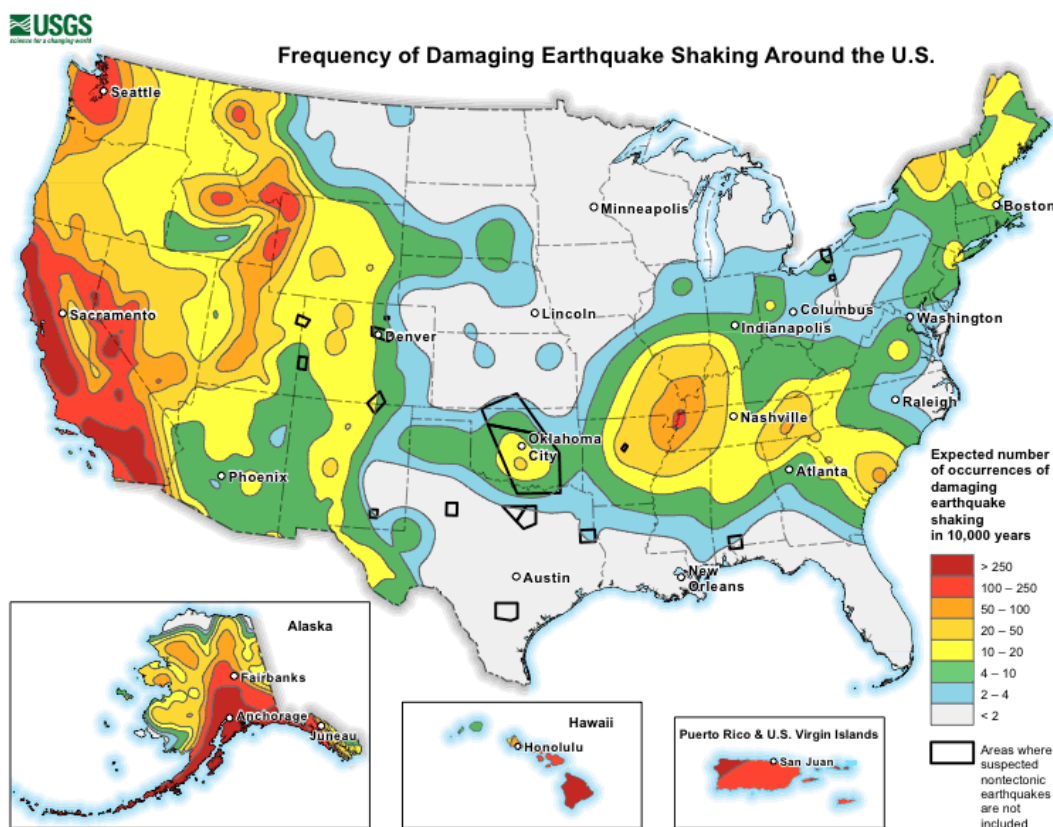
5.2.4 Historical Occurrences

There have been no previous major dam failure occurrences in Newton County, though failure of small dams for stock ponds has occurred and caused minor disruption.

5.2.5 Probability of Future Events

The HMC assessed future probability of a major occurrence of dam and/or levee failure as less than 25 percent over a 10-year timeframe and less than or equal to 50 percent over a 50-year timeframe. This probability assessment equates to a Low probability of future occurrence classification according to the definitions set forth in Section 4.4. Another method for estimating probability of future occurrence is to analyze probability for potential causes. USGS modeling of earthquake probability is less than 2 occurrences in 10,000 years, or a 0.02-percent chance (0.2%).

Figure 5.2 – 5 Frequency of Damaging Earthquake Shaking Around the U.S.



Source: USGS

5.2.6 Vulnerability and Impact

All assets within the inundation areas of a Toledo Bend breach will potentially be damaged, as represented in Table 5.2–3 and Figures 5.2 – 3 and 5.2 – 4. The City of Newton sits at 203 feet above sea level which is approximately 50 feet higher than the water surface elevation of a major dam breach. Therefore, vulnerability to dam failure for City of Newton is negligible.

Transportation, utility, and water (fresh and storm) networks closer to the dam will be most vulnerable to the fast-moving water and as the flow slows farther from the breach, damage to these assets will decrease.

5.3 DROUGHT

5.3.1 Hazard Description

As defined by the National Oceanic and Atmospheric Administration (NOAA) Weather Service, drought is defined as "a period of abnormally dry weather sufficiently prolonged for the lack of water to cause serious hydrologic imbalance in the affected area." More simply, a drought is a period of unusually persistent dry weather lasting long enough to cause serious problems such as crop damage and/or water supply shortages. The severity of the drought depends upon the degree of moisture deficiency, the duration, and the size of the affected area.

Short term effects of drought include excessively dry soil causing plants stress and crop failure. When rainfall is less than normal for several weeks, months, or years; the following may occur: the flow of streams and rivers declines; water levels in lakes and reservoirs fall; the water table drops, i.e., the depth to reach groundwater in water wells increases. Accompanying hazards to drought include both extreme heat and wildfires, the combinations of which can create a dangerous sequence.

Tracking drought is challenging due to the numerous definitions and measurement protocols. The online website Drought Monitor, a partnership between Federal agencies and the National Drought Mitigation Center at the University of Nebraska- Lincoln, has been tracking drought conditions across the country and provides drought information maps illustrated down to the County level. Table 5-3.1 illustrates the Drought Monitor's drought intensity rating of "abnormally dry", "moderate drought", "severe drought", "severe drought", "extreme drought", and "exceptional drought" followed by a description of impacts. Five of the indices referenced above are also included on the Drought Monitor Severity Classification.

Table 5.3–1 Drought Monitor: Drought Severity Classification

Description	Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (%)	USGS Weekly Streamflow (%)	Standardized Precipitation Index (SPI)	Objective Drought Indicator Blends (%)
Abnormally Dry	Going into drought: <ul style="list-style-type: none"> • Short-term dryness slowing planting, growth of crops or pastures Coming out of drought <ul style="list-style-type: none"> • Some lingering water deficits • Pastures or crops not fully recovered 	–1.0 to –1.9	21.0–30.0	21.0–30.0	–0.5 to –0.7	21.0–30.0
Moderate Drought	<ul style="list-style-type: none"> • Some damage to crops, pastures • Streams, reservoirs, or wells low, some water shortages developing or imminent • Voluntary water-use restrictions requested 	–2.0 to –2.9	11.0–20.0	11.0–20.0	–0.8 to –1.2	11.0–20.0
Severe Drought	<ul style="list-style-type: none"> • Crop or pasture losses likely • Water shortages common • Water restrictions imposed 	–3.0 to –3.9	6.0–10.0	6.0–10.0	–1.3 to –1.5	6.0–10.0
Extreme Drought	<ul style="list-style-type: none"> • Major crop/pasture losses • Widespread shortages or restrictions 	–4.0 to –4.9	3.0–5.0	3.0–5.0	–1.6 to –1.9	3.0–5.0
Exceptional Drought	<ul style="list-style-type: none"> • Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells, creating water emergencies 	–5.0 or less	0.0–2.0	0.0–2.0	–2.0 or less	0.0–2.0

5.3.2 Location

Drought is a normal part of virtually all climatic regimes, including areas with high and low average rainfall. Agricultural irrigators and municipal water supplies are primarily dependent on groundwater resources. As severe droughts may affect the groundwater table, the risks associated with drought are County wide and will affect all jurisdictions within the planning area.

The Drought Monitor shows the planning area is currently experiencing moderate drought conditions in most of the County and abnormally dry conditions in the northeast corner of the County (Figure 5.3–1). However, the planning area has experienced a range of conditions from normal to extreme drought conditions over the last twenty years (Figures 5.3–2 and 5.3–3). There is no distinct geographic boundary to drought; therefore, it can occur throughout the Newton County planning area equally, including all participating jurisdictions.

Figure 5.3–1 U.S. Drought Monitor, April 2022

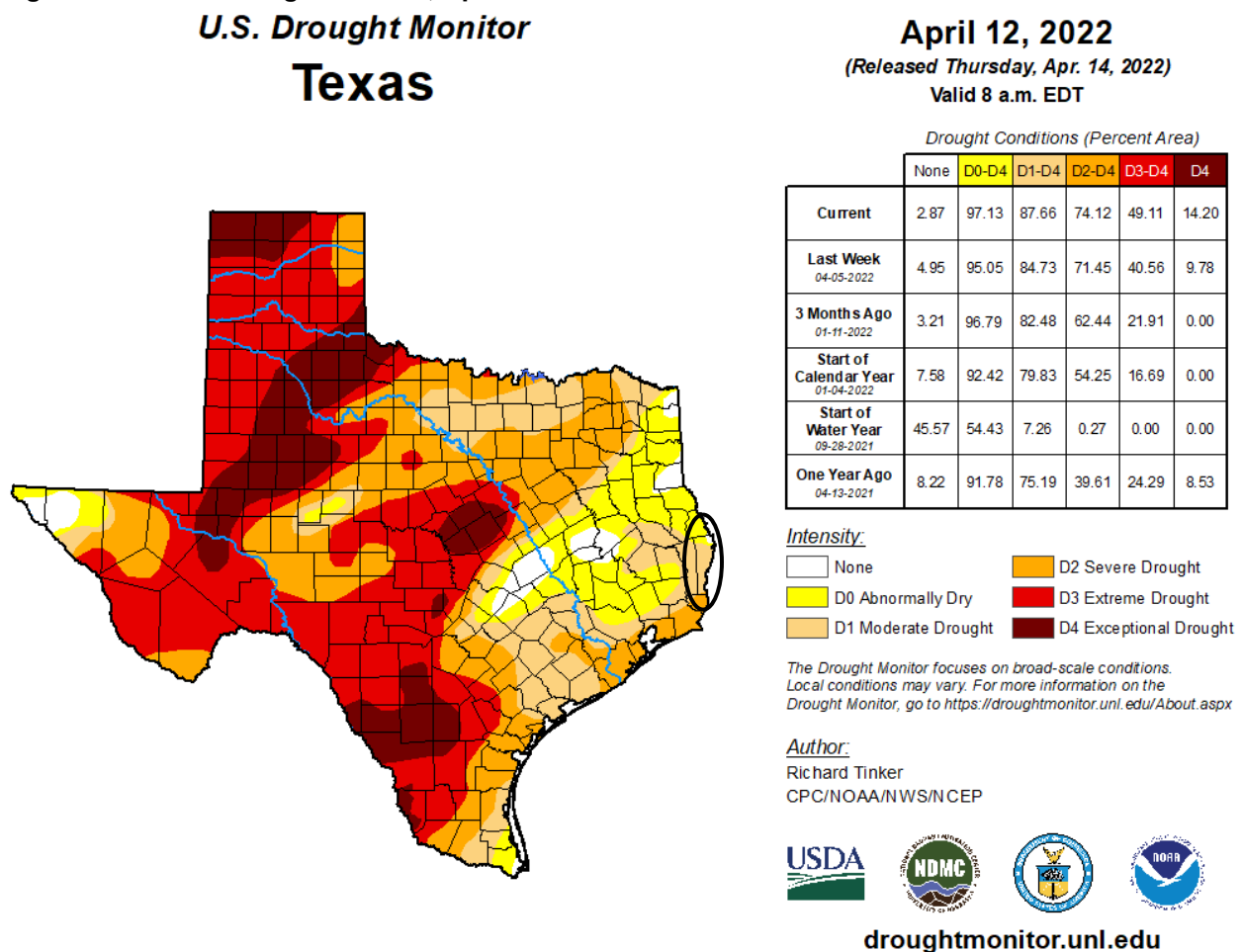


Figure 5.3–2 U.S. Drought Monitor, April 2012

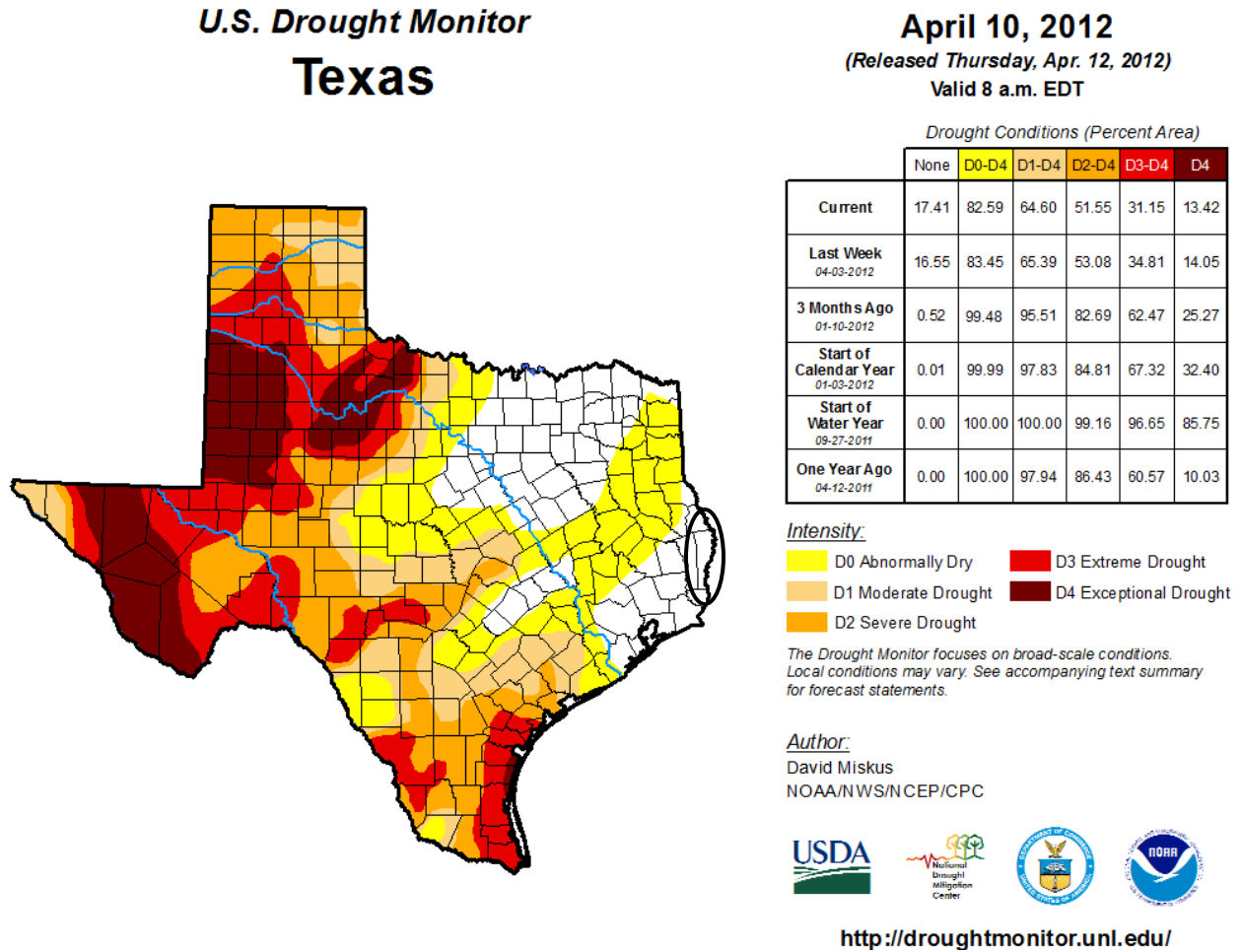
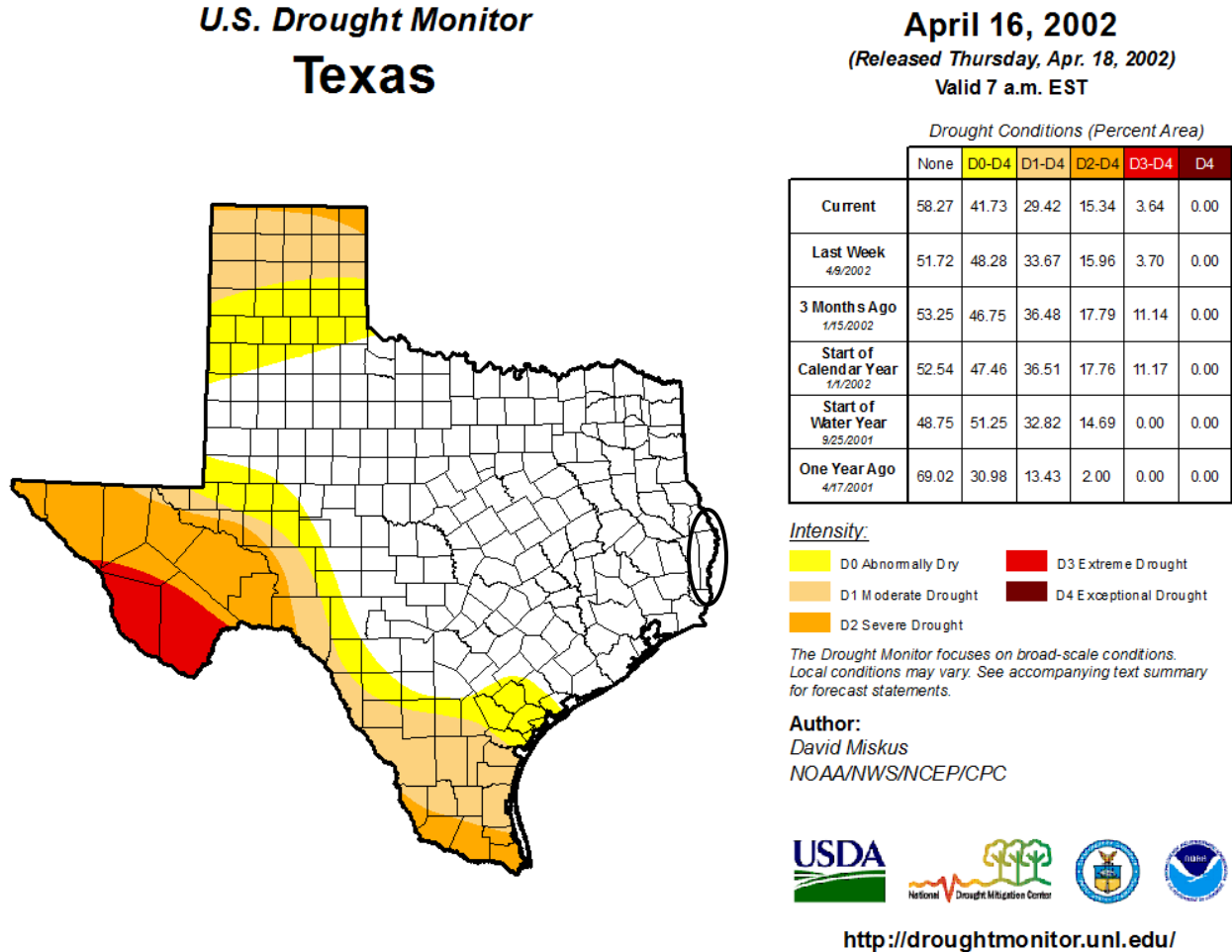


Figure 5.3–3 U.S. Drought Monitor, April 2002



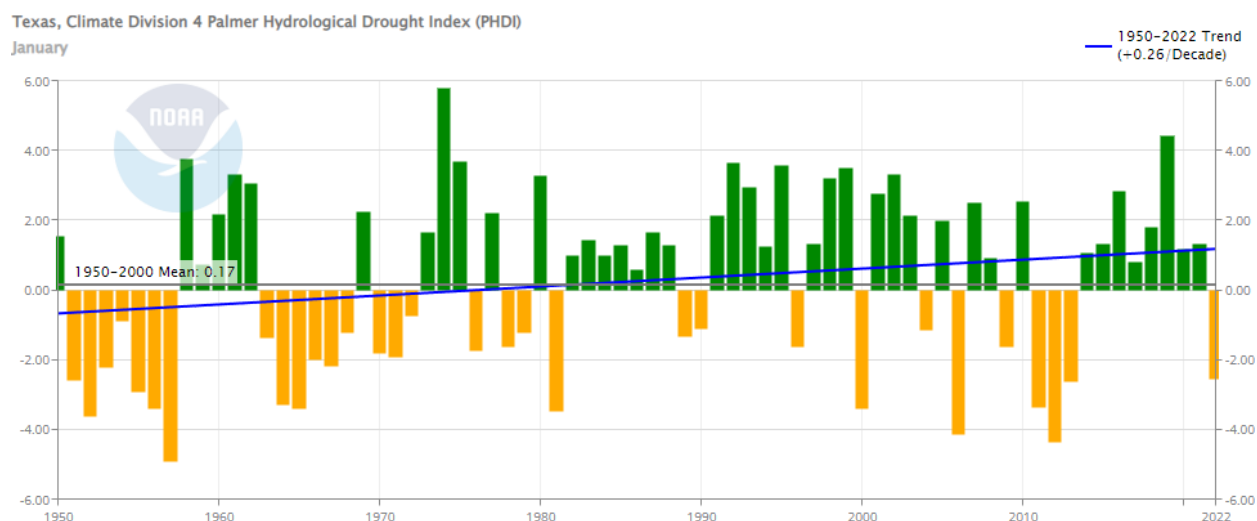
5.3.3 Extent

Figure 5.3–4 shows drought conditions for East Texas from 1950 to April 2022 during which this region of the state experienced drought conditions ranging from a PHDI of just below zero (0) to negative five (-5) in 31 out of the last 72 years. This represents an anticipated maximum extent for the planning area including both Newton County and City of Newton to range from ‘Abnormally Dry’ to “Exceptional Drought” conditions. According to definitions set forth by National Drought Mitigation Center, Exceptional Drought includes ‘Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies.

5.3.4 Historical Occurrences

The Palmer Drought Severity Index (PDSI) is a commonly used measure of regional moisture depletion or abundance. Viewed over long timeframes to illustrate trends and conditions, this index is referred to as the Palmer Hydrological Drought Index (PHDI). Figure 5.3–4 below shows the length and extent of previous droughts in Texas Climate Division 4 which encompasses Newton County.

Figure 5.3–4 Palmer Hydrological Drought Index (PHDI), East Texas Region (1950 – April 2022)



5.3.5 Probability of Future Events

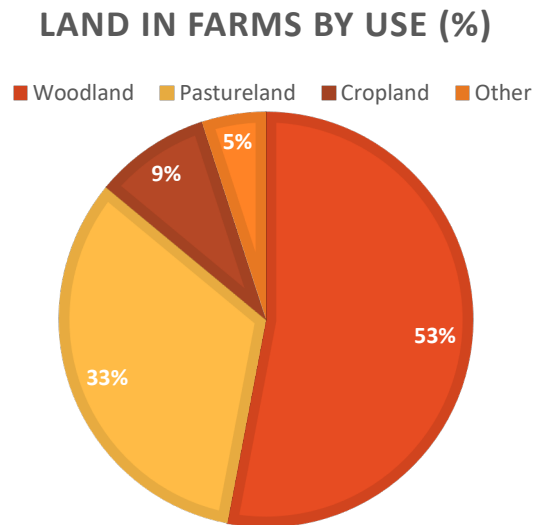
Based on analysis of drought data and available information on trends, Newton County can expect to experience roughly the same drought occurrences over the next 72 years. This equates to a 43% chance of drought in any given year.

5.3.6 Vulnerability and Impact

According to the 2012 Census of Agriculture, published by the U.S. Department of Agriculture, Newton County has 58,793 acres of land in farms producing \$1,587,000 worth of crops and livestock each year. The reduction in available water due to drought conditions causes lower crop yields including grazing land and hay pastures both of which decrease and, in some cases, eliminate profits in the agriculture community.

The chart below shows the breakdown of usage of farmland in Newton County. This economic impact will affect the City and County in terms of decreased production for forestry, ranchers, and farmers which can result in less business conducted in the City causing decreased income for businessmen and decreased tax revenue for the City.

Figure 5.3–4 Land in Farms by Use



Source: USDA

The most common impacts include economic hardship due to lost revenue from crops or loss of livestock. Non-irrigated croplands are most susceptible to moisture shortages. Grazing land and irrigated agricultural lands are not impacted quickly as the non-irrigated, cultivated acreage, but their yields can also be reduced. Reductions in yields due to moisture shortages are often aggravated by wind-induced soil erosion. While there is no crop land within the city limits of Newton, some farmers live within the city and manage crops outside the city resulting in an economic impact to the city.

In periods of severe drought, grazing land can destroy the economic potential of livestock and crop lands. Under extreme drought conditions, lakes, reservoirs, rivers and in particular the groundwater table can be subject to water shortages or inaccessibility, restricting use for municipal water supplies. This can lead to effects on the water supply of both the County and the City.

5.4 EXCESSIVE HEAT

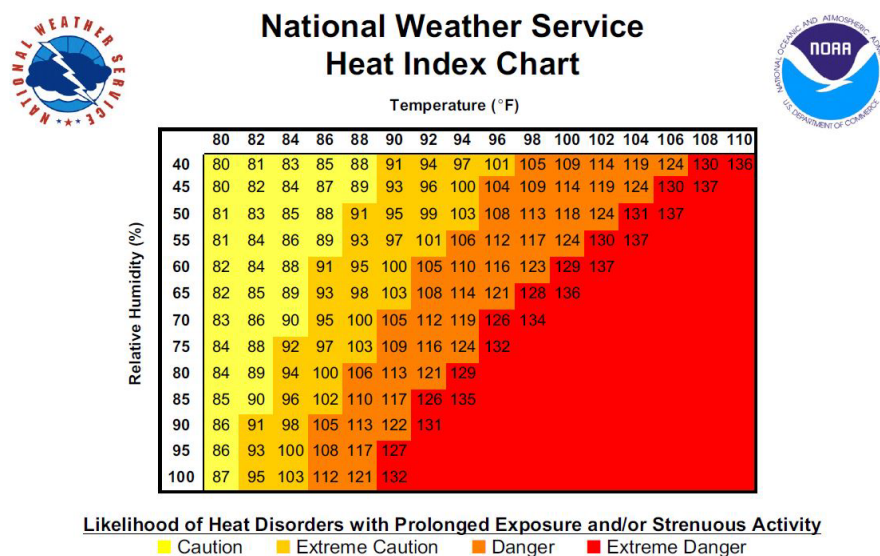
5.4.1 Hazard Description

Excessive Heat is a persistent period of hot temperatures (significantly above normal) which is often accompanied by high humidity. Excessive Heat can cause the heat induced illness hyperthermia, better known as “heat stroke.” Heat stroke affects the ability to maintain proper body temperatures and in severe cases may result in death. Children, the elderly or infirmed, and persons without air conditioning are at greatest risk of heat stroke though anyone may be affected. In addition to human health impacts, Excessive Heat can stress agricultural crops and livestock thus reducing yields and may cause widespread power outages because of increased demand for electricity to power air-conditioning systems.

The "Heat Index" (HI) is a measure of the effect of the combined elements of heat and humidity on the human body. The HI or the "Apparent Temperature" is an accurate measure of how hot it feels when the Relative Humidity (RH) is added to the actual air temperature. An Excessive Heat Warning is issued within 12 hours of the onset of a HI of at least 105°F for more than 2 hours. An Excessive Heat Watch is issued by the National Weather Service when Heat Warning criteria is possible (50-79%) 1 to 2 days in advance.

The Heat Index Chart below was provided by the National Weather Service and indicates the relationship of ambient air temperature and relative humidity to the likelihood of heat disorder and health risk.

Figure 5.4–1 NWS Heat Index Chart



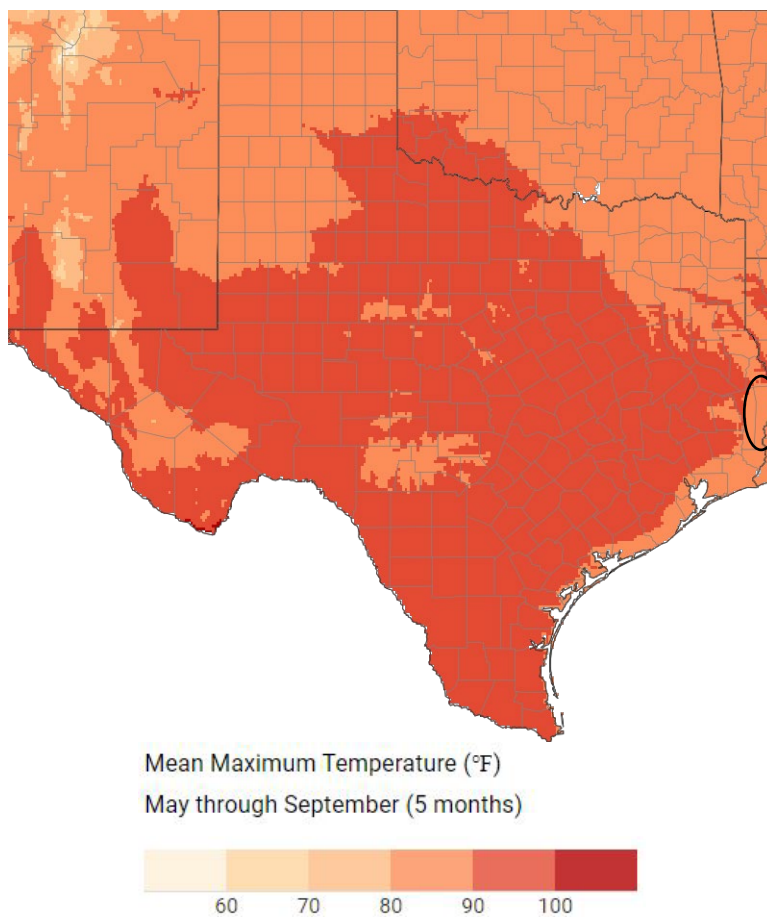
5.4.2 Location

The entire planning area including both City of Newton and Newton County can experience excessive heat. The east Texas region classified climatologically as subtropical humid, as is most noted for warm summers. Southeast Texas and specifically Newton County and the City of Newton is warmer than the Texas average in winter and slightly cooler than the Texas average in summer. The relatively mild and wet climate is largely due to the influence of the Gulf of Mexico.

The National Centers for Environmental Information under NOAA defines Climate Normals as three-decade averages of climatological variables including temperature and precipitation. The following figure displays the daily maximum temperature as derived from NOAA data compiled from 1991 – 2020. Newton County shows to be between 80° - 90° F.

The map clearly depicts that the east Texas region was cooler on average than much of the southern, western, and central portions of the state, those its temperature ranges were comparable to those in northwest Texas.

Figure 5.4–1 NCEI NOAA Mean Maximum Temperature Map



Source: NCEI Gridded Normals <https://ncei-normals-mapper.rcc-acis.org/Mapper>

5.4.3 Extent

Excessive can lead to death, injury, and serious medical conditions across all populations but particularly in vulnerable populations as identified in Section 4.6.4. While there are no available records of heat related deaths in Newton County or the City of Newton, excessive heat deaths can occur and at a minimum, periods of excessive heat result in diminished productivity, and well-being. As an area known for high summer temperatures and humidity, significant health related impacts and/or economic impacts from Excessive Heat likely have been underreported. Excessive Heat can be combated by air conditioning. However, persistent heat also increases demand on energy infrastructure. Excessive Heat also increases the risk of wildfire and typically compounds the effects of drought.

Based on these assessments, extent, magnitude, and severity is classified as Limited, with the highest temperatures expected not to exceed 2 percent of the highest on record (109.9 F) or 112 degrees F over the next five-year period.

5.4.4 Historical Occurrences

Like much of Texas, excessive heat is so common during summer months in Newton County that cataloguing previous occurrences would include virtually every year. Notably however, the National Weather Service reports no records of excessive heat impacts within their archives dating back to 1960. Similarly, the Jasper-Newton Health Department does not track or record excessive heat impacts in their system.

However, climate data has been recorded at the National Weather Service Station in Lufkin, Texas, approximately 65 miles northwest of Newton. The average monthly high temperatures for the summer months for 1991 - 2020 are as follows: June 88.0° (F), July 91.5° (F) and August 92.6° (F).

As stated above in the drought hazard profile, a direct database for excessive heat within Newton County is not available. The following table illustrates the dates the maximum temperature was at or exceeded 107° (F) in Lufkin, Texas, the closest location for which data is available, during the traditional summer months in the past 25 years. It is reasonable that temperatures in Newton will be like those in Lufkin.

Table 5.4–1 Top Ten Hottest Days in Lufkin, 1997 – Present

DATE	MAXIMUM DAILY TEMPERATURE
SEPTEMBER 4, 2000	109.9° F
SEPTEMBER 3, 2000	109.9° F
SEPTEMBER 1, 2000	109.0° F
AUGUST 31, 2000	109.0° F.
SEPTEMBER 2, 2000	108.0° F.
AUGUST 2, 1998	108.0° F.
AUGUST 19, 2011	107.1° F.
AUGUST 18, 2011	107.1° F.
AUGUST 1, 1998	107.1° F.
JULY 31, 1998	107.1° F.

Source: National Weather Service

5.4.5 Probability of Future Events

Probability of excessive heat occurrence is highest in months June – September. As stated above, a direct database for communities within Newton County is therefore climate data from the closest National Weather Service station, Lufkin, Texas was used to illustrate the high temperature records that would easily constitute as excessive heat as it is expected that extreme temperature recordings in Lufkin serve as an accurate measure of similar Excessive Heat episodes in Newton County planning area.

In general, the summer months are consistently warm, with maximum temperatures at or above 93 degrees from July 1st to September 1st. The high heat coupled with the high summertime humidity associated with subtropical climates, makes for annual oppressive heat events resulting in a Likely probability of future occurrence classification according to the definitions set forth in Section 4.4.

5.4.6 Vulnerability and Impact

Young children (because they are more likely to be left in cars unattended), the elderly and people with physical disabilities (because they are more likely to be on prescription medication), and families below the poverty level (because they are less likely to have central air conditioning), are at greater risk to excessive heat impacts. Actual percentages of vulnerable populations are listed in Section 4.6.5 tables for Newton County and City of Newton.

However, even young, and healthy individuals can succumb to heat if they participate in strenuous physical activities during hot weather. Factors that increase risk of impact include drinking alcohol, strenuous outdoor physical activity, and medications that impair the body's ability to regulate its temperature or inhibit perspiration. Periods of Excessive Heat bring greater demands on power grids as air conditioning systems operate longer to combat the heat. The City of Newton shares an equal level of vulnerability with Newton County.

5.5 FLOOD

5.5.1 Hazard Description

A flood is defined as the inundation of land by the rise and overflow of a body of water. The most common type of flooding is riverine flooding when heavy rainfall causes a river system or stream to exceed its normal carrying capacity. Flood events can also occur due to dam failure or from hurricane storm surge from a hurricane or tropical storm. Flooding is one of the most pervasive natural hazard threats in Texas, with public safety, housing, property, and infrastructure all potentially impacted by flooding.

There are two types of flooding that can impact Newton County: riverine flooding and flash floods. A waterway that is over capacity will subsequently inundate the adjacent floodplain. According to common usage, a floodplain is that area that is inundated by the 100-year flood (a flood that has a 1 percent chance in any given year of being equaled or exceeded). Riverine flooding is affected by the intensity and distribution of rainfall, soil moisture, seasonal variation in vegetation, and urbanization. Flash flooding is a localized flood that results from a short duration of intense rainfall across a limited geographic area.

Definitions for flood announcements and warning are provided below:

SCENARIO	ACTION	DESCRIPTION
FLOOD ADVISORY	Be Aware!	A Flash Flood Warning is issued when a flash flood is imminent or occurring. If you are in a flood prone area move immediately to high ground. A flash flood is a sudden violent flood that can take from minutes to hours to develop. It is even possible to experience a flash flood in areas not immediately receiving rain.
FLOOD WATCH	Be Prepared!	A Flood Watch is issued when conditions are favorable for a specific hazardous weather event to occur. A Flood Watch is issued when conditions are favorable for flooding. It does not mean flooding will occur, but it is possible.
FLOOD WARNING	Take Action!	A Flood Warning is issued when the hazardous weather event is imminent or already happening. A Flood Warning is issued when flooding is imminent or occurring.
FLASH FLOOD WARNING	Take Action!	A Flash Flood Warning is issued when a flash flood is imminent or occurring. If you are in a flood prone area move immediately to high ground. A flash flood is a sudden violent flood that can take from minutes to hours to develop. It is even possible to experience a flash flood in areas not immediately receiving rain.

Source: National Weather Service

5.5.2 Location

A flooding event of one type or another can occur almost anywhere in Newton County, however primary areas are in eastern portions of the County and along stream tributaries to the Sabine River. Newton County is located within a single watershed of the Sabine River Basin. Most of the territory drains into what is referred to as the Lower Sabine River Basin situated below Toledo Bend Dam, and a small northern portion drains into Toledo Bend Reservoir which ultimately channels down into the Lower Sabine.

Major creeks include Big Cow Creek with headwaters in the northwestern portion of the County, Little Cow Creek which runs through the town of Burkeville, Caney Creek which runs through the City of Newton, Quicksand Creek which drains areas east of the City of Newton, Trout Creek which originates in Jasper County and runs through central Newton County and feeds into Lower Big Cow Creek, Nichols Creek in south-central Newton County, and Big Cypress Creek in southern portions of the County.

Flooding frequently occurs along all these creeks and sub-basins in addition to extensive areas along the Sabine River Floodplain.

One method for identifying geographic locations of flood prone areas is FEMA Flood Insurance Rate Maps (FIRMs). Newton County's FIRMs were amended in the last planning cycle, with a revision date of November 16, 2018. The legend below lists the various flood zones found in Newton County. The accompanying Table 5.5–1 below gives detailed descriptions of these areas.








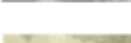
SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. <i>Zone X</i>
		Areas Determined to be Outside the 0.2% Annual Chance Floodplain <i>Zone X</i>
		Area of Undetermined Flood Hazard <i>Zone D</i>

Table 5.5–1 Flood Zone Descriptions

		ZONE	DESCRIPTION
SPECIAL FLOOD HAZARD AREA (SFHA)	Regulatory Floodway	–	The river channel or other watercourse and the adjacent land areas that are reserved to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.
	Without Base Flood Elevation (BFE) (No detailed hydraulic analyses)	Zone A	Areas subject to inundation by the 1-percent-annual-chance (100-year) flood event generally determined using approximate methodologies.
		Zone V	Areas along coasts subject to inundation by the 100-year flood event with additional hazards associated with storm-induced waves.
		Zone A99	Areas subject to inundation by the 100-year flood event, but which will ultimately be protected upon completion of an under-construction Federal flood protection system.
		Zone AE	Areas subject to inundation by the 100-year flood event determined by detailed methods.
OTHER AREAS OF FLOOD CONCERN	With BFE or Depth (Result of detailed hydraulic analyses)	Zone AO	Areas subject to inundation by 100-year shallow flooding (usually sheet flow) where average depths are between one and three feet.
		Zone AH	Areas subject to inundation by 100-year shallow flooding (usually areas of ponding) where average depths are between one and three feet.
		Zone VE	Areas subject to inundation by the 100-year flood event with additional hazards due to storm-induced velocity wave action.
		Zone AR	Areas that result from the decertification of a previously accredited flood protection system that is determined to be in the process of being restored to provide base flood protection.
		Zone X (shaded)	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. May include levee-protected areas.
OTHER AREAS	–	Zone X (unshaded)	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.
		Zone D	Areas in which flood hazards are undetermined.

Source: FEMA, Texas Floodplain Management Association (TFMA)

The following Flood Insurance Rate Map Index (Figure 5.5–1) shows the FIRM panels for all of Newton County. Individual panels can be found in Appendix E. The City of Newton is found in two panels, 48351C0310D and 48351C0330D. Areas identified as Zone A within the city generally follow Big Cow Creek and Caney Creek as well as both Hackberry Branch and Threemile Branch. A Flood Insurance Study (FIS) was performed prior to the issuance of the revised FIRM panels. This FIS details flood risk for specific waterways within the participation jurisdictions and a copy can be reviewed at the County Courthouse upon request.

Figure 5.5–2, also found below, shows a broad overview of the 100-year floodplain across the planning area. More detailed flood zone information can be found in the aforementioned FEMA FIRM panels. Figure 5.5–3 depicts major facilities in the planning area in relation to the 100-year floodplain.

Figure 5.5–1 FIRM Panel Index Map, Newton County

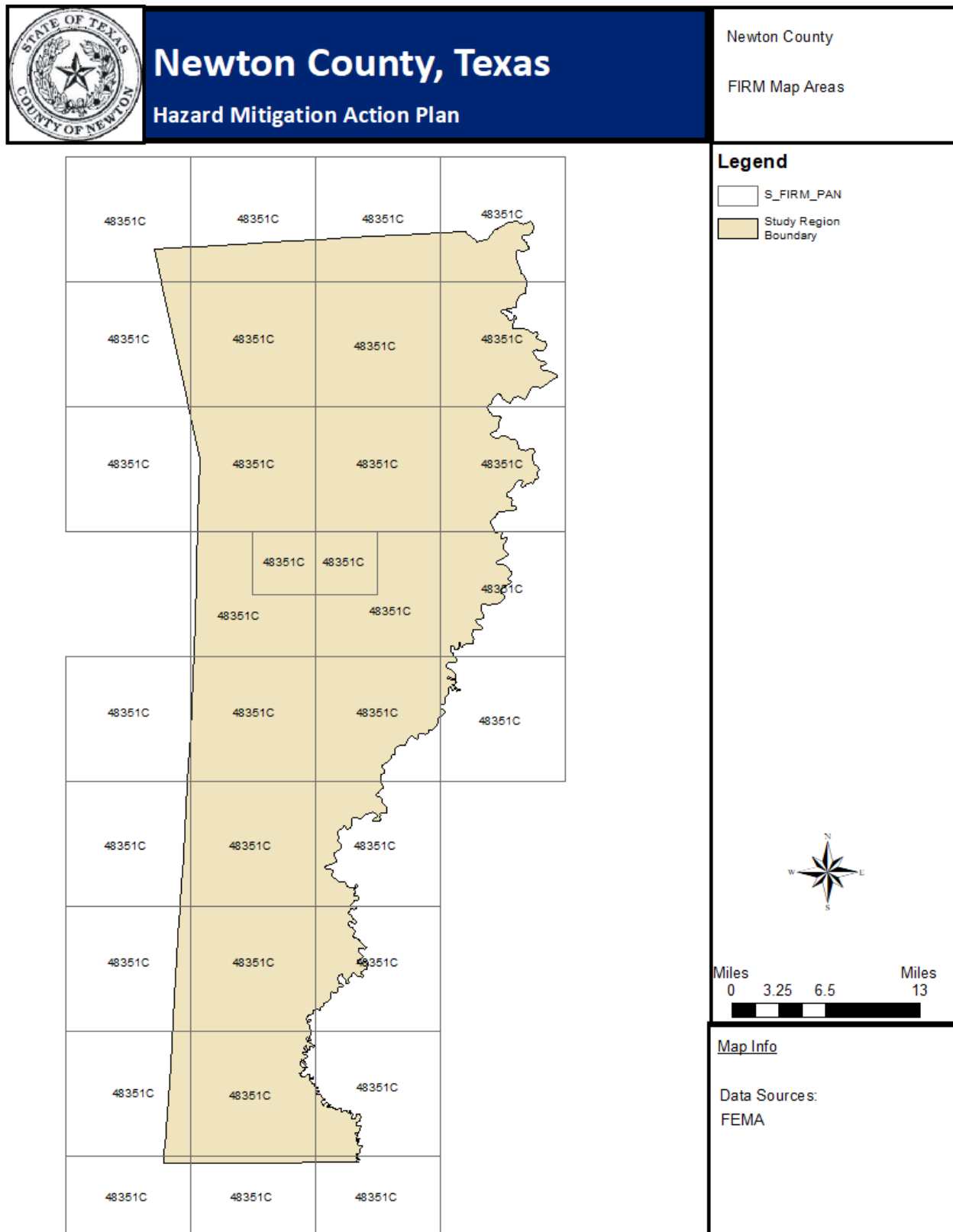


Figure 5.5–2 100-Year Flood Zone, Newton County

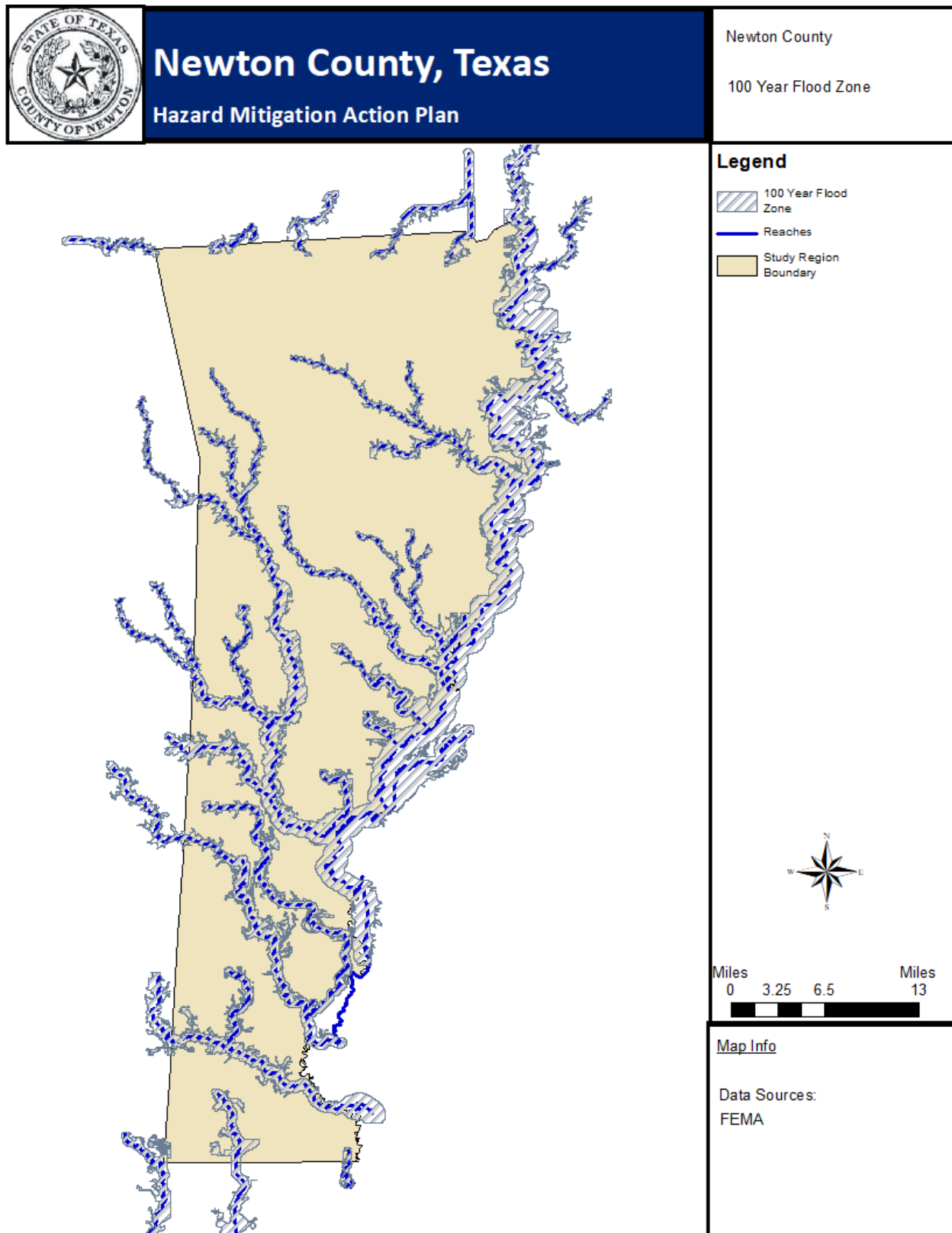
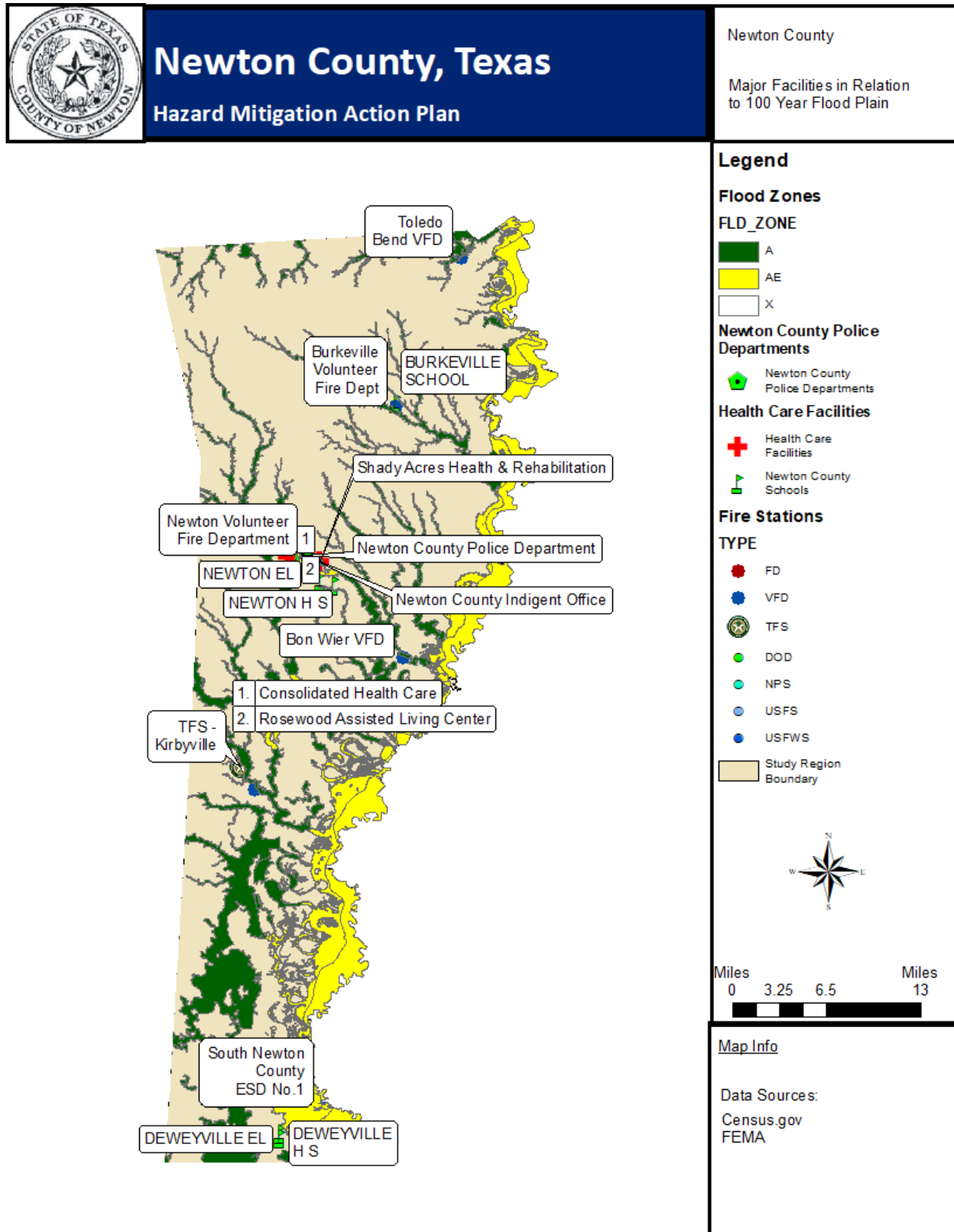


Figure 5.5–3 Major Facilities in Relation to 100-year Floodplain, Newton County



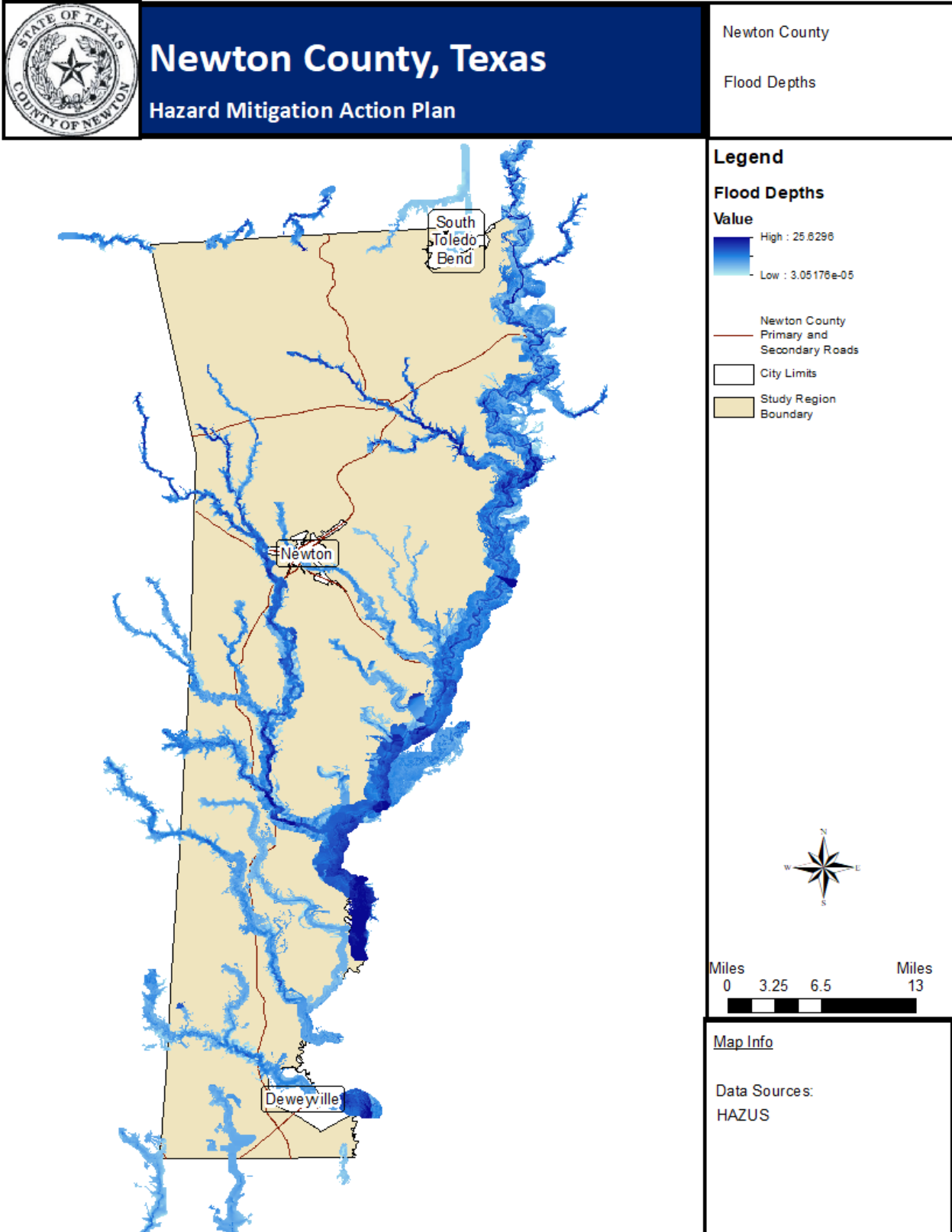
5.5.3 Extent

According to the NCEI database, floods have caused over \$134.2 million in damages over the last five years. In addition, the duration of flood events can impact communities and displace residents for weeks. See also Section 4.6 (Vulnerability Assessment) for more information on Flooding extent and Appendix E for floodplain maps.

In terms of magnitude and severity of flooding events throughout Newton County and the City of Newton, past flooding has resulted in water depths from less than one foot to as much as 15 feet. The last flooding event was considered Catastrophic based on the definitions set forth in Section 4.4, with property damage on a regional scale, extended shut down of infrastructure, and multiple injuries. In general, flooding that requires evacuation of homes or isolates homes is considered severe by the HMC. Extent of flooding including projected depths for 100-year flood and hypothetical dam failure is described for high vulnerability neighborhoods on the following pages.

The map on the following page portrays average flood depths during a 100-year flood event. It should be noted that the areas adjacent to the Sabine River reflect the highest flood depth values. This model corroborates the narratives of the select flood events in the next section.

Figure 5.5–4 Potential Flood Depths for the 100-year Flood Event, Newton County



5.5.4 Historical Occurrences

According to information contained in the NOAA National Centers for Environmental Information (NCEI) Severe Storm Event database, there were 22 flood events reported in Newton County between 2000 and 2021. Property damage exceeded \$137.3 million for the 22 events. (See Table 5.5–2 below).

Table 5.5–2 Summary of Flood Events for Newton County, 2000 – 2021

LOCATION	DATE	FLOOD TYPE	PROPERTY DAMAGE
DEWEYVILLE	06/07/2001	Flash Flood	\$50,000
NEWTON	06/07/2001	Flash Flood	\$20,000
BURKEVILLE	10/16/2006	Flash Flood	\$3,000
BURKEVILLE	10/16/2006	Flood	\$1,000,000
MAYFLOWER	11/01/2009	Flood	\$2,000,000
HARTBURG	03/20/2012	Flash Flood	\$30,000
JAMESTOWN	03/21/2012	Flood	\$1,000
BURKEVILLE	04/11/2013	Flood	\$20,000
NEWTON	09/30/2013	Flash Flood	–
TROUT CREEK	10/31/2013	Flash Flood	–
HARTBURG	06/17/2015	Flash Flood	–
BON WIER	06/18/2015	Flood	–
TROUT CREEK	10/25/2015	Flash Flood	–
JAMESTOWN	10/31/2015	Flash Flood	–
MAYFLOWER	03/09/2016	Flash Flood	\$2,250,000
MAYFLOWER	03/10/2016	Flood	\$86,000,000
DEWEYVILLE	04/18/2016	Flash Flood	–
BURKEVILLE	08/29/2017	Flash Flood	\$45,000,000
RULIFF	09/18/2019	Flash Flood	\$1,000,000
CALL	09/23/2020	Flash Flood	–
WIERGATE	04/23/2021	Flash Flood	–
WIERGATE	05/17/2021	Flash Flood	–

Source: NOAA NCEI Storm Events Database

Selected narratives of these events are as follows:

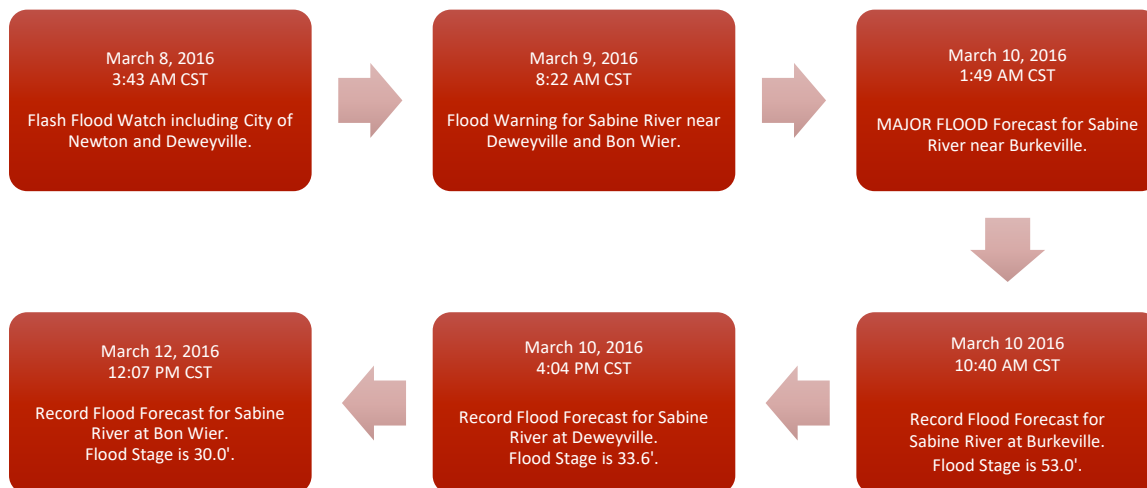
November 1 – 17, 2009 – Between November 3 and November 17, significant river flooding affected dozens of residences along the Sabine River in eastern Newton County. Although only a few homes were reportedly flooded, many residences were surrounded by flood waters and cut off from outside areas. Some of the worst flooding occurred in and near Deweyville in southeastern Newton County, especially the River Oaks and Indian Lakes subdivisions. A temporary earthen levee was constructed on the eastern side of Deweyville to protect the town from flooding. All schools in Deweyville were closed for two weeks due to the flooding. Numerous roads throughout eastern Newton County were underwater for several weeks and received significant damage.

Extensive heavy rainfall across much of eastern Texas and Louisiana during the month of October 2009 led to considerable runoff flowing into the Sabine River basin well into November 2009. Due to this heavy rainfall, the Sabine River Authority was forced to release water from a swollen Toledo Bend Reservoir at the end of October 2009, and the Sabine River began the month of November 2009 already above flood stage along its entire length south of Toledo bend Dam. These extra water flows from Toledo Bend Reservoir combined with runoff flowing into the Sabine River south of the dam to create the worst flooding along the Sabine River since March 2001. Newton and Orange counties both declared states of emergency due to the extensive river flooding, with many homes and subdivisions cut off from surrounding areas and several roadways damaged. Despite the extensive flooding, only a few homes were reportedly flooded due to efforts by the counties to purchase and remove residences from the Sabine River floodplain.

March 10 – 24, 2016 – Multiple days of heavy rain fell across the Sabine River Valley causing massive flooding in the basin. Across Toledo Bend Reservoir rainfall amounts averaged 15 to 20 inches. This pushed the lake level to a record of 174.36 which is several inches higher than the previous record set in 1989. All operational flood gates were fully opened to stabilize and gradually lower the lake level. Two gates were kept shut since maintenance were being performed. An estimated 205,000cfs was being released at the peak of the event and this produced record flooding at most sites downstream and north of Interstate 10.

Prolonged heavy rain on the 9th and 10th pushed Toledo Bend Reservoir to record levels while flooded creeks and streams flowed into the Sabine River. This pushed the river level at Burkeville to a record of 53.82 feet which was 5.77 feet higher than the previous record set in 1999. At Bon Weir, the new record set on the 13th was 0.71 feet higher than the previous record set in 1913. At Deweyville, the new record set on the 15th was 1 foot higher than the previous record set in 1884. Along the river numerous structures were flooded or in some cases, washed away. The hardest hit town was Deweyville where nearly every structure was flooded to some degree including the schools. County-wide, 458 homes received minor flood damage, 350 had major flood damage, and 500 homes were destroyed by the flood. Ten businesses received major flood damage. At least 60 million dollars is estimated to be the damage totals for homes and businesses, with an additional 26 million dollars for public property.

A timeline of the progression of NWS flood announcements for the March 2016 event is below:



5.5.5 Probability of Future Events

According to the National Centers for Environmental Information (NCEI) Severe Storm Event database, there were 22 flood events reported in Newton County and the City of Newton between 2000 and 2021. This calculates to approximately a 104-percent annual chance of a flood event occurring over this time frame. This probability assessment equates with a Very Likely probability of future occurrence classification as defined in Section 4.4.

Analysis of future flooding probability is relatively advanced compared to other hazard types. Most riverine flooding probability calculations is founded on analysis of discharge rates (measured in cubic feet per second, or CFS) and water surface elevation at gauging stations along rivers and creeks over a given period. Generally, floods with higher water surface elevations have lower frequency of occurrence.

The Flood Insurance Study for Newton County (2018) calculates peak discharges along the Sabine River for 10-, 50-, 100- and 500-year events based on analysis of historical records. The probability of a 10-year flood event equates to a 10-percent annual chance of occurrence, a 50-year event equates to 2 percent annual chance of occurrence, and so on. The table below shows the estimated discharges at selected locations along the Sabine River.

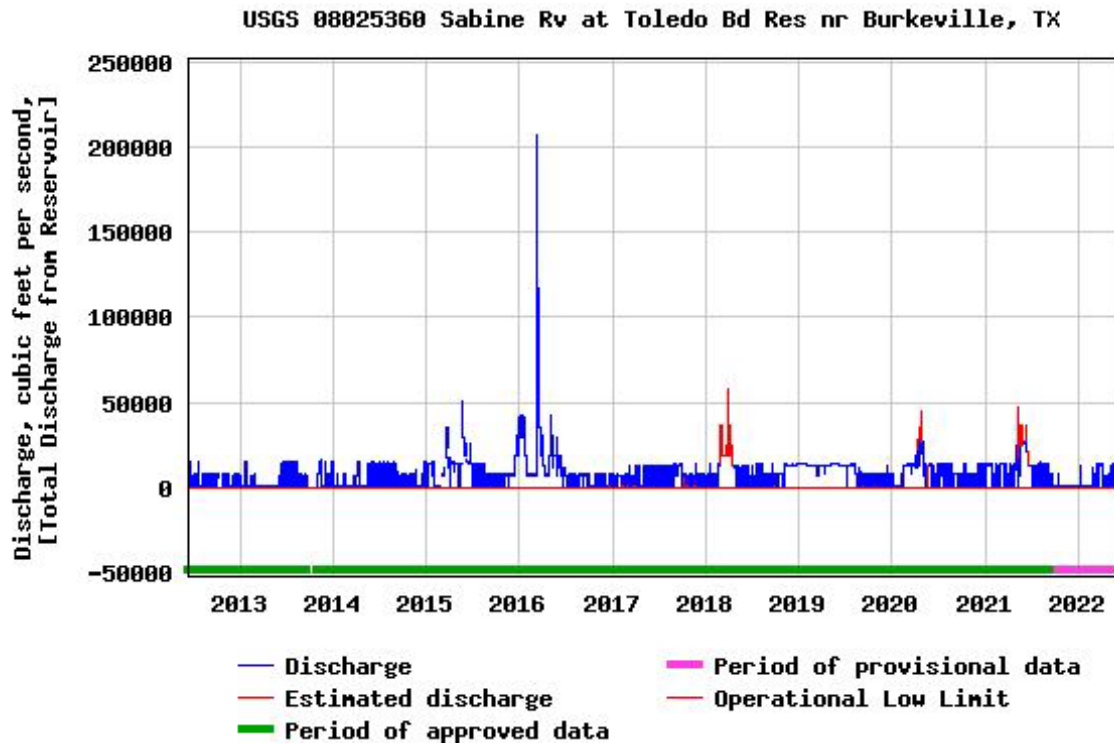
Table 5.5–3 Sabine River, Discharge by Probability and Location per FEMA FIS

FLOODING SOURCE AND LOCATION	10-YR PEAK DISCHARGE (CFS)	50-YR PEAK DISCHARGE (CFS)	100-YR PEAK DISCHARGE (CFS)	500-YR PEAK DISCHARGE (CFS)
TOLEDO BEND DAM	39,000	72,000	87,000	126,000
US HWY. 190	61,000	94,000	110,000	148,000
STATE HWY. 12	66,100	98,700	113,800	150,000
STATE HWY. 63	57,000	90,000	105,000	144,000

Source: NOAA NCEI Storm Events Database

The U.S. Geological Survey monitors river levels at various gauging stations in Newton County along the Sabine River and Big Cow Creek. Figure 5.5 – 5 below shows the total discharge from the Toledo Bend Reservoir near Burkeville in the past ten years, June 2012 – June 2022. On one occasion, in 2016, peak annual discharge on the Sabine River at Toledo Bend Dam exceeded the calculated '100-year' discharge rate as determined in the Newton County Flood Insurance Study. This occurrence (and others not represented in the data) involved major flooding damage and evacuation of adjacent neighborhoods.

Figure 5.5–5 Sabine River at Toledo Bend Reservoir near Burkeville, Texas, June 2012 – June 2022

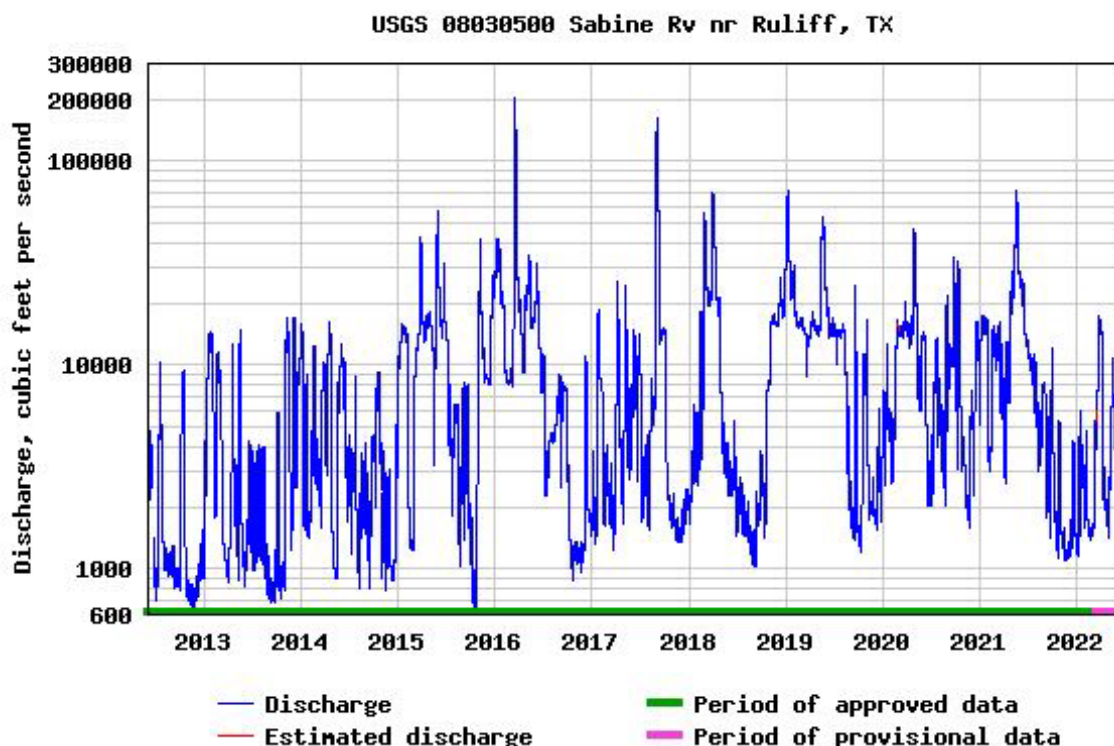


Source: USGS NWIS

Peak annual discharge on the Sabine River at Hwy 190 nearly doubled the calculated '500-year' discharge rate as determined in the Newton County Flood Insurance Study in 2016. On at least eight (8) other occasions since 1975 major flooding has occurred at this location requiring evacuation of neighborhoods and property damage including entire houses falling into the river. Bank erosion continues in this area and additional homes appear likely to eventually fall into the changing river channel.

In 2016 and 2018 peak annual discharge on the Sabine River at Ruliff (Deweyville) approached or exceeded the calculated '100-year' discharge rate as determined in the Newton County Flood Insurance Study. Each of these occurrences (and numerous others not represented in the data) involved major flooding damage and evacuation of adjacent neighborhoods. See Figure 5.5 – 6 for data analysis.

Figure 5.5–6 Sabine River at Toledo Bend Reservoir near Ruliff, Texas, June 2012 – June 2022



Source: USGS NWIS

In addition to the narratives and data stated above regarding the Sabine River, 56-60 families in neighborhoods north of Highway 363 near Thickety Creek Bridge have had multiple flooding occurrences where ingress/egress routes are inundated, and emergency evacuation is necessary. Flooding is also notable in areas south of Bleakwood along the Big Cow Creek in a neighborhood known as Singletary Sites. The county Flood Insurance Study does not report a calculated 100-year discharge volume for Big Cow Creek. USGS records flooding occurrences in 1953, 1985 and October 2006 (water year 2007) that greatly exceeded the long-term trend.

5.5.6 Vulnerability and Impact

All structures within the floodway of the Sabine River are vulnerable to extensive damage from flood waters. Many roads within the city and in the unincorporated areas of the County are susceptible to flooding and the potential exists for these roads to be overtopped and even washed out in the future.

5.6 HAIL

5.6.1 Hazard Description

Hail is defined as ice precipitation with a diameter greater than 0.2 inches. Hail develops in the upper atmosphere as ice crystals bounced about by high velocity updraft winds. The ice crystals accumulate frozen droplets and fall after developing enough weight. Hailstorms are most common in the middle latitudes and are brief. Large downdrafts in mature thunderstorm clouds provide the mechanism for hail formation. A hailstorm ordinarily occurs in mid to late afternoon during the passage of a cold front or during a thunderstorm. The severity of hailstorms depends on the size of the hailstones, the length of time the storm lasts, and whether it occurs in developed areas. Hailstorms can cause widespread damage to homes and other structures, automobiles, and crops.

5.6.2 Location

Hail can occur in any portion of the planning area but according to records by the National Weather Service they are most frequent in the north-central portion of the planning area which includes City of Newton.

5.6.3 Extent

According to records maintained by the National Weather Service (NWS), hail has not caused considerable damage to Newton County or the City of Newton. However, it is possible impacts occur which go unreported or are inaccessible to the NWS. The most typical hail impact in Newton County and the City of Newton is superficial damage to vehicles. Public safety risk is present however for those who may be unable to find shelter when a hailstorm begins. Also, damage to windows is a possibility particularly if the hailstones are falling diagonally driven by horizontal winds. Each of these potential impacts are roughly equal for the City and County.

5.6.4 Historical Occurrences

Hail size of 1.75 inches has been reported on numerous occasions, and hail 2.5 inches or greater is considered possible across the planning area including the city. The following table shows hail incidents for Newton County through 2021.

Table 5.6–1 Hail Incidents for Newton County and City of Newton from 1950 – 2021

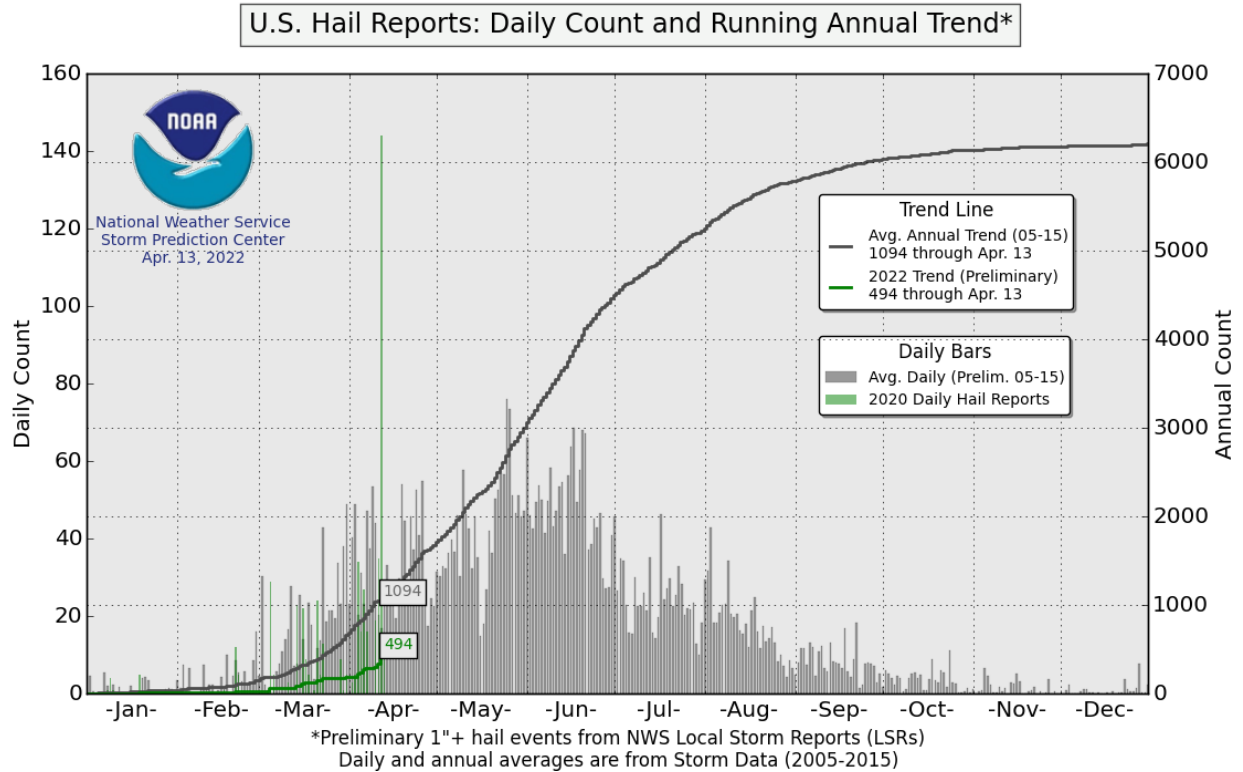
LOCATION	NUMBER OF INCIDENTS	DEATHS	INJURIES	SIZE (INCHES)	DAMAGE
COUNTY (UNINC.)	36	0	0	0.75 – 2.50	\$0.00K
CITY	13	0	0	0.75 – 1.75	\$0.00K

Source: NOAA NCEI Storm Events Database

5.6.5 Probability of Future Events

For the planning area annual probability of future occurrence of hailstorms exceeding 0.75" is 63% each year based on previous frequency over the period 1950-2021. Nationwide, probability peaks in the months of February-April as shown by the following NWS chart.

Figure 5.6–1 U.S. Hail Reports, 1950 – 2021



Source: National Weather Service; Storm Prediction Center; <http://www.spc.noaa.gov/wcm/phailgraph-big.png>

5.6.6 Vulnerability and Impact

The County and the City both have limited vulnerability to hail in the form of outdoor utility components and vehicles. Historically, hail stones have not exceeded 3-inch diameter, but larger stones are always possible. Other assets vulnerable to hail include windows, crops, and people unable to find shelter. Overall vulnerability for City of Newton and Newton County is considered negligible as related to other hazards.

5.7 HAZARDOUS MATERIALS

5.7.1 Hazard Description

The Federal Emergency Management Agency provide the following description:

Chemicals are found everywhere. They purify drinking water, are used in agriculture and industrial production, fuel our vehicles and machines, and simplify household chores. But chemicals also can be hazardous to humans or the environment if used or released improperly. Hazards can occur during production, storage, transportation, use, or disposal. The community is at risk if a chemical is used unsafely or released in harmful amounts.

Hazardous materials (HAZMAT) in various forms can cause fatalities, severe injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes routinely. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines.

Chemical manufacturers are one source of hazardous materials, but there are many others, including service stations, hospitals, and hazardous materials waste sites.

Varying quantities of hazardous materials are manufactured, used, or stored at an estimated 4.5 million facilities in the United States--from major industrial plants to local dry-cleaning establishments or gardening supply stores.

Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation accidents or because of chemical accidents in plants.

5.7.2 Location

The location of the most concentrated and potentially hazardous materials in the planning area are fixed industrial facilities including oil and gas wells and containment facilities, pipelines, and large and small industrial complexes that use or process chemicals or petroleum products, including retail fueling stations. The Hazard Mitigation Team notes the location of pipelines near vulnerable structures and assigns a high priority for acquiring location data for oil and gas wells and pipelines.

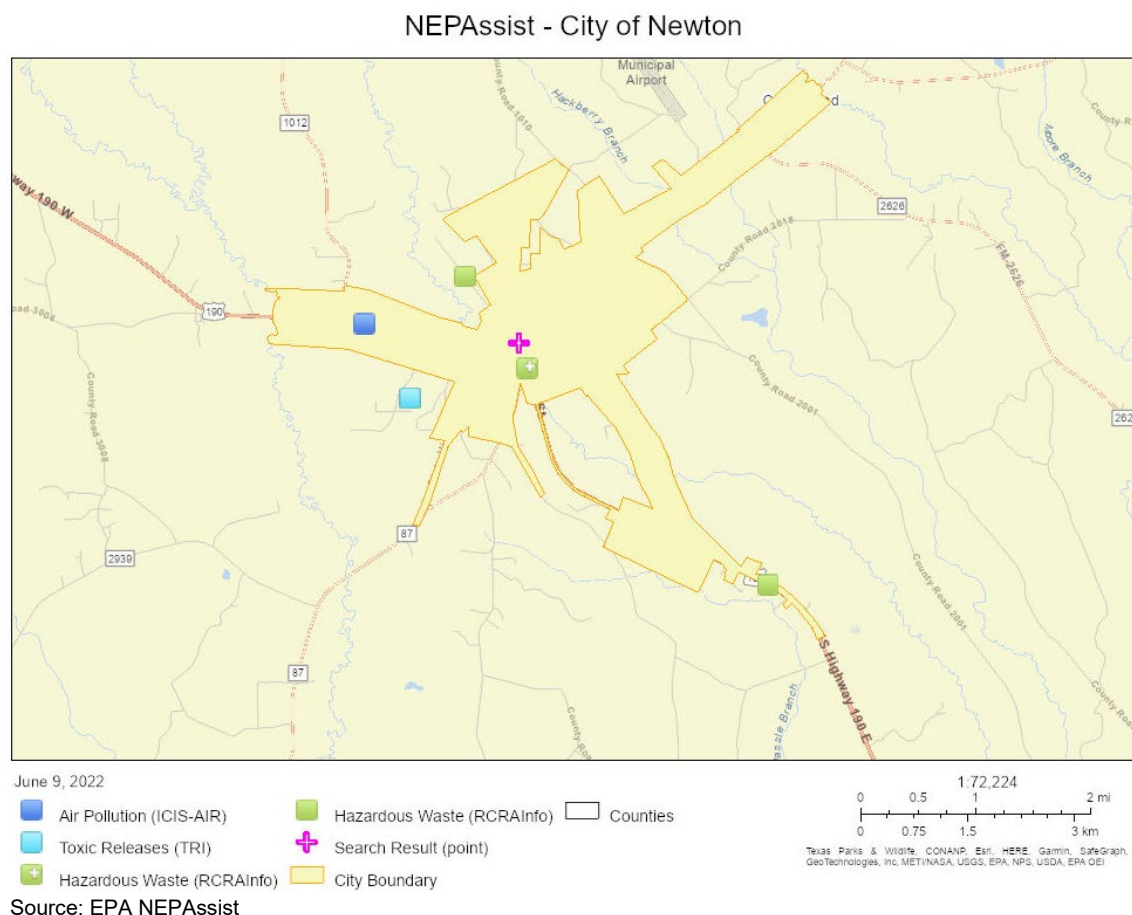
The map below shows HAZMAT facilities identified by the Environmental Protection Agency (EPA) in or near the City of Newton. Table 5.7 – 1, also found below, lists these facilities by name.

Table 5.7–1 HAZMAT Facilities Identified by the EPA, City of Newton

JURISDICTION	FACILITY NAME	ADDRESS
CITY OF NEWTON	C B Automotive	Hwy. 190 Half-Mile
CITY OF NEWTON	Family Dollar #8951	515 W. Court St.
CITY OF NEWTON	GOOCH AUTOMOTIVE	512 Rusk St.
CITY OF NEWTON	Grafford Automotive	Hwy. 190 at Weiss
NEWTON COUNTY	McLeod Timber Products	708 County Road 1001
NEWTON COUNTY	Newton Wood Preserving	2 Miles South Hwy. 87
CITY OF NEWTON	TROTTI AND THOMSON COMPANY	6 Miles Southeast of US 190

Source: EPA NEPAassist

Figure 5.7–1 HAZMAT Facilities Identified by the EPA, City of Newton



Numerous other sources are also present across the planning area, including storage areas for agriculture and forestry related insecticides, herbicides, and fertilizers, wrecking yards, and abandoned industrial facilities.

5.7.3 Extent

Any incident involving the release of hazardous materials that threatens public safety or intermediate term environmental damage is considered severe by the HMC. Thus, based on frequency and potential of hazardous materials releases that could result in human exposure and/or injury, magnitude and severity is considered Major, according to the definitions set out in Section 4.4.

In Newton County, a release of hazardous materials could cause multiple injuries and fatalities and damage property on at least neighborhood scale. The extent of previous occurrences is typified by accidents involving rupture of pipelines, trucking accidents and spills, and fires at storage facilities. No injuries or fatalities are reported, and data regarding property damage and clean-up costs are not available at the time of this writing.

5.7.4 Historical Occurrences

Data for previous occurrences of hazardous materials accidents is limited. The HMC provided the following information regarding previous occurrences of hazardous materials accidents:

Old Salem Area

- Pipeline leaks about 1 per month
- 2-3 gas explosions

Burkeville Area

- Lightning strike caused a fire at an oil storage facility near Burkeville

Bon Wier Area

- Train derailment occurred at Bon Wier in early 2009

Champion Area

- Shallow pipelines have been ruptured by equipment

Newton Area

- 2 miles north on Highway 87 18-wheeler accident involved major spill in 2008

Trout Creek Area

- Fire at oil storage facility Trout Creek
- On at least one occasion an explosion occurred at an oil and gas facility

5.7.5 Probability of Future Events

Based on patterns of previous occurrence and the number of facilities that manage dangerous materials in the southeast Texas region, future probability is qualitatively estimated as Occasional based on the definitions established in Section 4.4.

5.7.6 Vulnerability and Impact

Based on the frequency and severity of previous occurrences, overall vulnerability to hazardous materials is considered Low.

5.8 HIGH WINDS

5.8.1 Hazard Description

This section refers to primarily straight-line wind, those not associated with rotation and thus differentiated from tornadic winds. This type of wind is seen accompanying thunderstorms in Newton County and is responsible for most thunderstorm wind damages. Typical damages include loss of power due to downed trees and power lines as well as overturned mobile homes.

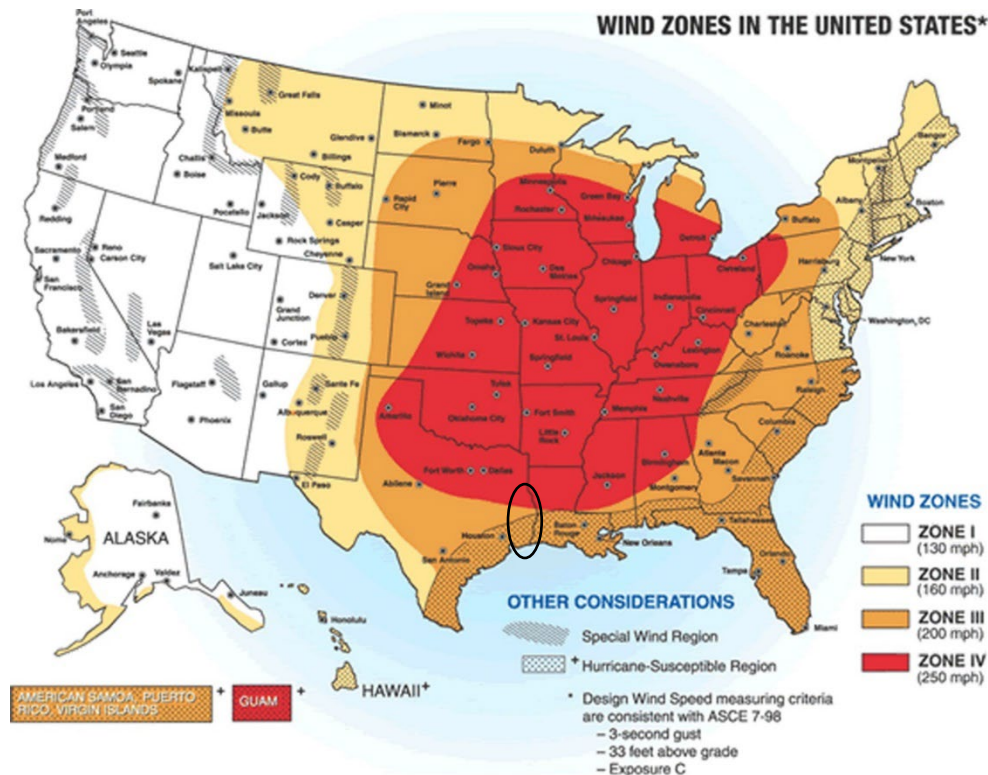
Downbursts, a type of straight-line wind, describe localized events caused by a strong downdraft during a thunderstorm. Strong downbursts can regular both air and vehicular travel extremely dangerous.

Extreme wind events can randomly in any geographic location and are considered a common occurrence in Texas. Therefore, an extreme wind event could occur at any location within the planning area, including all participating jurisdictions.

5.8.2 Location

Due to their random nature, it is assumed that the Newton County planning area is uniformly exposed to the threat of extreme winds. As shown in Figure 5.8–1 below, Newton County is found in a band of the U.S. coastline identified as a Hurricane – Susceptible Region. This region lies within the larger Zone III that can experience wind speeds upwards of 200 mph.

Figure 5.8–1 Wind Zones in the United States



Source: FEMA

5.8.3 Extent

Severe thunderstorms form in areas with a strong vertical wind shear that forces the updraft into the mature stage, the most intense stage of the thunderstorm. Wind speed is generally measured in knots. The conversion of knots to miles per hour is 1 knot = 1.15 mph. Therefore a 50-knot wind is 57.5 miles per hour and a 100-knot wind is 115 miles per hour. Table 5.8–1 below shows an appended Beaufort Wind Scale and the relationship of wind speed in knots, miles per hour, and typical effects on land.

Table 5.8–1 Appended Beaufort Wind Scale

WIND SPEED (KNOTS)	WIND SPEED (MPH)	APPEARANCE OF WIND EFFECTS ON LAND
LESS THAN 1	Less than 1.15	Calm, smoke rises vertically
1 TO 4	1.15 to 4	Smoke drift indicates wind direction, still wind vanes
4 TO 7	4 to 8	Wind felt on face, leaves rustle, vanes begin to move
7 TO 11	8 to 13	Leaves and small twigs constantly moving, light flags extended
11 TO 17	13 to 20	Dust, leaves, and loose paper lifted; small tree branches move
17 TO 22	20 to 25	Small trees in leaf begin to sway
22 TO 28	25 to 32	Larger tree branches moving, whistling in wires
28 TO 34	32 to 39	Whole trees moving, resistance felt walking against wind
34 TO 41	39 to 47	Whole trees in motion, resistance felt walking against wind
41 TO 48	47 to 55	Slight structural damage occurs, slate blows off roofs
48 TO 56	55 to 64	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
56 TO 64	64 to 74	Substantial structural damage
64+	74+	Potentially major structural damage

Source: NOAA Storm Predictor Center

5.8.4 Historical Occurrences

Records of high wind events generated by thunderstorm cells (as opposed to tropical storms and hurricanes) have been reported by the National Centers for Environmental Information a total of 119 times in Newton County and City of Newton combined since 1950. The following table summarizes this data.

Table 5.8–2 Summary Data: High Wind Incidents from 1950 – 2021

LOCATION	NUMBER OF INCIDENTS	DEATHS	INJURIES	DAMAGE
NEWTON COUNTY	93	0	0	\$503,000
CITY OF NEWTON	26	0	0	\$118,000

Source: NOAA NCEI Storm Events Database

Note: Zero (0) values may indicate missing data.

Selected narratives of these events are as follows:

May 29, 1994 – Countywide: Numerous trees were blown over along with power and telephone lines down.

February 10, 1998 – Newton: Many trees were blown down on Highway 87 north of Newton, near the Highway 253 interchange and Ford Cemetery Road.

May 3, 2009 – Mayflower: A long-lived line of severe thunderstorms, called a derecho, developed over central Texas early on May 3, 2009, before moving rapidly eastward across southeast Texas during the morning. Additional strong to severe thunderstorms developed in the wake of the initial derecho across the region into the afternoon hours. Several reports of damaging winds, large hail, and flash flooding were received.

Maximum thunderstorm wind velocity reported by the NCDC for Newton County is 61 knots.

5.8.5 Probability of Future Events

For unincorporated Newton County, there are 93 high wind reports from 1950 – 2021, an average of 1.3 per year which represents a 1-year return interval. The City of Newton covers a smaller geographic area but still recorded 26 events which represents an average of 0.4 per year or approximately 2–3-year return interval.

5.8.6 Vulnerability and Impact

Wind impacts over the last 70 years have resulted in a combined \$621,000 in reported property damage for the City and the County. Most structural damage was caused by trees that were blown over onto houses. Trees blown onto power lines also contribute to this damage and compound the damage by disrupting power distribution.

The pine plantations in the planning area are vulnerable to these high winds as they mature and become less limber. High winds can snap trees causing them to fall on structures, roads, and power lines. Within the City, these trees are more likely to fall on structures than in the unincorporated County but structures in the County have been damaged as well. When these winds accompany extended periods of rainfall the saturated ground loosens its hold on the root system and trees can be blow down. Mobile homes within the city and in the unincorporated County are very susceptible to these winds and even if properly anchored, can still be severely damaged.

5.9 HURRICANE

5.9.1 Hazard Description

Hurricanes and tropical storms are types of tropical cyclones. The basic difference between a hurricane and tropical storm is the intensity of the storm, measured by maximum sustained wind speed. A hurricane has surface winds in excess of 74 miles per hour (64 knots). The tropical storm has surface winds less than those of hurricanes, but greater than 39 miles per hour (34 knots). For locations in the Northern Hemisphere, hurricanes and tropical storms are accompanied by a counterclockwise wind circulation near the earth's surface.

A hurricane and tropical storm can be characterized by storm surges along a coast, high waves, severe winds, coastal erosion, extreme rainfall, thunderstorms, lightning, inland flooding, and the spawning of tornados and microbursts. These typical cyclones will lose strength over land since their energy is derived from warm waters; however, damage from a hurricane and tropical storm can still be extremely destructive several hundred miles inland. Hurricane caused storm surge is an associated threat to Texas and other states along the Gulf of Mexico coastline. According to the Federal Emergency Management Agency (FEMA), a storm surge is "a dome of water pushed onshore by hurricane and tropical storm winds that can reach 25 feet high and be 50 - 1,000 miles wide." A simpler definition is a rise above the normal water level along a shore caused by strong onshore winds and/or reduced atmospheric pressure.

Hurricanes are classified into five categories based on wind speed, central pressure, and damage potential. The classification system for hurricanes is referred to as the Saffir-Simpson Hurricane Scale shown in Table 5.9 – 1 below.

Table 5.9–1 Saffir – Simpson Hurricane Scale

CATEGORY	WIND SPEED (MPH)	EXPECTED DAMAGE
1	74 – 95	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap, and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96 – 110	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (MAJOR)	111 – 129	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (MAJOR)	130 – 156	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted, and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (MAJOR)	157 +	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Source: National Hurricane Center and Central Pacific Hurricane Center, NOAA

5.9.2 Location

The southern border of Newton County is approximately 35 miles inland from the Gulf of Mexico, and northern is approximately 100 miles north. The southern portion of the County has slightly higher probability and magnitude of hurricane as compared to the northern portion.

For additional information on location of hurricane please refer to maps of Newton County in Historical Occurrences (Hurricane Paths) and Vulnerability and Impact (Storm Surges by Category) sections and also Potential Dollar Loss section 4.6.6.

5.9.3 Extent

Wind speeds decay rapidly as storms moved inland, but wind speeds can still be expected to exceed 100 knots and cause major destruction even as far inland as Newton County.

Regarding extent, storms ranging from Tropical storms to Cat 5 hurricanes have made landfall and continued inland to reach the planning area. During a Category 4 hurricane, the entire planning area is likely to expect winds as strong as 109 miles per hour. Projected wind speeds in Newton County for a typical Category 2 hurricane is estimated at approximately 74 miles per hour. A Category 5 hurricane that strikes the Texas coastline is estimated to bring winds in excess of 115 mph to locations in south Newton County.

Though the severity of a storm's impact is higher in southern Newton County due to its closer proximity to the Gulf of Mexico, the entirety of the planning area is at risk during and following a tropical storm or hurricane event. This is depicted in Figures 5.9 – 1 and 5.9 – 2 on the following pages.

5.9.4 Historical Occurrences

According to the National Climatic Data Center, there have been four hurricanes or tropical storms that have impacted Newton County between 2005 and 2021. Table 50.9 – 2 lists the hurricanes and tropical storms that have impacted the county in the last decade and a half.

Table 5.9–2 Hurricanes/Tropical Storms in Newton County, 2005 – 2021

STORM NAME	DATE	CATEGORY	DEATHS	INJURIES	PROPERTY DAMAGE (REGIONAL)
RITA	09/24/2005	5	1	0	\$2,100,000,000
HUMBERTO	09/13/2007	Tropical Storm	0	0	\$50,000
EDOUARD	08/06/2008	Tropical Storm	0	0	TBD
IKE	09/13/2008	4	0	0	\$100,000,000
BILL	06/10/2015	Tropical Storm	0	0	TBD
HARVEY	08/30/2017	4	2	0	\$45,000,000
IMELDA	09/18/2019	Tropical Storm	0	0	\$1,000,000
LAURA / MARCO	08/26/2020	4	0	0	\$105,000,000

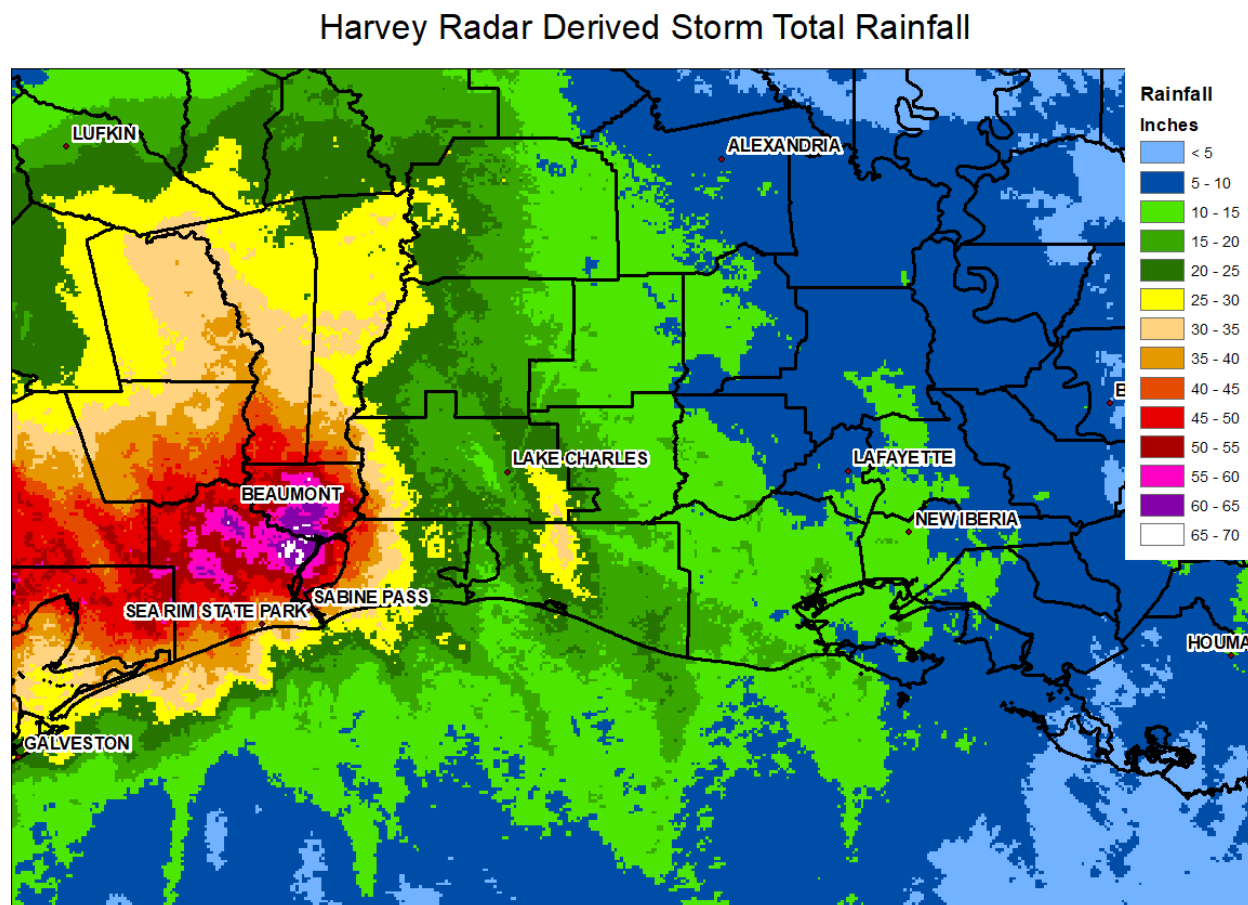
Source: NOAA

Note: Zero (0) values may indicate missing or unreported data.

The most notable tropical storm to affect Newton County since 2008's Hurricane Ike occurred in 2017 when Hurricane Harvey moved inland and produced a major rain event and flooding that devastated the Texas coastline. Profiles of hurricane events in Newton County are provided below in Section 5.9.6. The source of information for profiles is the websites of the National Centers for Environmental Information and FEMA Disaster Summaries.

Figure 5.9 – 1 shows rainfall records from the National Weather Service's National Oceanic and Atmospheric Administration. Rainfall over Newton County was between 20 and 50 inches.

Figure 5.9 – 1 Hurricane Harvey Radar Derived Storm Total Rainfall



Source: NWS NOAA

Figure 5.9 – 2 below shows the eyewall paths of tropical storms and depressions that passed through Newton County from 1875 to 2020. Numerous other hurricanes impacted Newton County prior to (indirect paths) and since 2020 (recent storms) that are not shown on the map.

Newton County, Texas
Hazard Mitigation Action Plan

Legend

- Newton County Hurricanes
- Newton County Primary and Secondary Roads
- City Limits
- Study Region Boundary

Map Info

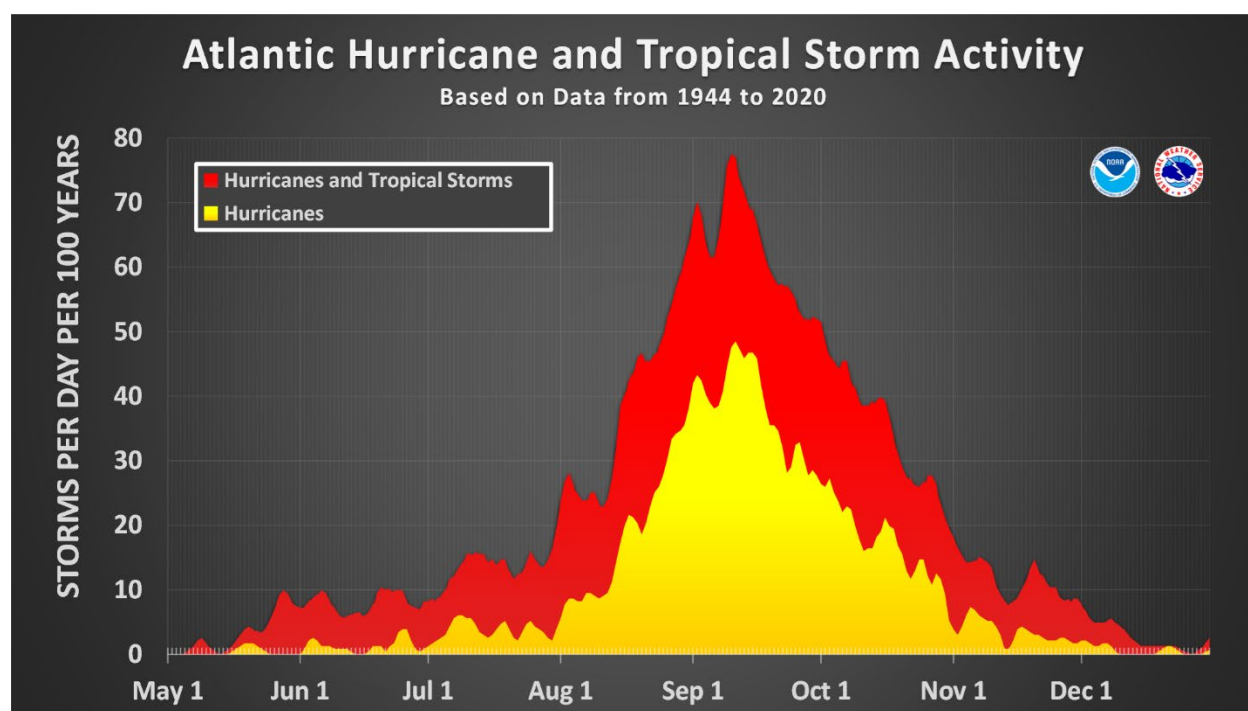
Data Sources:
NOAA

5.9.5 Probability of Future Events

According to NOAA, 78 hurricanes and or tropical storms have tracked less than 125 miles from Newton Texas since 1854. This equates to one storm about every two years that affects Newton County. There will be storm seasons that pass without incident and there will be seasons like 2008 when multiple named storms make landfall. Over time, the average will remain the same.

The official season for hurricanes and tropical storms is from June 1 to November 30. Peak storm activity often occurs in September. Considering probability based on time of year, based on patterns of previous occurrences probability is highest in the month of September, as indicated by Figure 5.9 – 3.

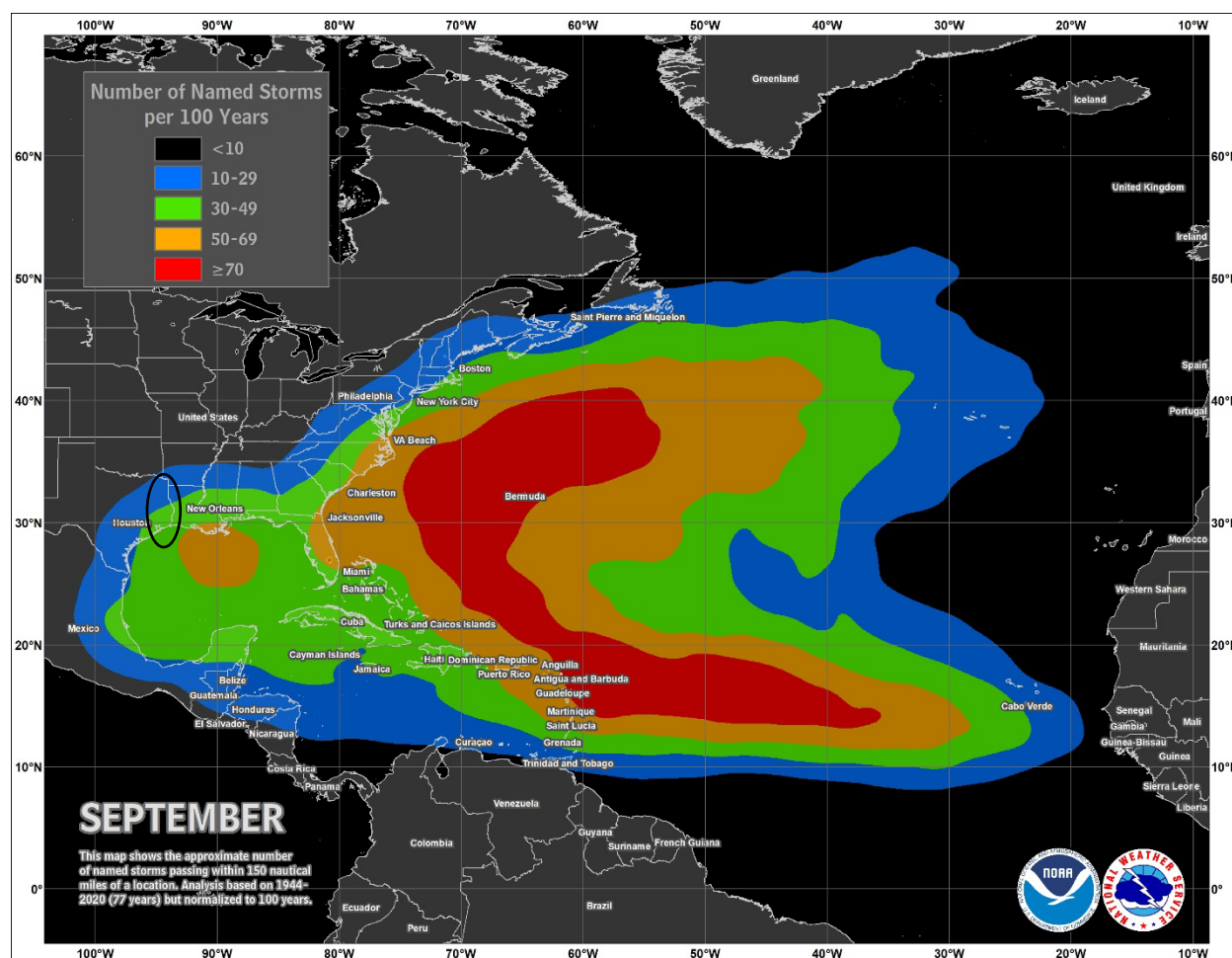
Figure 5.9 – 3 Hurricane Frequency by Month, Atlantic Ocean



Source: NOAA, National Hurricane Center, and Central Pacific Hurricane Center

The following map shows where named storms in the Atlantic Ocean tend to occur during the month of September, the month with the highest probability of occurrence. Per the map, the Newton County region sees up to 49 named storms per 100 years in September alone. Per Table 5.9 – 2, the notable hurricanes Rita, Humberto, Ike, and Imelda all occurred in the month of September.

Figure 5.9 – 4 Number of Named Storms per 100 years in September, Atlantic Ocean



Source: NOAA, National Hurricane Center, and Central Pacific Hurricane Center

5.9.6 Vulnerability and Impact

Both the City of Newton and Newton County has experienced heavy rains and winds, causing flooding, toppled trees, closed roads, and electrical blackouts. The area is also at risk from tornados that are spawned by hurricanes and tropical storms as they move inland. In general, any tropical storm or hurricane that causes winds in excess of 60 knots is considered severe by the community. The following are impact narratives specific to selected major storms:

Hurricane Rita (2005) – Both the City of Newton and Newton County experienced a 2 – 3-week electrical blackout following. Damaged trees, structures, and blocked roads impacts were widespread across the region.

Hurricane Ike (2008) – Both the City of Newton and the County experienced impacts from Hurricane Ike. The most severe impacts occurred in southern Newton County which experienced damage from high winds in addition to storm surge flooding along the Sabine River. In the City of Newton and northern Newton County impacts were primarily high winds which led to electrical blackouts, damaged trees, and blocked roads.

Tropical Storm Bill (2015) – Tropical Storm Bill moved inland and produced a major rain event and flooding across the geographic area of southern and central Newton County with lesser but still significant impacts in the north. Flooding of roads and some structures occurred. Impacts in the City of Newton involved street flooding and stream channel damage in the city park.

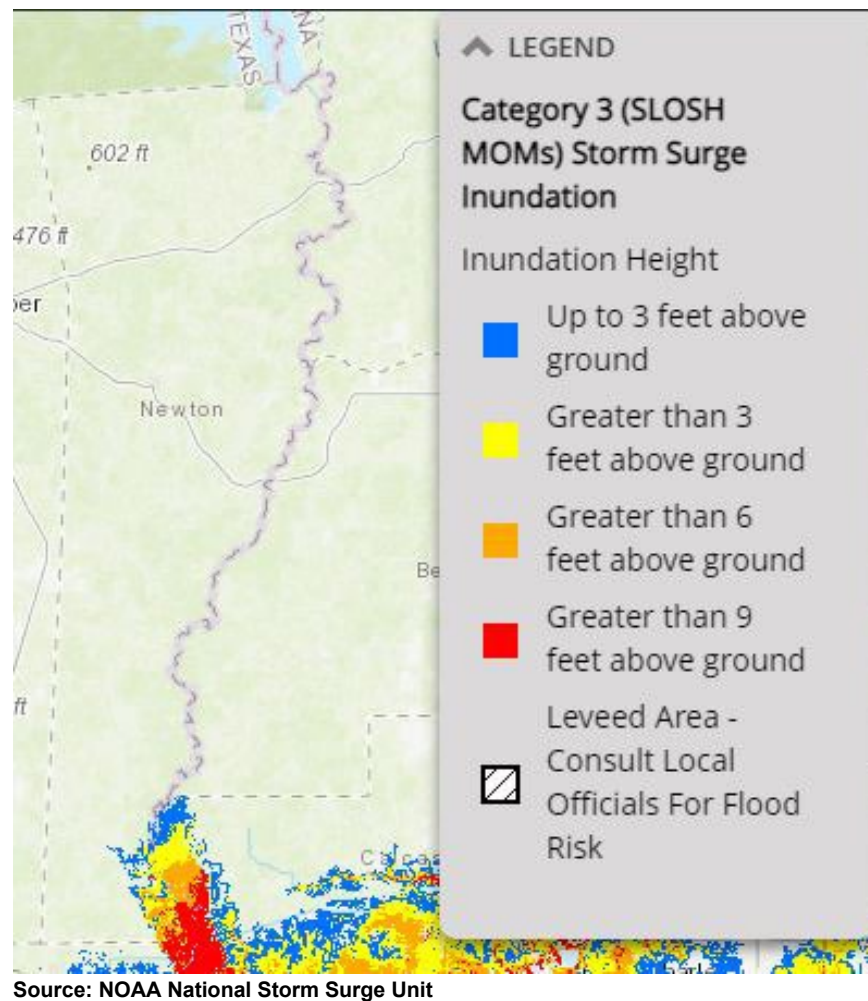
Hurricane Harvey (2017) – Harvey produced 20 to 40 inches of rain across a large portion of the Newton County. This resulted in near 2,000 homes being flooded. Hardest hit areas were Trout Creek, Call, and along Big Cow Creek and the Sabine River. The Sabine River reached its 3rd, 4th, and 5th highest crests at Deweyville, Bon Weir, and Burkeville, respectively. As estimated \$45 million in damages were incurred.

Hurricane Imelda (2019) – Imelda brought 18 to 30 inches of rain to the southern sections of Newton County. Numerous roads were closed due to flooding. Less than 25 homes were reported to have flooded.

Hurricane Laura / Tropical Storms Marco and Laura (2020) – There was a mandatory evacuation for the county. Many trees and power line were blown down across the county. Homes and businesses were damaged from trees falling on them or wind. Over 60 percent of the county was without power immediately after the storm. Wind gusts ranged from 70 to 110 mph across the county. An estimated \$105 million in damages were incurred.

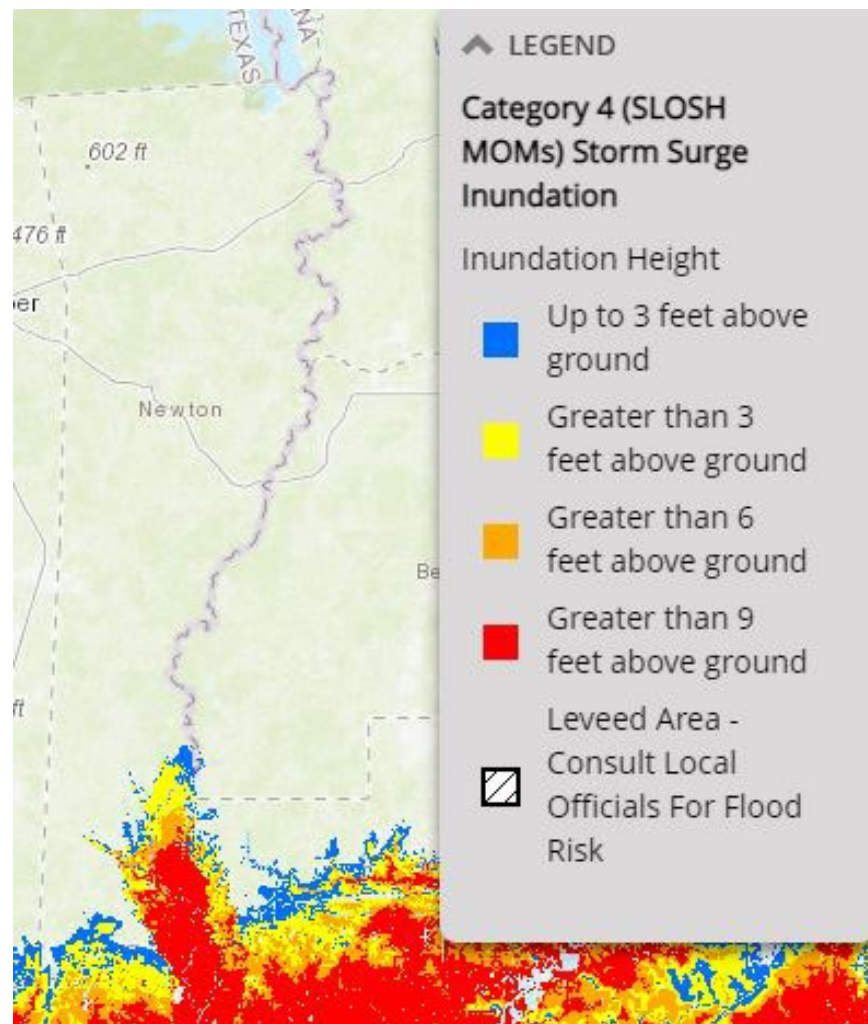
NOAA's Storm Surge Unit has produced Storm Surge Hazard Maps for the Texas Gulf Coast. Per their models, Category 1 hurricanes do not generate a storm surge strong enough to breach the southern border of Newton County. Category 2 hurricanes see storm surges of less than three feet (3.0') affecting the southeasternmost corner of the county along the Sabine River. Models for Categories 3, 4, and 5 can be found on the following pages:

Figure 5.9 – 5 Category 3 Storm Surge Inundation



Category 3 hurricanes see storm surges greater than three feet (3.0') in the community of Deweyville, greater than six feet (6.0') along the marshland, and greater than nine feet (9.0') adjacent to the Sabine River at the southeasternmost corner of the county.

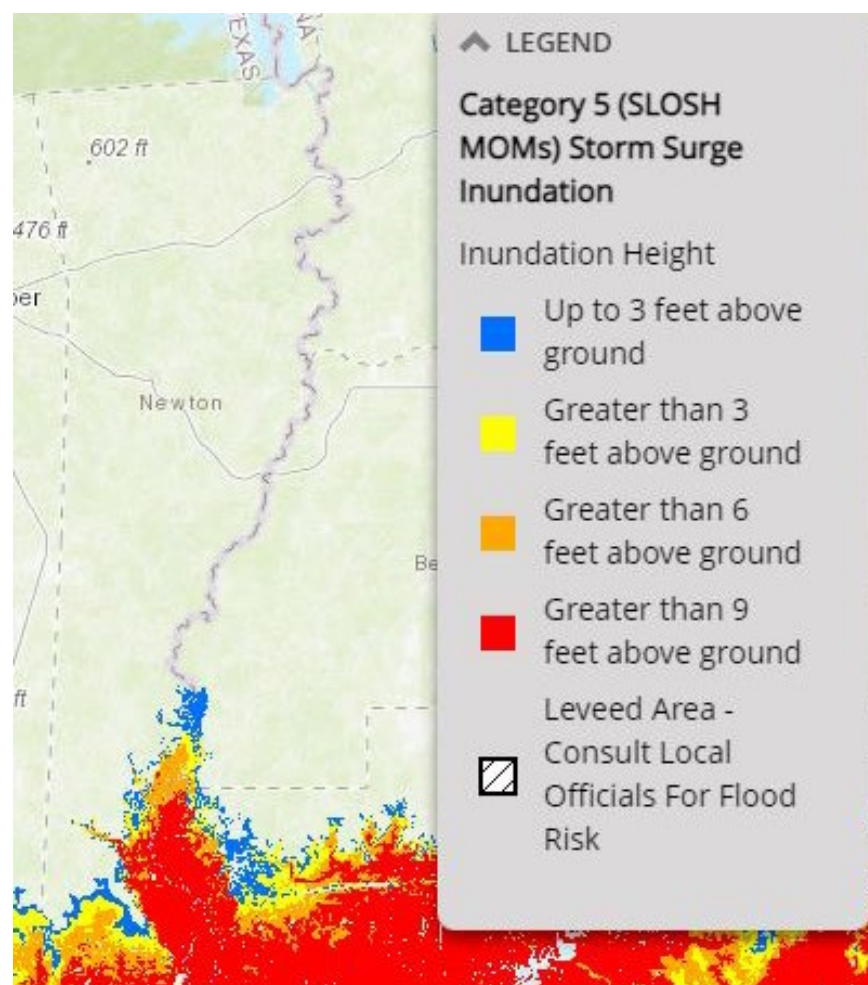
Figure 5.9 – 6 Category 4 Storm Surge Inundation



Source: NOAA National Storm Surge Unit

Category 4 hurricanes see storm surges greater than nine feet (9.0') in the community of Deweyville, with surges greater than six feet (6.0') extending northwest along Cypress Creek, and greater than three feet (3.0') adjacent to the Sabine River along the central eastern boundary of the county.

Figure 5.9 – 7 Category 5 Storm Surge Inundation



Source: NOAA National Storm Surge Unit

Category 5 hurricanes see storm surges greater than nine feet (9.0') in the community of Deweyville and extending northwest along Cypress Creek, and greater than six feet (6.0') adjacent to the Sabine River along the central eastern boundary of the county.

Based on the definitions established in Section 4.4; the magnitude, severity and extent of hurricanes/tropical storms are considered Catastrophic, with major damage on a regional scale and potential for multiple injuries and fatalities. Additional information regarding extent of hurricanes is developed in Section 4.6 (Vulnerability Assessment).

Hurricane vulnerability for the City of Newton primarily involves wind impacts to the local electrical grid as well as structures which are not built to withstand high winds (particularly those near trees).

Hurricane vulnerability for Newton County involves the same as those for the city of Newton, plus potential for storm surge flooding in south Newton County along the Sabine River and along stretches of Hwy 12 and Hwy 87. See also Sections 4.6.4 (Vulnerable Populations) and 4.6.8 (Vulnerable Structures) for additional information.

For both the City of Newton and Newton County mobile homes somewhat heightened degree of vulnerability to hurricane wind damage, due to their weight to surface area ration and typically higher than average elevation profile.

Housing developments along the Sabine River at Ruliffe and Indian Lake are vulnerable to damage due to rise in river levels from both storm surge and heavy rainfall brought by hurricanes. Forestry plantations in the planning area remain vulnerable to the extreme winds and frequent tornados caused by hurricanes. Not only is timber damaged, these trees, when they fall or are snapped off midway up, fall on above ground power lines and disrupt power supply to remote communities sometimes weeks at a time.

The impact is compounded by the heat of East Texas when hurricanes make landfall during the hottest months of late summer. Lack of electricity and damaged fresh water supply systems of the City and County, bring increased suffering to residents of the area that now have no shelter from the heat or fresh water. High winds and flood waters will affect structures and utility systems across the entire planning area.

5.10 LIGHTNING

5.10.1 Hazard Description

Lightning typically occurs as a by-product of a thunderstorm. The action of rising and descending air separates positive and negative charges, with lightning being the result of the buildup and discharge of energy between oppositely charge areas. The hazard posed by lightning is underrated. Lightning is the most dangerous frequently encountered weather hazard that most people in the United States experience annually. Direct strikes can significantly damage critical facilities, both buildings and infrastructure. Lightning strikes can also ignite wildfires, rapidly broadening the footprint of potential damages.

According to NOAA, lightning was the third most frequent weather fatality in 2020, behind floods and excessive heat, causing approximately 300 deaths and injuries annually.

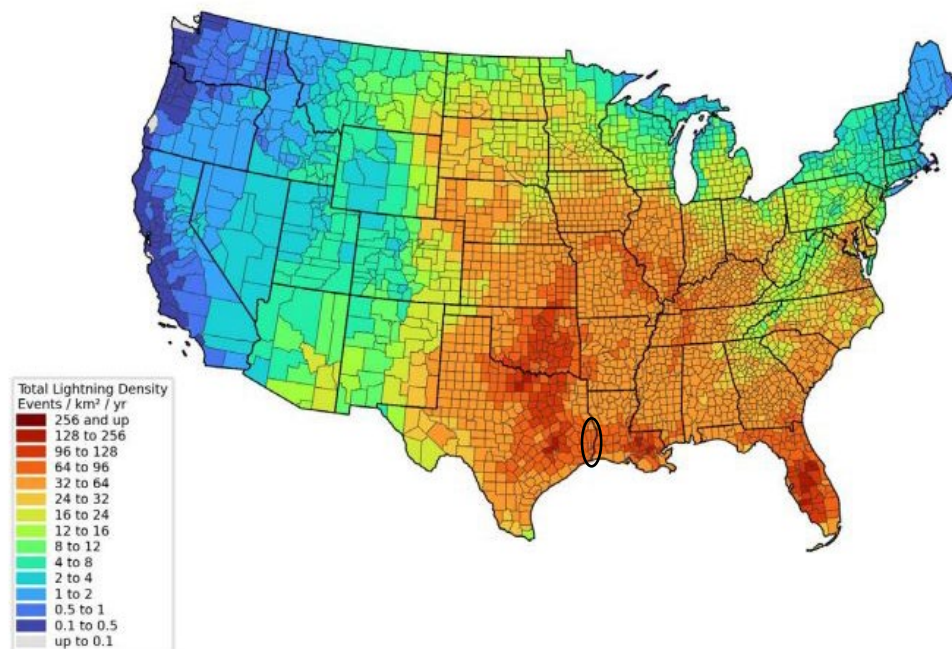
5.10.2 Location

Lightning is also known to impact all regions of the planning area. Lightning knocked out power and communications in Newton County as recently as June of 2020 and has impacted the planning area on numerous other occasions. It is assumed that the entire Newton County planning area is uniformly exposed to the threat of lightning.

5.10.3 Extent

The map below shows the southeast Texas region that includes Newton County has a relatively high frequency of lightning occurrence, averaging 64 to 96 events per square kilometer per year.

Figure 5.10–1 Total Lightning Density Per County, 2015 – 2020



5.10.4 Historical Occurrences

Severe lightning is a relatively frequent occurrence in Newton County. According to the Vaisala lightning density map, from 2005 – 2014, Newton County and the City of Newton received between 64 to 96 events per square kilometer per year.

May 31, 2015 – Lightning hit the detached garage of a homestead east of Newton causing the garage to catch fire and burn to the ground before fire crews arrived. This same day, lightning hit a utility pole causing an unknown amount of damage.

5.10.5 Probability of Future Events

Based on historical data, Newton County and the City of Newton can expect to receive between 64 to 96 events per square kilometer per year.

5.10.6 Vulnerability and Impact

Lightning strikes have caused structural fires, wildfires, and power outages along with damage to communications equipment and other electronic devices to Newton County and the City of Newton. The County and the City both have facilities that do not have lightning rods and grounding systems. Lightning could potentially strike any of these structures any time the proper conditions exist. These structures could potentially catch fire and at a minimum would sustain structural damage. Communications towers for City and County law enforcement and fire departments are vulnerable as well, potentially causing loss of dispatch communications and irreparable damage to communications equipment and components.

5.11 PANDEMIC

5.11.1 Hazard Description

This hazard was added to the 2022 Plan Update following the ongoing COVID-19 pandemic. A pandemic is identified as an outbreak of a novel infectious disease over a whole country or the world. Infectious diseases kill millions globally each year and are recognized as a major world health threat by FEMA. Transmission of infectious diseases is often through close physical contact with infected persons, more specifically through airborne inhalation, bodily fluids, contaminated surfaces, or through vector-borne dissemination.

Key differences between endemics, epidemics, and pandemics focus on the volume and season of diseases. An endemic disease can also be thought of as baseline, a continuous presence that is considered “normal.” A disease epidemic is a sharp increase in the number of cases above the endemic level. Lastly, a pandemic is an epidemic that has seen a sharp increase in the number of countries or continents affected. In the United States, the chicken pox is an endemic disease. In tropical Africa, however, classifies malaria as such. A polio epidemic ravaged New York City in 1916, killing 6,000 and leaving another 27,000, mostly children, with permanent disabilities. Perhaps the most infamous example of a pandemic was the Black Death, an outbreak of the bubonic plague that killed one-third of Europe’s population in the late 1340s. While the seasonal flu is also considered to be endemic, new strains can quickly catapult it to epidemic or even pandemic status.

Pandemics often get their start in densely populated areas. With the rise of the globalized economy, communities, states, and nations all over the world are vulnerable now more than ever to novel strains of infectious diseases.

There is no question that it was the COVID-19 pandemic that prompted the inclusion of this hazard into the Newton County Hazard Mitigation Action Plan 2022 Update.

According to the CDC, of the top ten leading causes of death in the United States in 2020, two were infectious diseases as shown below:

Table 5.11–1 Excerpts from Top Ten Leading Causes of Death in the US, 2020

RANKING	CAUSE	NUMBER OF DEATHS
2 ND	COVID-19	350,831
9 TH	Influenza and Pneumonia	53,544

Source: National Center for Health Statistics, CDC

Comparably, the World Health Organization (WHO) reports that three of the top ten cause of death globally were infectious diseases:

Table 5.11–2 Excerpts from Top Ten Leading Causes of Death Globally, 2020

RANKING	CAUSE	NUMBER OF DEATHS
4 TH	Lower Respiratory Infections	2,600,000
5 TH	Neonatal Conditions	2,000,000
8 TH	Diarrheal Diseases	1,500,000

Source: World Health Organization (WHO)

It should be noted that many of the communicable diseases that are prevalent globally, do not have the same level of presence or impact in the United States. Access to healthcare, advanced infrastructure, and vaccine availability have all contributed to the decline of many diseases in the twenty-first century that were widespread and catastrophic less than a century ago.

Though coronaviruses have been known to healthcare researchers and providers for over a century, COVID-19 is a novel strain. Patients may be asymptomatic, have common cold-like systems, influenza-like systems, require a ventilator, or even succumb to the disease. The wide breadth of symptoms made the virus especially difficult to predict. Though the elderly or those with pre-existing conditions are more susceptible to serious illness, this is more of guidance than a rule. The presence of asymptomatic cases made the virus especially difficult to contain.

Like communities around the state, nation, and globe, Newton County has been significantly impacted by this virus with 1,367 confirmed cases (approximately 11.1% of its population) and 61 related deaths. The COVID-19 infection was declared a pandemic by the World Health Organization on March 11, 2020.

The CDC contains the latest information and guidance on the COVID-19 pandemic and provides recommendations on protecting citizens and reducing the spread of the disease. The most current recommendations include:

Get Vaccinated and stay up to date on your COVID-19 vaccines:

- COVID-19 vaccines are effective at preventing you from getting sick. COVID-19 vaccines are highly effective at preventing severe illness, hospitalizations, and death.
- Getting vaccinated is the best way to slow the spread of SARS-CoV-2, the virus that causes COVID-19.
- CDC recommends that everyone who is eligible stay up to date on their COVID-19 vaccines, including people with weakened immune systems.

Wear a mask:

- Everyone ages 2 years and older should properly wear a well-fitting mask indoors in public in areas where the COVID-19 Community Level is high, regardless of vaccination status.
- Wear a mask with the best fit, protection, and comfort for you.
- If you are in an area with a high COVID-19 Community Level and are ages 2 or older, wear a mask indoors in public.
- If you are sick and need to be around others or are caring for someone who has COVID-19, wear a mask.
- If you are at increased risk for severe illness or live with or spend time with someone at higher risk, speak to your healthcare provider about wearing a mask at medium COVID-19 Community Levels.
- People who have a condition or are taking medications that weaken their immune system may not be fully protected even if they are up to date on their COVID-19 vaccines. They should talk to their healthcare providers about what additional precautions may be necessary.

Stay 6 feet away from others:

- Inside your home: Avoid close contact with people who are sick, if possible. If possible, maintain 6 feet between the person who is sick and other household members. If you are taking care of someone who is sick, make sure you properly wear a well-fitting mask and follow other steps to protect yourself.
- Indoors in public: If you are not up to date on COVID-19 vaccines, stay at least 6 feet away from other people, especially if you are at higher risk of getting very sick with COVID-19.

Wash your hands often

- Wash your hands often with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.
- It is especially important to wash your hands:
 - Before eating or preparing food
 - Before touching your face
 - After using the restroom
 - After leaving a public place
 - After blowing your nose, coughing, or sneezing
 - After handling your mask
 - After changing a diaper
 - After caring for someone sick
 - After touching animals or pets
- If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.
- Avoid touching your eyes, nose, and mouth with unwashed hands.

Cover coughs and sneezes

- If you are wearing a mask: You can cough or sneeze into your mask. Put on a new, clean mask as soon as possible and wash your hands.
- If you are not wearing a mask:
 - Always cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow and do not spit.
 - Throw used tissues in the trash.
 - Immediately wash your hands with soap and water for at least 20 seconds. If soap and water are not readily available, clean your hands with a hand sanitizer that contains at least 60% alcohol.

Clean and disinfect

- Clean high touch surfaces regularly or as needed and after you have visitors in your home. This includes tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, and sinks.
- If someone is sick or has tested positive for COVID-19, disinfect frequently touched surfaces.
 - Use a household disinfectant product from EPA's List N.
 - If surfaces are dirty, clean them using detergent or soap and water prior to disinfection.

Monitor Your Health Daily

- Be alert for symptoms:
 - Watch for fever, cough, shortness of breath, or other symptoms of COVID-19.
 - Take your temperature if symptoms develop.
 - Do not take your temperature within 30 minutes of exercising or after taking medications that could lower your temperature, like acetaminophen.
 - Follow CDC guidance if symptoms develop.
- Monitoring symptoms is especially important if you are running errands, going into the office or workplace, and in settings where it may be difficult to keep a physical distance of 6 feet.

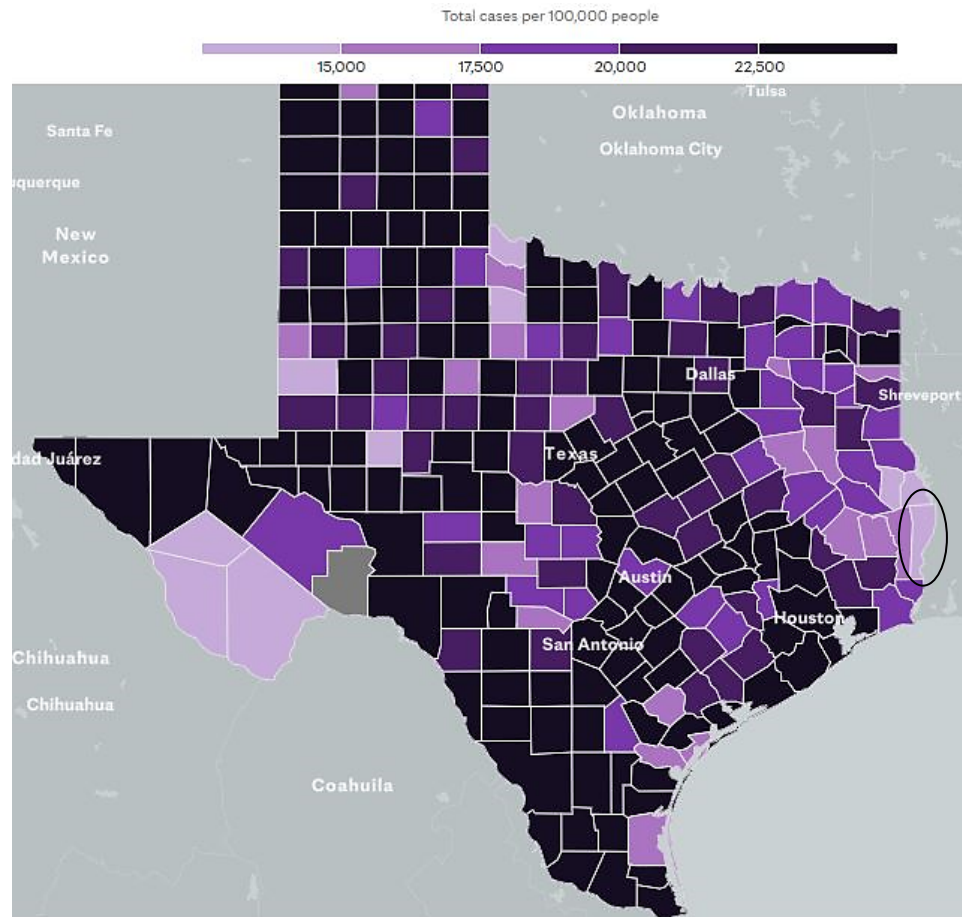
5.11.2 Location

Pandemics are random and uncommon. Unlike other hazards, pandemics do not follow county lines or other jurisdictional boundaries. They can occur throughout the planning area. Global air travel makes it increasingly difficult to pinpoint or contain localized outbreaks. The spread and severity of infectious diseases in any given country hinges on its healthcare infrastructure. In the United States, the Centers for Disease Control and Prevention (CDC) is the national public health agency. It acts under the Department of Health and Human Services and its duties include the monitoring, control, and prevention of disease

outbreaks. Though its focus is at the federal and state level, increased globalization has forced the CDC to broaden its monitoring to the worldwide level.

The Texas Department of State Health Services (DSHS) under the Health and Human Services Commission (HHSC) is the CDC's state counterpart.

The map below, produced by the Mayo Clinic, depicts the cumulative number of COVID-19 cases since the beginning of the pandemic by County. Newton County is shown in light purple, the lowest density. Regions of Texas with the highest population densities were the most affected. Newton County's rural demographic served as a positive attribute.



Source: Mayo Clinic

5.11.3 Extent

Pandemic severity can be evaluated at the community, state, federal, or global level. Severity can differ based on the vulnerability, density, or resources of a specific population. The most common measure of severity for a pandemic virus event is the case-fatality rate (CFR). The COVID-19 CFRs for Newton County, Texas, and the United States for at the time of this writing are shown below. As you can see, while the state and federal rates are comparable, Newton County's CFR is nearly triple that of the United States.' This could be attributed in part to the County's above-average populations of those 65 and older and those with pre-existing conditions, both demographics especially vulnerable to COVID-19.

Equation 1: Base equation for CFR

$$\text{Case Fatality Rate} = \frac{\text{Number of Death from Disease}}{\text{Number of Diagnosed Cases of Disease}} \times 100$$

Equation 2: Newton County CFR

$$\text{Newton County CFR} = \frac{61}{1,367} \times 100 = 4.46$$

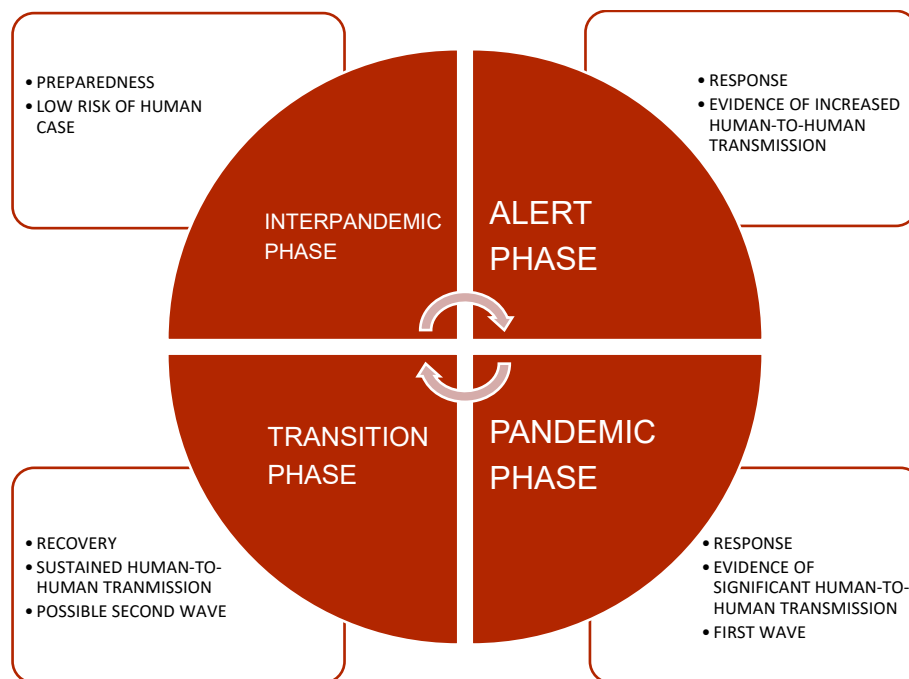
Equation 2: State of Texas CFR

$$\text{State of Texas CFR} = \frac{88,450}{6,800,000} \times 100 = 1.30$$

Equation 2: United States CFR

$$\text{United States CFR} = \frac{998,000}{82,400,000} \times 100 = 1.21$$

The World Health Organization (WHO) has developed a four-part warning system for the life cycle of pandemics. This cycle can be found below. At the time of this writing, it is generally agreed that COVID-19 is slowly transitioning to become endemic.



5.11.4 Historical Occurrences

There have been several instances of infectious diseases across the county in the last fifteen years.

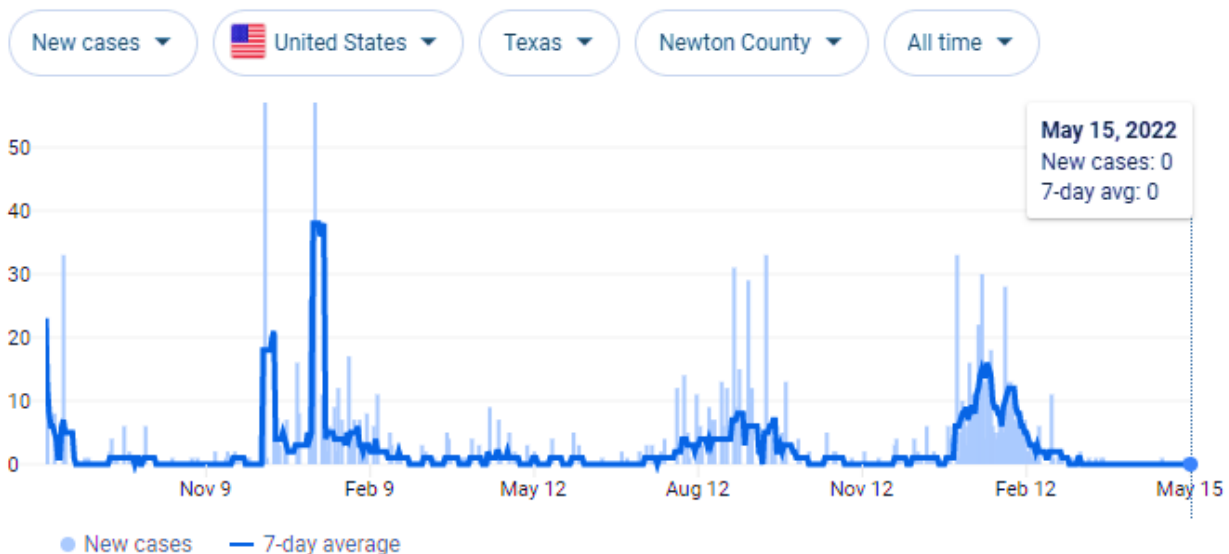
In March of 2009, a novel strain of Influenza A (H1N1 or “Swine Flu”) virus was detected in Mexico and the United States. The virus spread worldwide. Final infection estimates were published in 2011. These

final estimates were that from April 12, 2009 – April 10, 2010, approximately 60.8 million cases, 274,304 hospitalizations, and 12,469 deaths occurred in the United States due to H1N1 ³. The most reported symptoms include cough, fever, sore throat, and gastrointestinal symptoms, such as vomiting and diarrhea. Most individuals infected with H1N1 did not require hospitalization and had symptoms that lasted four days.⁴

In 2019, the CDC reported three cases of measles at Fort Bliss in Newton. The cases included one child and two adults.

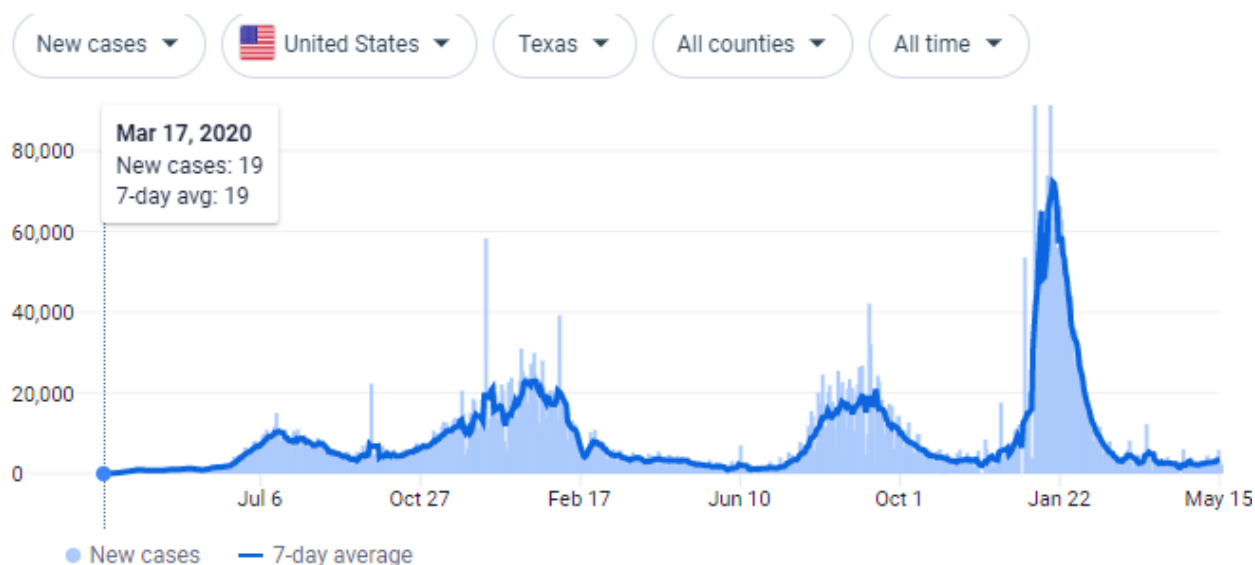
COVID-19 first surfaced in late 2019, with WHO first reporting of a “viral pneumonia” in Wuhan, Hubei Province, People’s Republic of China. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the scientific designation of the novel strain. Quickly after its discovery in Wuhan, the virus spread across the country, the continent, and the world. As previously mentioned, the globalized nature of our economy is a prime environment for pandemics to gain traction. The rapid uptick in cases caused significant strain on the healthcare infrastructure of many countries, including the United States. Newton County does not have any hospitals, with the nearest facility to the City of Newton being CHRISTUS Southeast Texas – Jasper Memorial Hospital in Jasper, approximately 16.5 miles from the city center.

The following graphs from The New York Times compare the trends of the COVID-19 pandemic from March 2020 to present in Newton County and the State of Texas as a whole. One can see that Newton County experienced its peak in January 2021, with secondary smaller surge exactly one year later in January 2022.



Source: The New York Times

Interestingly, Texas did not experience a true peak in 2020 or the first half of 2021, but rather a steady, elevated case-count for much of the year. A smaller surge occurred in fall of 2021 with the State's peak arriving in January of 2022.



Source: The New York Times

5.11.5 Probability of Future Events

Man is not new to pandemics or epidemics and endemics. Events have happened periodically for thousands of years. The advancement of modern medicine and an understanding of microscopic agents has greatly lowered the mortality rate and severity of these diseases across the board. Conversely, densely populated urban areas increase the probability that such an event can and will occur. Likewise, global trade and travel make it near impossible to localize and isolate new strains.

Above-average numbers of vulnerable populations render the Newton County planning area vulnerable to an outbreak.

With the ongoing COVID-19 pandemic, the probability of a new pandemic in the Newton County planning area is unlikely within the next planning cycle. Still, as diseases continue to involve and mutate, the severity of the next event could be catastrophic. At the time this writing, the Newton County planning area was still suffering the impacts of the COVID-19.

5.11.6 Vulnerability and Impact

Critical infrastructure facilities and services most vulnerable to this type of hazard include emergency services, utility services, water services, and telecommunications. The COVID-19 pandemic saw large numbers of people needing to quarantine. A downed or reduced workforce can significantly impact the day-to-day operations of critical City and County departments. The Newton County planning area saw several of its facilities experience temporary closures due to office outbreaks of COVID-19.

Many portions of the state and country experienced severe overloads of healthcare systems. Clinics, emergency rooms, and hospitals can only be at or over capacity for so long before the quality of healthcare provided is negatively affected. Healthcare professionals saw a dramatic rise and mental

health crises throughout the pandemic due to being overworked, burnt out, and traumatized at the daily death rates of patients in their care.

It is hard to know the long-term physical, mental, and emotional effects of many infectious diseases, especially novel ones. Research has only just begun on the potential long-term effects of COVID-19. Prolonged illnesses in large swaths of a population only further taxes a healthcare system.

Many school districts around the state went to remote learning at various points during the pandemic. The rural nature of Newton County made this a particularly difficult and largely ineffective option for the County. The disruption of educational services during future events could have an unquantifiable effect on vulnerable young people.

The National Library of Medicine estimates that the season flu has an annual economic cost of \$87.1 billion, including 44 million working dates lost because of illness. Eighty-three percent (83%) of this cost is attributed to the deaths.

The Department of Economic and Social Affairs at the United Nations has estimated that COVID-19 will take a nearly \$8.5 trillion toll on the global economy. This sharp hit can only be compared to the Great Depression in the 1930s. Perhaps more upsetting is the estimation that an additional 34.3 million people across the globe will fall below the extreme poverty line as a direct result of the pandemic.

Pandemics can undermine the public's confidence in its government and leaders at a local, state, or federal level. Disagreements over action or inaction, accounts of inequality in health care or services, and perceptions of threats to freedom (from quarantine requirements or travel bans) can all result in discord and civil resistance or even unrest.

It is imperative for Newton County to keep an open line of communication with citizens during a pandemic outbreak and to be transparent throughout decision-making processes and the implementations of proclamations or orders. Likewise, Newton County should keep abreast of state and federal policies and statistics throughout the duration of an event.

5.12 TORNADO

5.12.1 Hazard Description

The National Weather Service defines a tornado as a “violently rotating column of air extending from a thunderstorm to the ground.” Tornadoes are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 mph, and damage paths can be more than one mile wide and 50 miles long. Tornadoes occur most frequently from April to June. While most tornadoes occur between 3:00 and 9:00 p.m., a tornado can occur at any time of day.

The Enhanced Fujita Scale is presented in Table 5.12-1.

Table 5.12–1 Enhanced Fujita Scale

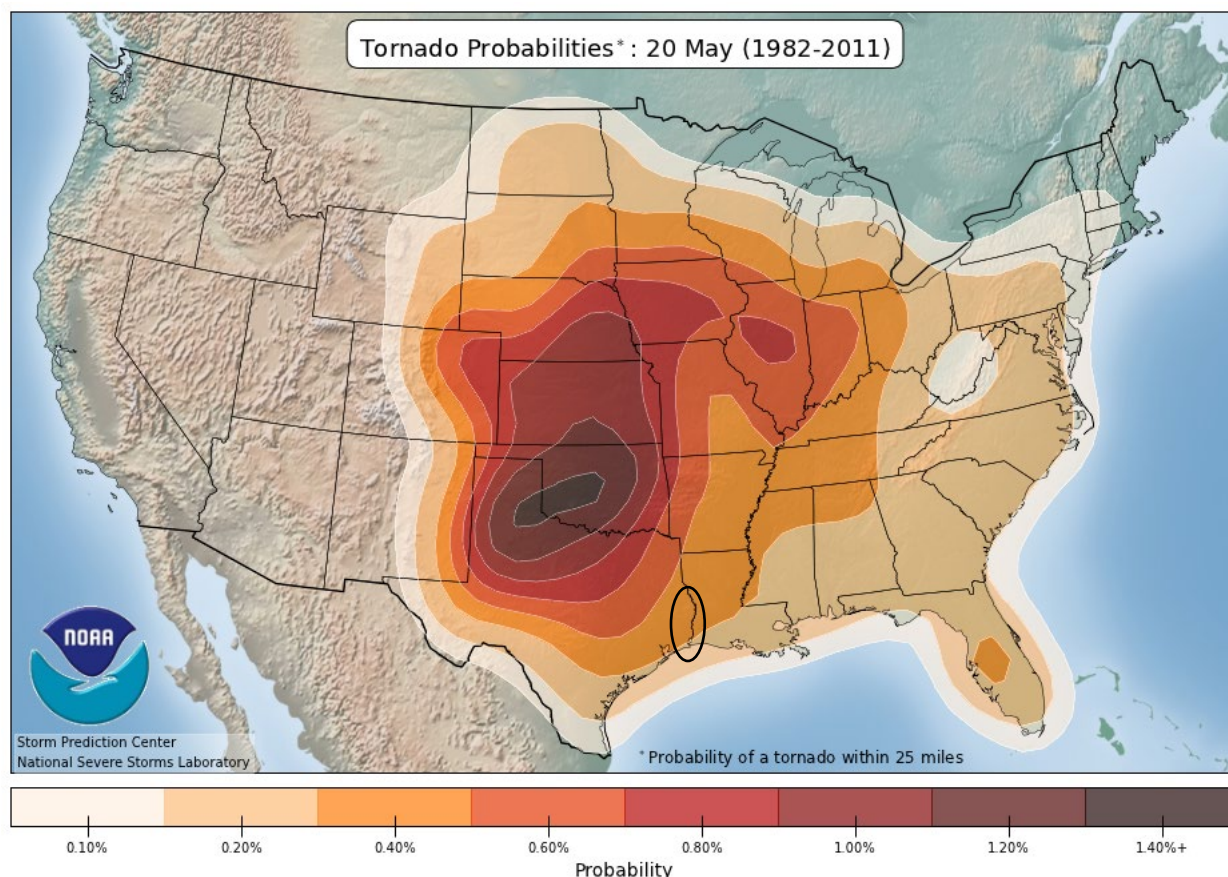
EF-SCALE	WIND ESTIMATE (MPH)	F-SCALE	WIND ESTIMATE (MPH)
0	65 – 85	0	45 – 78
1	86 – 110	1	79 – 117
2	111 – 135	2	118 – 161
3	136 – 165	3	162 – 209
4	166 – 200	4	210 – 261
5	over 200	5	262 – 317

Source: National Oceanic and Atmospheric Administration Storm Prediction Center,
www.spc.noaa.gov/faq/tornado/ef-scale.html

5.12.2 Location

As shown in the NOAA / NWS Storm Prediction Center’s map below, Newton County lies on the southern fringes of what is colloquially known as “Tornado Alley,” a loosely defined portion of the central US where tornadoes are prevalent. Newton County lies in the orange zone, with an annual probability around 40-percent (40%).

Figure 5.12–1 Tornado Probabilities, 1982 – 2011



Source: Storm Prediction Center, NOAA / NWS

Historically tornadoes have caused varying amounts of damage in Newton County and the city of Newton. From minor roof damage to houses to destroying them completely. Mobile homes have been overturned and people have been thrown from them as well as frame houses. Vehicles have been flipped over and in at least one case, moved without damaging it. From the earliest recorded tornado, back in 1954, tornadoes have caused nearly \$4.6 million worth of damage in the county. The pine plantations of the timber industry have fallen victim as well. The tall pine trees have been blown over and sometimes snapped off halfway up the tree. This greatly reduces the value of the tree if it can be salvaged at all. But most of these damaged trees are a total loss.

Based on previous occurrences as a guide for potential magnitude and severity and the regional potential for destructive tornadoes, maximum extent of tornadoes for City of Newton and Newton County is an EF-3, typified by 136-165 mph rotational winds according to the Enhanced Fujita Scale.

5.12.3 Historical Occurrences

A listing of historical tornado events from 1950 to 2021 is presented in Table 5.12-2 below. Thirty-two (32) tornadoes were recorded. There were three injuries reported. Property damage is estimated at \$3,555,750 with an additional \$1,010,000 in crop damage attributed to these tornadoes.

Table 5.12–2 Tornado Events for Newton County from 1950 – 2021

LOCATION	DATE	MAGNITUDE	PROPERTY DAMAGE
NEWTON	04/15/1954	F2	\$2,500
NEWTON	04/09/1961	F2	\$25,000
NEWTON	08/24/1965	F0	\$0.00
NEWTON	04/29/1975	F0	\$0.00
CALL	01/02/1999	F1	\$20,000
CALL	01/22/1999	F0	\$25,000
NEWTON	01/29/1999	F0	\$10,000
NEWTON	03/02/1999	F1	\$50,000
BLEAKWOOD	03/02/1999	F0	\$20,000
NEWTON	03/02/1999	F3	\$250,000
BURKEVILLE	05/10/1999	F0	\$25,000
BURKEVIKKE	11/17/2003	F2	\$1,000,000
BLEAKWOOD	11/23/2004	F2	\$250,000
NEWTON	11/23/2004	F1	\$100,000
BURKEVILLE	11/23/2004	F1	\$50,000
JAMESTOWN	11/23/2004	F1	\$25,000
BURKEVILLE	11/23/2004	F1	\$250,000
WIERGATE	10/16/2006	F0	\$5,000
BLEAKWOOD	04/27/2009	EF0	\$1,000
HARTBURG	08/14/2011	EF0	\$1,000
CALL	11/08/2011	EF1	\$10,000
NEWTON	04/02/2012	EF1	\$200,000
CALL	04/24/2015	EF1	\$25,000
TROUT CREEK	04/24/2015	EF0	\$5,000
CALL	04/30/2016	EF0	\$0.00
BELGRADE	01/02/2017	EF1	\$30,000
BURKEVILLE	01/18/2017	EF1	\$50,000
FARRSVILLE	03/29/2017	EF1	\$50,000
CALL	10/31/2018	EF1	\$5,000
JAMESTOWN	04/22/2020	EF2	\$75,000
BELGRADE	12/23/2020	EF2	\$70,000
HARTBURG	10/27/2021	EF2	\$850,000

Source: NOAA NCEI Storm Events Database

Note: Zero (0) values may indicate missing data.

Listed below are narratives of selected tornado events.

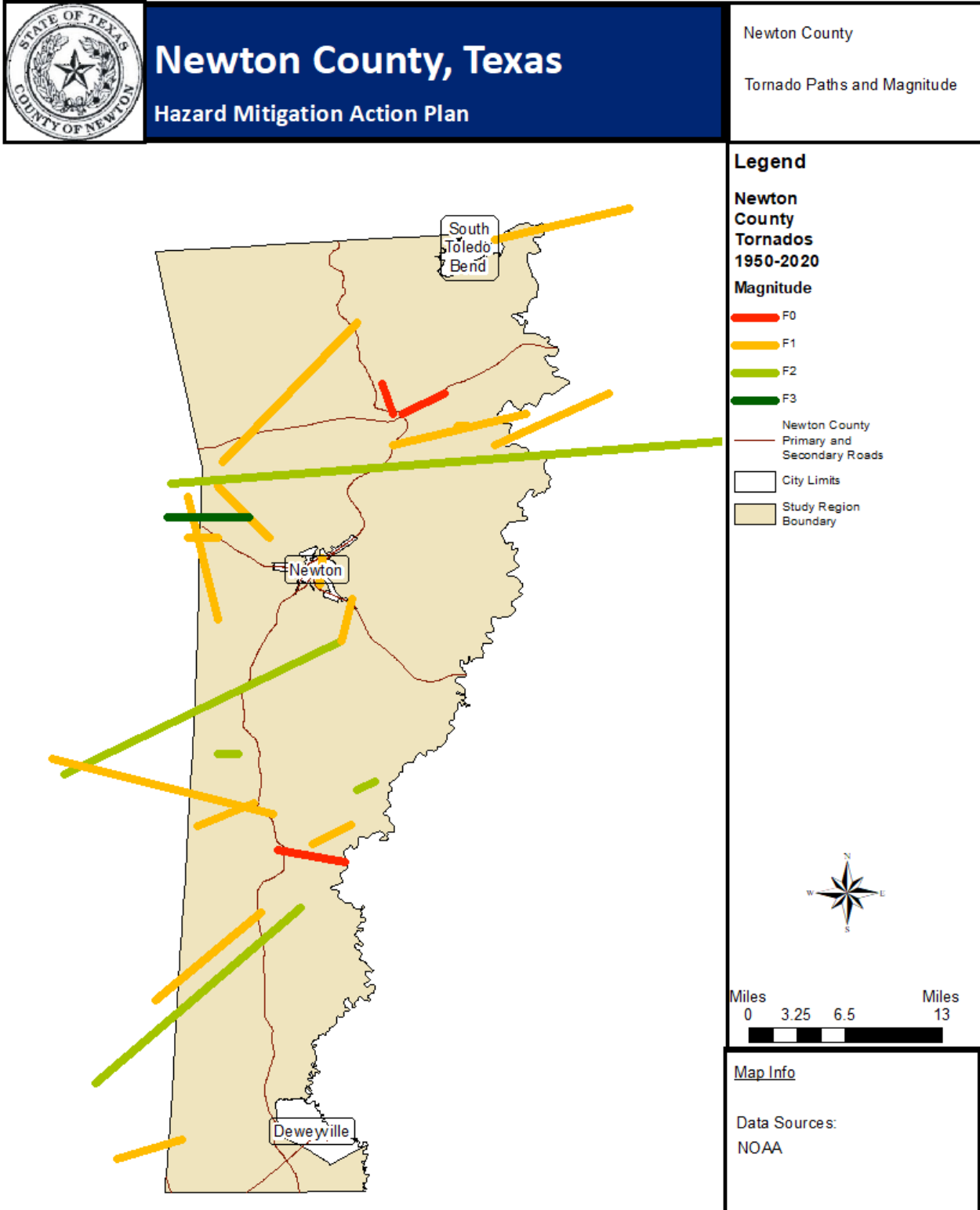
March 2, 1999 – 7 miles northwest of the City of Newton: The Holly Springs tornado moved into Newton County, tearing up the Baptist Encampment community. A mobile home was flipped over 100 feet, ejecting three people. One young girl escaped with no injuries after being thrown over 50 feet from the home. Two trucks were flipped over in their driveways and a car was moved at least 15 feet. One couple sitting on the couch in the TV watched their wood-framed home fall apart around them, and miraculously walk away.

November 17, 2003 – 13 miles northeast of Burkeville: Seven homes were destroyed, and 11 were damaged from a short-lived tornado on River Road just below the Toledo Bend Dam.

November 23, 2004 – 3 miles northwest of Bleakwood: The tornado moved across rural areas of Newton County, but the storm did destroy or damage 5 and 10 houses near the Pine Grove community. The timber industry saw a large loss of income due to trees blown down.

The County-wide map on the following page demarks the location and track of significant tornados through Newton County (Figure 5.12 – 2). Please note that some of these recorded tornados do not correspond to those presented in Table 3-17 immediately above. This may be due to varying datasets. However, the purpose of both table and map serve to illustrate that tornados do indeed pose a real hazard threat throughout Newton County.

Figure 5.12–2 Newton County Tornado Paths and Magnitudes, 1950 – 2020

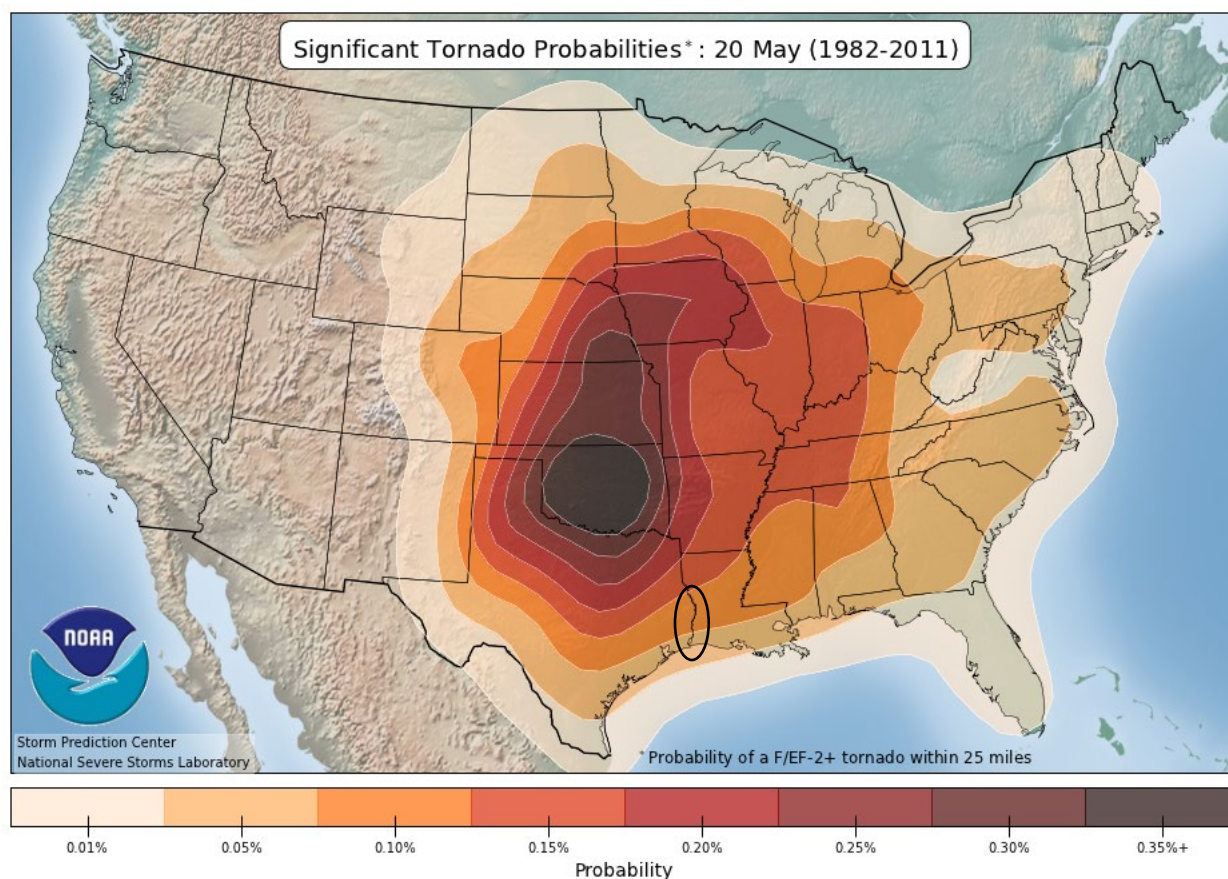


5.12.4 Probability of Future Events

As stated previously there were 32 reports of tornado events in the last 71 years in Newton County from 1950 to 2021. Therefore, there is approximately a 45-percent (45%) chance that a tornado will occur in Newton County within a given year. This corresponds to Figure 5.12–2 in the previous subsection. This frequency of previous occurrence equates to a Likely probability of future occurrence according to the definitions set forth in Section 4.4.

Figure 5.12 – 3 below depicts the probability of tornado occurrence on a given day for tornadoes EF2 or higher within a 25-mile radius of the center of the planning area. The majority of Newton County lies in the orange zone, signifying a probability of 0.10%.

Figure 5.12–3 Significant Tornado Probabilities, 1982 – 2011

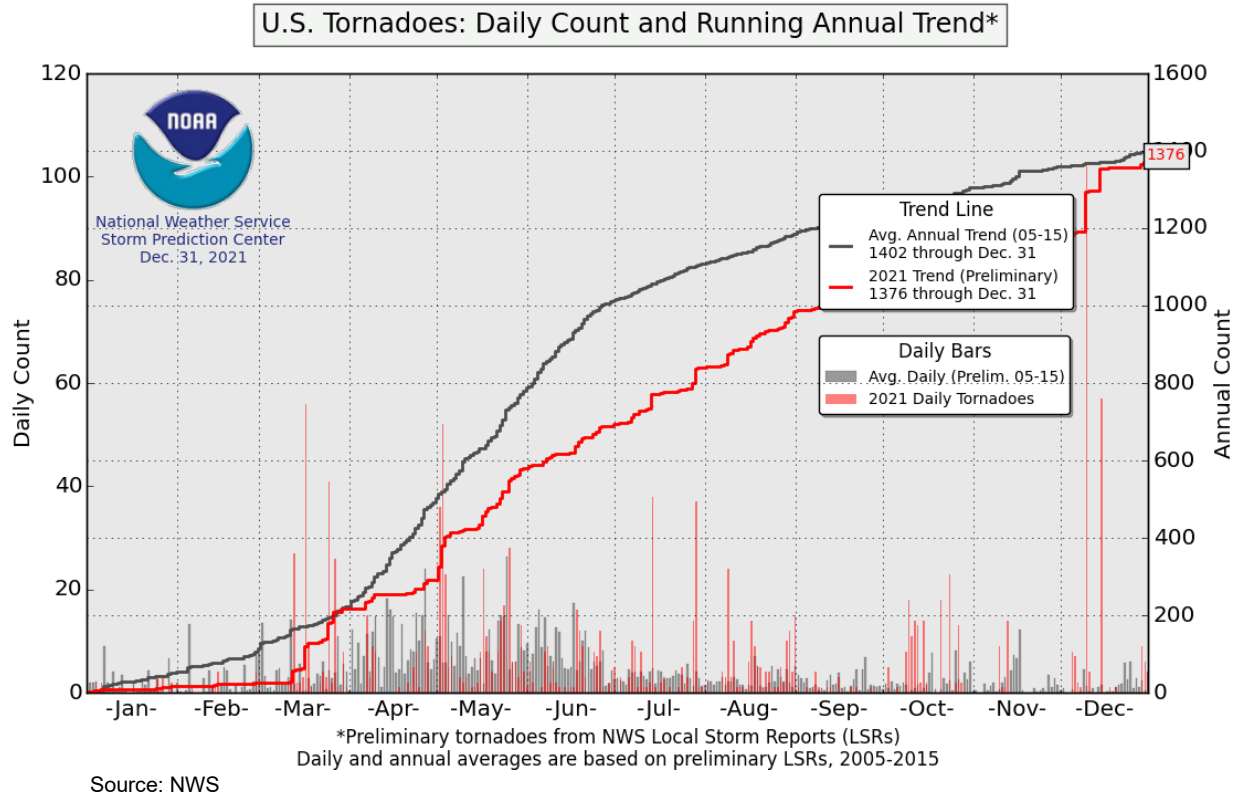


Source: Storm Prediction Center, NOAA / NWS

As shown in the NWS Storm Prediction Center's graph below, Newton County lies on the southern fringes of what is colloquially known as "Tornado Alley," a loosely defined portion of the central US where tornadoes are prevalent. Newton County lies in the orange zone, with an annual probability around 40-percent (40%).

Nationwide, probability peaks in the months of March – May as shown by the following NWS chart.

Figure 5.12–3 Daily County, US Tornado Trends



5.12.5 Vulnerability and Impact

Most structures outside the City of Newton are frame structures and are very vulnerable. Mobile homes are even less able to withstand the force of even an EF-1 tornado. As a result of the March 2016 floods, hundreds of families have moved into mobile travel trailers which do not have the ability to be anchored to the ground making them that much more vulnerable. The pine plantations of the area will remain vulnerable. Aluminum carports and porch covers are vulnerable as well.

5.13 WILDFIRE

5.13.1 Hazard Description

A wildfire is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures. Wildfires often begin unnoticed, spread quickly, and are usually signaled by dense smoke that fills the area for miles around. Wildfires are caused through human acts such as arson or careless accidents, or through natural occurrences such as lightning. Wildfire danger is exacerbated by dry weather conditions and excessive heat. Most forest fires in Texas are caused by arson and other careless acts by people.

The experience of wildfire by the public typically involves evacuation advisories (or orders) from official sources. Evacuation measures may be initially broadcast via communiques and followed by door-to-door visits by fire and law enforcement. It is important for individual residences to have an evacuation plan in place and to follow official instructions.

Wildfires can result in people losing their homes, loss of vegetation, soil damage, death of wildlife and loss of food and habitat, and air pollution. Those in the agricultural field often experience economic loss and recreational areas become restricted or inaccessible.

The urban-wildland interface (WUI) is an area in which development meets wildland vegetation. Both vegetation and the built environment provide fuel for fires. Table 5.13 – 1 below lists fire danger rating classifications as defined by the U.S. Forest Service.

Table 5.13–1 National Fire Danger Rating System

RATING	BASIC DESCRIPTION	DETAILED DESCRIPTION
LOW	Fires not easily started.	Fuels do not ignite easily from small embers, but a more intense heat source, such as lightning, may start fires in duff or dry rotten wood. Fires in open, dry grasslands may easily burn a few hours after a rain, but most wood fires will spread slowly, creeping or smoldering. Control of fires is generally easy.
MODERATE	Fires start easily and spread at a moderate rate.	Fires can start from most accidental causes, but the number of fire starts is usually low. If a fire does start in an open, dry grassland, it will burn and spread quickly on windy days. Most wood fires will spread slowly to moderately. Average fire intensity will be moderate except in heavy concentrations of fuel, which may burn hot. Fires are still not likely to become serious and are often easy to control.
HIGH	Fires start easily and spread at a rapid rate.	Fires can start easily from most causes and small fuels (such as grasses and needles) will ignite readily. Unattended campfires and brush fires are likely to escape. Fires will spread easily, with some areas of high intensity burning on slopes or concentrated fuels. Fires can become serious and difficult to control unless they are put out while they are still small.
VERY HIGH	Fires start very easily and spread at a very rapid rate.	Fires will start easily from most causes. The fires will spread rapidly and have a quick increase in intensity, right after ignition. Small fires can quickly become large fires and exhibit extreme fire intensity, such as long-distance spotting and fire whirls. These fires can be difficult to control and will often become much larger and longer-lasting fires.
EXTREME	Fire situation is explosive and can result in extensive damage.	Fires of all types start quickly and burn intensely. All fires are potentially serious and can spread very quickly with intense burning. Small fires become big fires much faster than at the "very high" level. Spot fires are probable, with long-distance spotting likely. These fires are very difficult to fight and may become very dangerous and often last for several days.

Source: USDA Forest Service

5.13.2 Location

Risk of wildfire is not confined to a particular geographic region of the County, though there is slightly higher incidence in the middle portion of the County and surrounding City of Newton.

The wildland urban interface (WUI) is generally described as an area where development meets dense forest. Figures 5.13–1 and 5.13–2 below represents the wildland urban interface for the planning area and depicts the density of structures within the interface and their respective levels of concern.

Prior maps show the City of Newton has notable Level of Concern (LOC) as defined by the Wildfire Risk Assessment Program, particularly in areas in the northern and eastern portion of the city. For the county overall, the higher LOC values are found near the communities of Burkeville, Bon Wier, Deweyville, and Trout Creek.

Figure 5.13–1 Wildland Urban Interface, Newton County

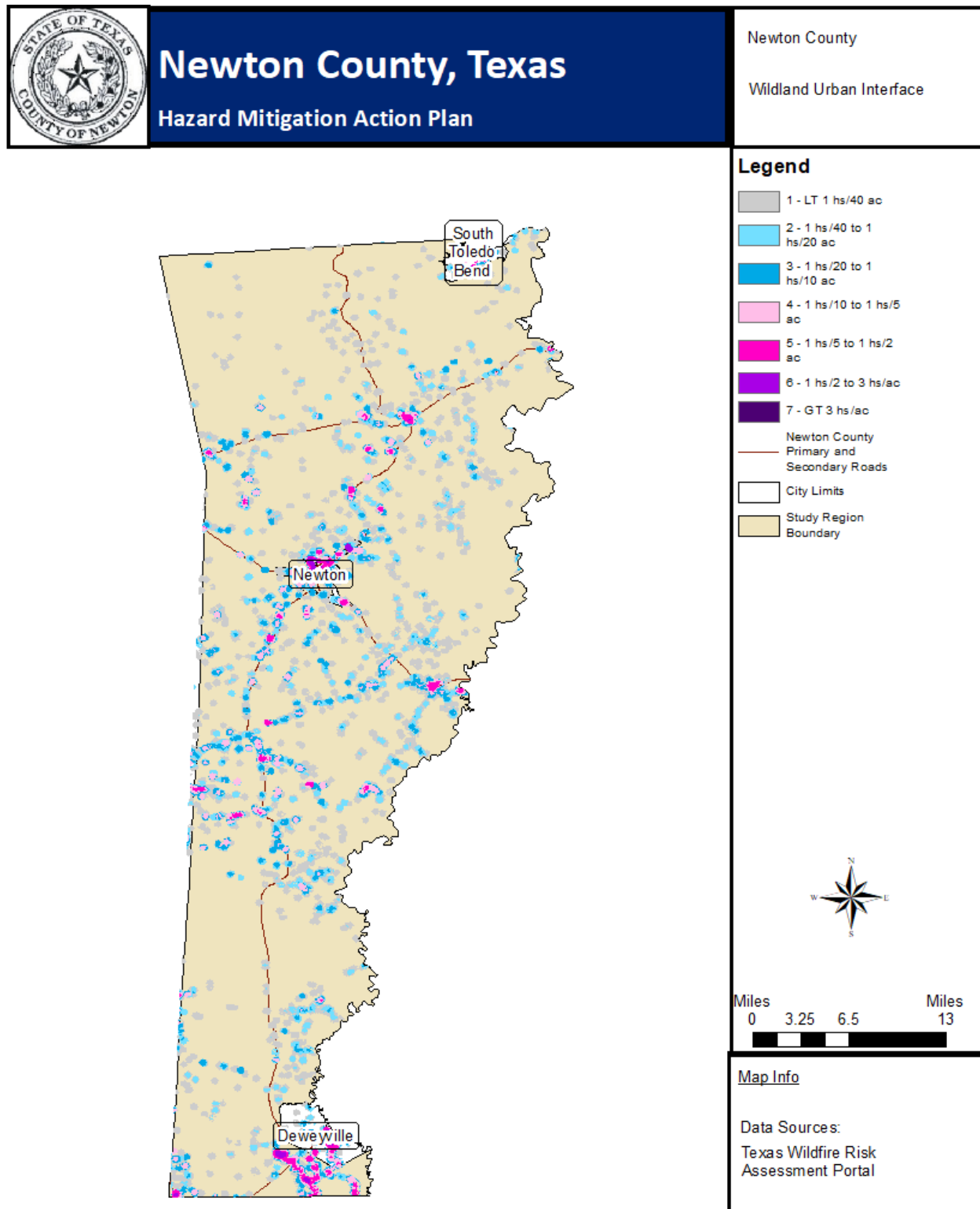


Figure 5.13–2 Wildland Urban Interface, City of Newton

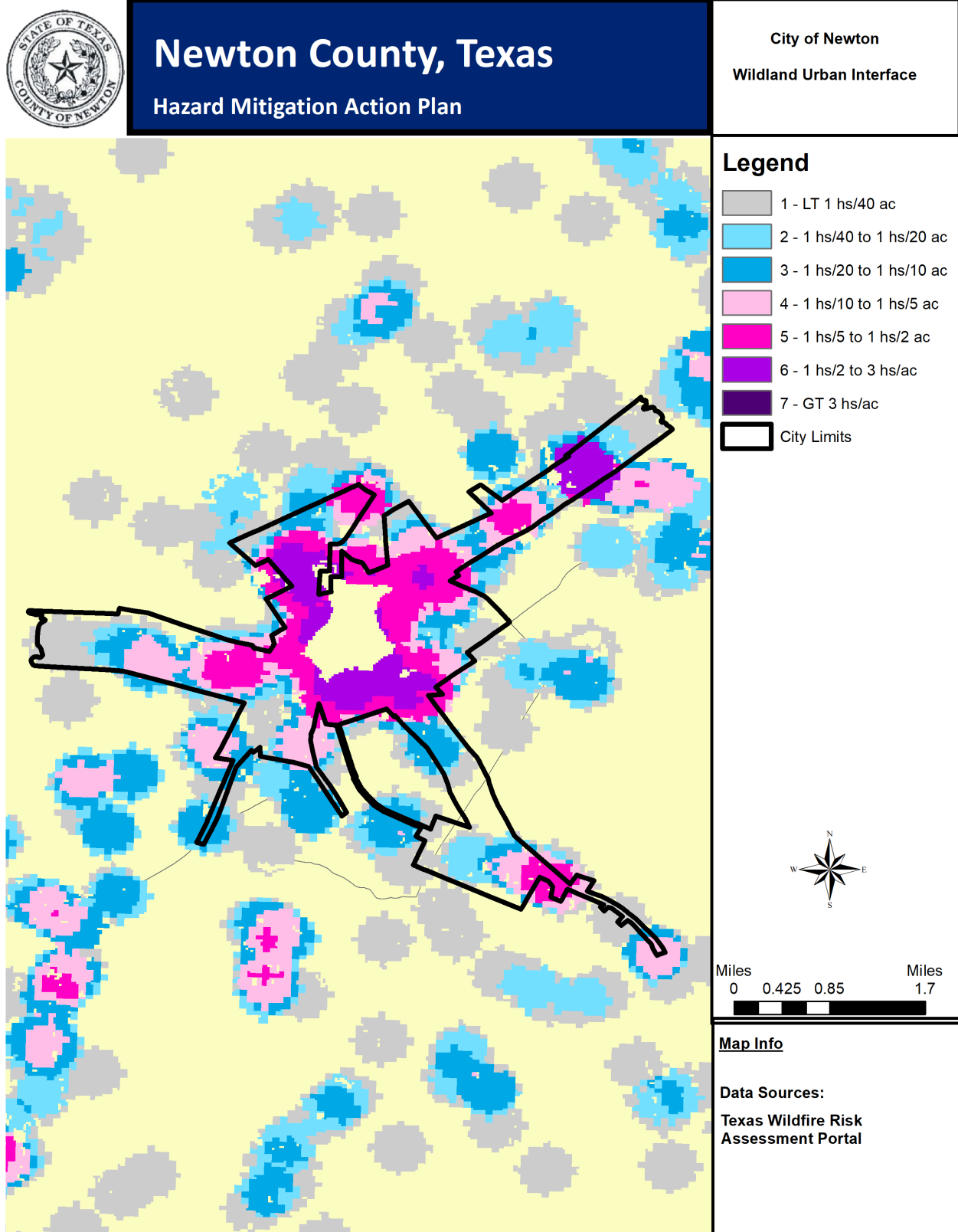
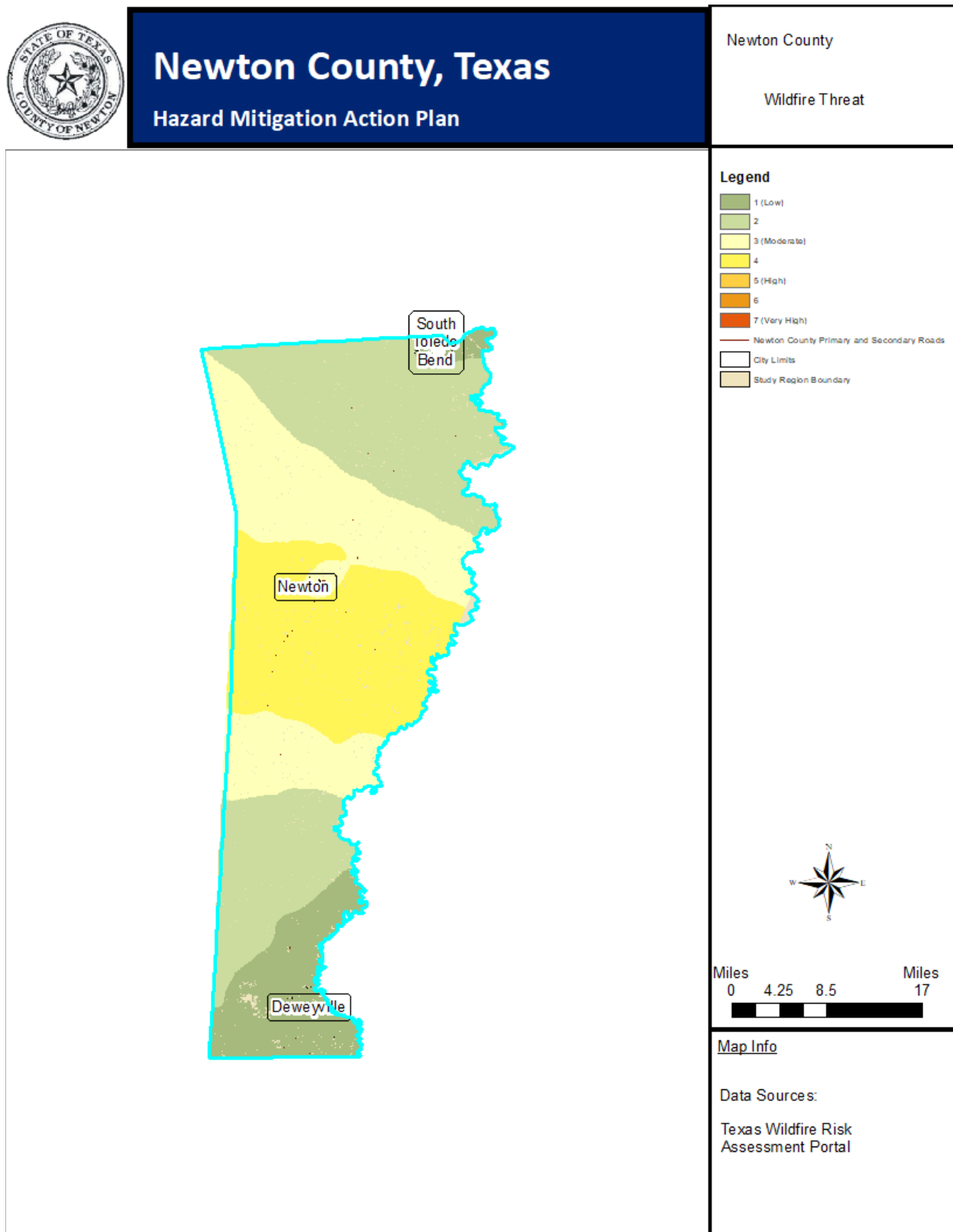


Figure 5.13–3 Wildfire Threat, Newton County



5.13.3 Extent

Texas Forest service has developed a website to assist in managing wildfire risk. One of the tools is a Wildfire Intensity Scale. By considering fuel, weather and topography, this tool evaluates the potential fire behavior of area. Figure 5.14 – 3, below, shows the predicted wildfire intensity should a fire start in the mapped area. Intensity predictions range from low to very high across the County and within the city. Intensity trends generally mirror the areas of concern found in Figures 5.13–1 and 5.13–2. The City of Newton and the communities of Burkeville, Bon Wier, Deweyville, and Trout Creek reflect the highest levels of intensity due to their residential densities.

Figure 5.13–5 depicts critical facilities throughout the planning area. It should be noted that several emergency services providers are in the highest level of the Wildfire Ignition Density Index. Also located in this susceptible region are the Newton County Group Home and Rosewood Assisted Living Center, both housing vulnerable populations.

Figure 5.13–4 Wildfire Ignition Density, Newton County

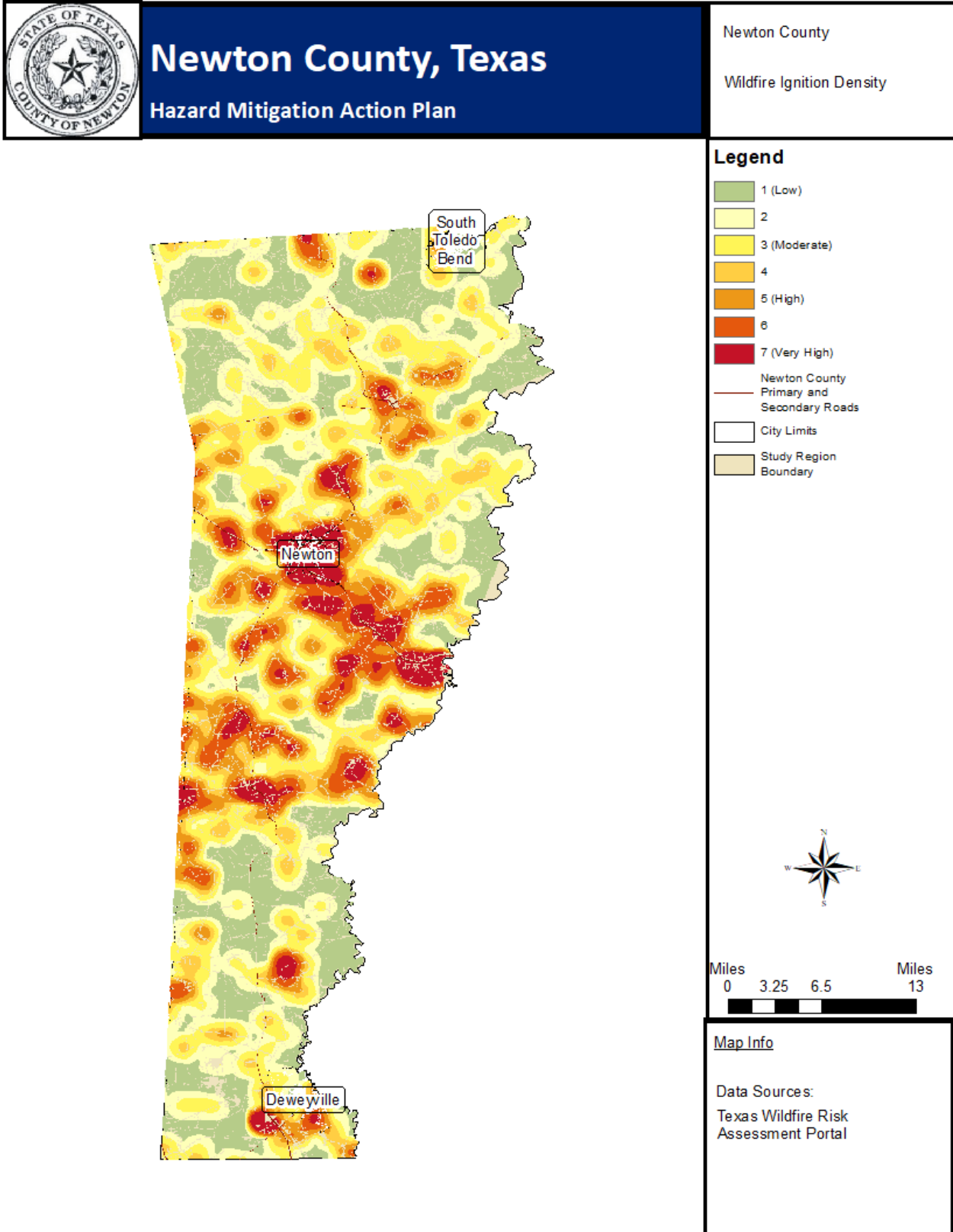
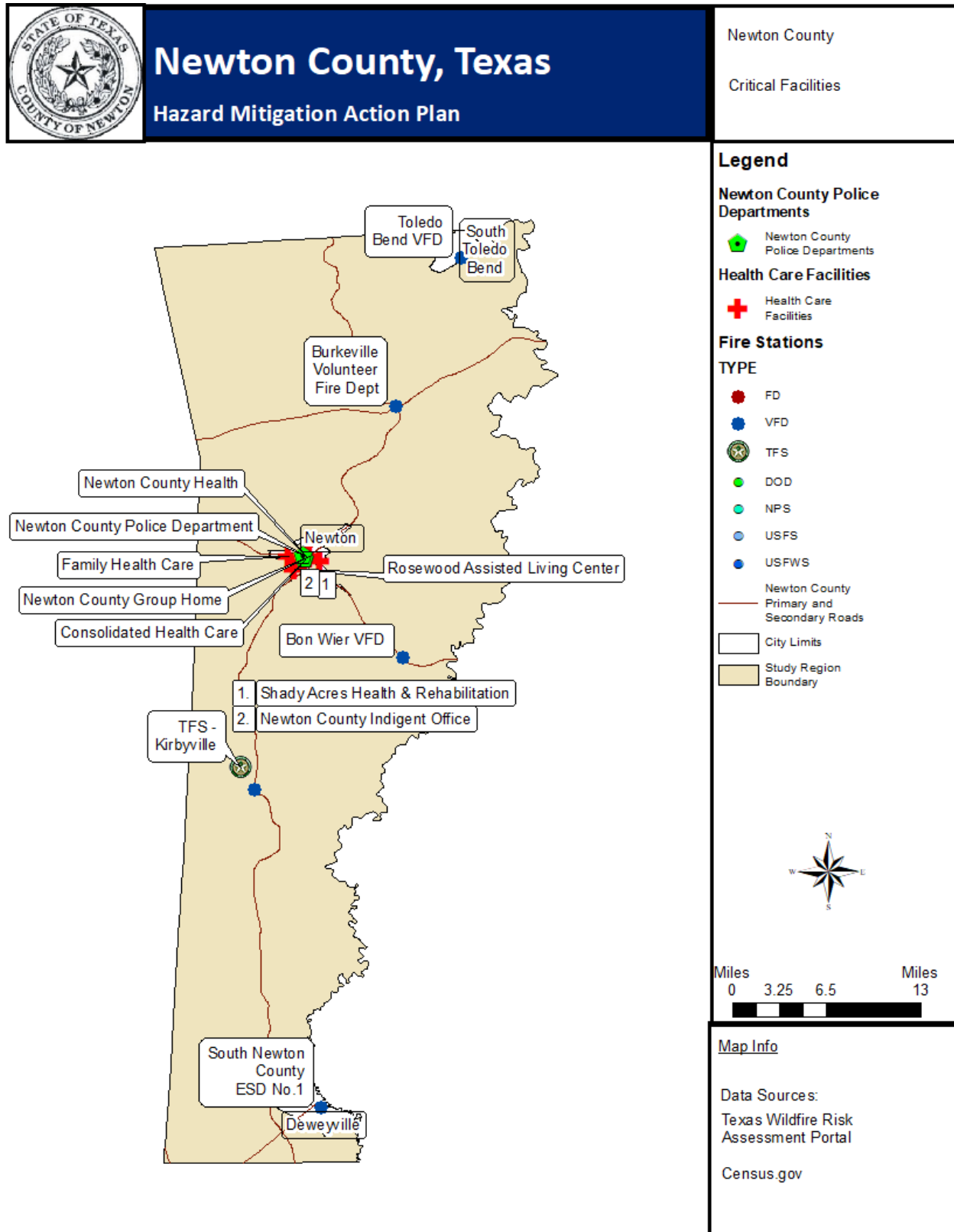
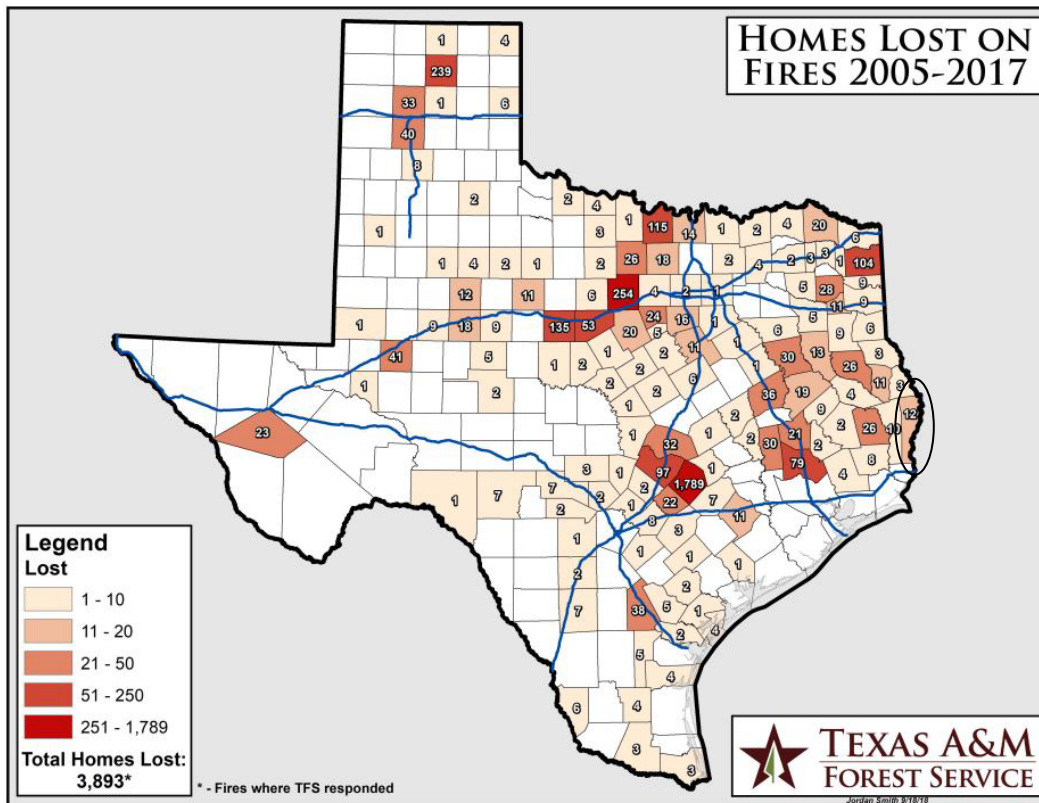


Figure 5.13–5 Critical Facilities, Newton County

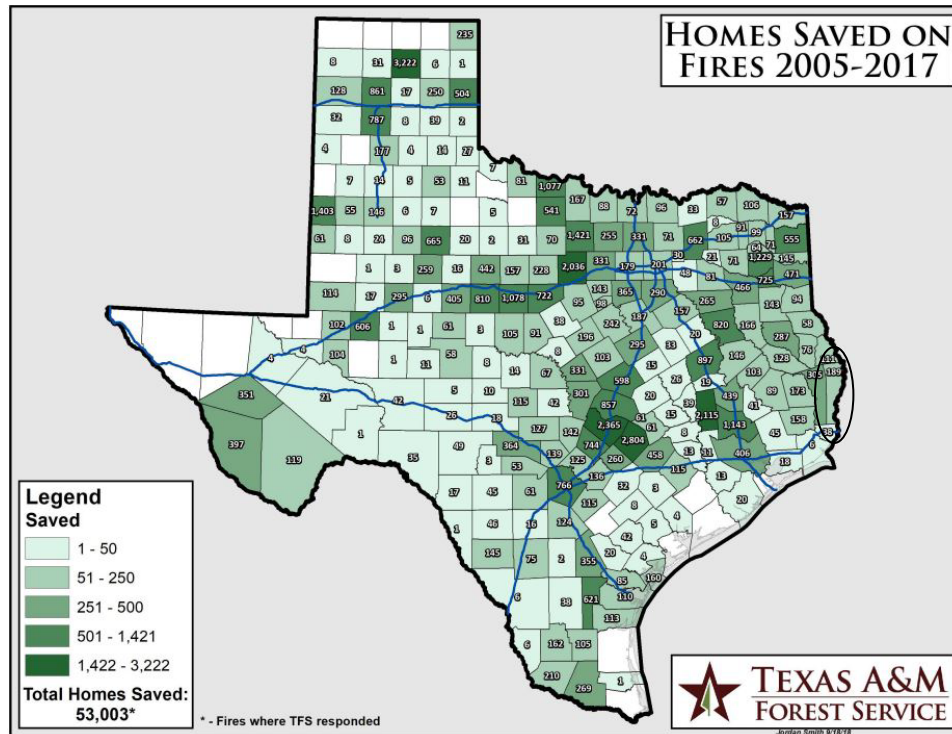


5.13.4 Historical Occurrences

According to the Texas A&M Forest Service (TFS), the county experienced two large wildfires that affected 500 – 1,000 acres between the years 2005 – 2015. The TFS map below shows homes lost on fires that TFS responded to from 2005 – 2017. Per the map, Newton County lost twelve (12) homes.



Conversely, the TFS map below shows homes saved on fires that TFS responded to from 2005 – 2017. Per the map, Newton County had 189 homes saved.



Moore Branch Fire – The most notable wildfire in Newton County in recent decades was the Moore Branch Fire of September 2000. Over a period of one week, it burned over 15,000 acres east of the City of Newton. The following pages contain a daily summary of the fire, along with daily progression maps, weather for each day, VFD list and structure lost and saved list, prepared by Olen Bean, Texas Forest Service and Newton County Emergency Management Coordinator.

The estimated value saved and lost in the Moore Branch Fire does not effectively reflect what each individual person and family suffered through this fire. Without the tremendous effort of Temple Inland, Louisiana Pacific, the County of Newton, City of Newton, Department of Public Safety, Texas Department of Transportation, Volunteer Fire Departments and local people, the loss of homes, and even possibly lives could have been much greater.

A total of 44 homes, 1 sawmill, 1 plantation and 2 churches were saved through firefighting efforts. Total value of property saved nearly equaled the value of property lost, though losses nonetheless exceeded \$6 million. Table 5.13 – 1 outlines property lost and saved during the Moore Branch Fire. The 15,864 acres burned equals 2.6 percent of the total county area.

Table 5.13–1 Property Loss and Property Saved, Moore Branch Fire-Newton County (2000)

PROPERTY LOSS	VALUE
5 HOMES	\$200,000
6 BARNs	\$50,000
14 OUTBUILDINGS	\$30,000
PLANTATION	\$5,500,000
NATURAL	\$900,000
OPEN LAND	\$10,000
TOTAL	\$6,690,000

Source: Texas A&M Forest Service (TFS)

PROPERTY SAVED	VALUE
44 HOMES	\$1,760,000
1 SAWMILL	\$1,000,000
1 PLANTATION	\$1,500,000
2 CHURCHES	\$40,000
NATURAL	\$90,000
TOTAL	\$4,390,000

Source: Texas A&M Forest Service (TFS)

5.13.5 Probability of Future Events

Over the last five years there was an average of 100 fires per year burning an average of 1,000 acres per year. The planning area can expect the same amount of fire activity over the next five years.

As mentioned previously in section 4.2, climate change is and will continue to be a long-term hazard to the state and the planning area. A rise in temperatures and a decrease in total precipitation will contribute to the overall frequency of wildfires and the severity of the individual events.

5.13.6 Vulnerability and Impact

Impacts of wildfire involve public safety/health impacts, (smoke inhalation, heat exhaustion, etc.), timber damage, structure damage, and disruption caused by evacuations. The most severe fire to impact Newton County was the Moore Branch Fire in 2000. It burned over 15,000 acres and caused over \$6 million in property damage, not including cost of firefighting. More recently, as illustrated previously in Figure 3-38, over the two-year period of 2005-2006 economic loss to wildfire events in Newton County exceeded \$981,000.

The economic impact of the forest sector is apparent in East Texas. Per the Texas A&M Forest Service's 2021 Economic Impact Analysis, the forest sector produced \$13.7 million in direct industrial output and employed 87 people with a payroll of \$5.5 million in Newton County alone.

Impacts for the City of Newton are like that of the County but are more likely to involve a fire originating in forested areas outside City limits migrating into populated areas. Smoke from wildfires and the associated health impacts are another concern, with a relatively high concentration of elderly people in the City of Newton including those in assisted living facilities. Also, a lesser extent of direct economic impacts for the City of Newton is assumed since large scale forestry is not a factor within City limits and therefore loss of timber value is not as great a concern as it is for the County.

The pine plantations within the unincorporated areas of the County will remain vulnerable to fire as well as those structures within the wildland urban interface both in the city and out in the County. Although there have been recent mitigation efforts to create defensible space around public and private structures in the planning area, there is much more to do. Based on assessments of probability, magnitude and severity, overall vulnerability to wildfire is considered High. Vulnerability for the City of Newton is highest in the periphery of City limits in the wildland urban interface. See also Section 4.6.8 (Vulnerable Structures) for additional information relating to wildfire vulnerability.

5.14 WINTER STORMS

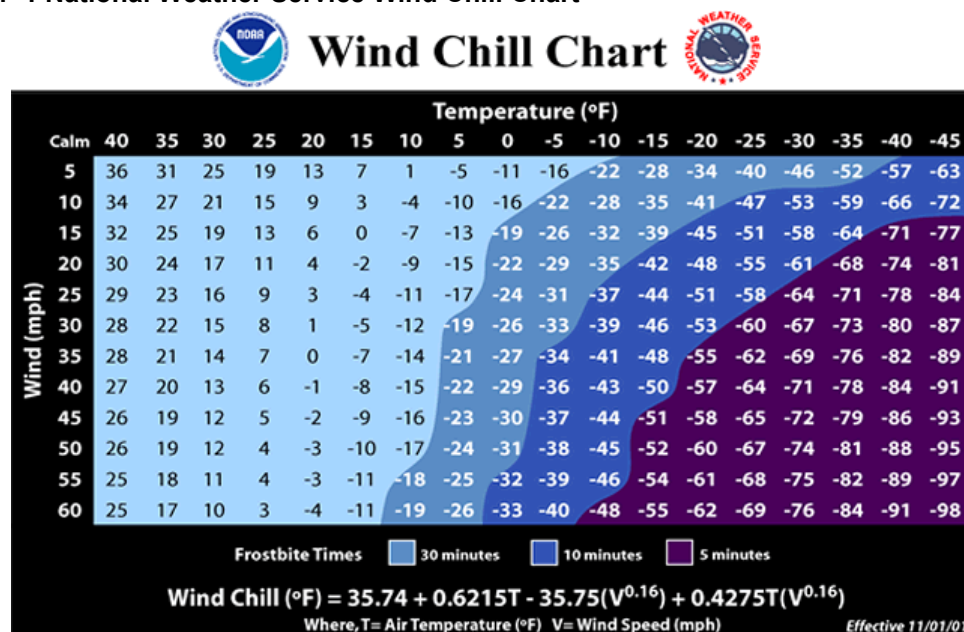
5.14.1 Hazard Description

Severe winter storms include sleet, ice storms or freezing rain, heavy snowfall, or blizzards. Blizzards are episodes of low visibility caused by high winds and blowing snow. The characteristics of severe winter storms are decided by the amount and extent of snow or ice, air temperature, wind speed, and event duration. Severe winter weather creates conditions that disrupt essential regional systems such as public utilities, telecommunications, and transportation routes.

The term “ice storm” describes occasions when damaging accumulations of ice occur during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice affect transportation routes, making walking and driving extremely dangerous. Ice accumulations of ¼" or greater are considered significant.

In 2001, the National Weather Service implemented an updated Wind Chill Temperature index. This index, shown as Figure 5.14–1 below, was developed to describe the relative discomfort/danger resulting from the combination of wind and temperature. Wind chill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature.

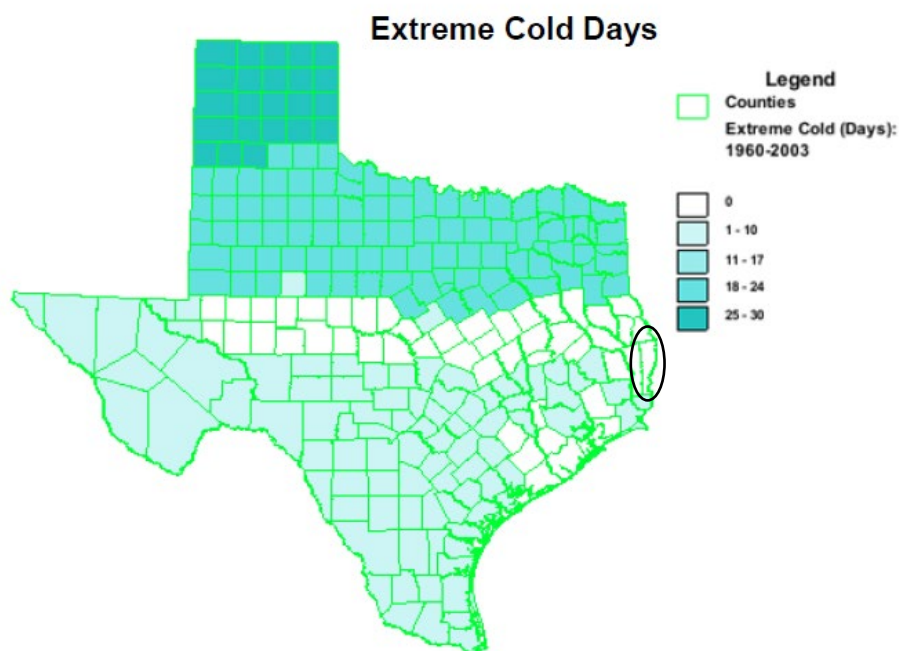
Figure 5.14–1 National Weather Service Wind Chill Chart



5.14.2 Location

Texas generally and Newton County specifically is a region of the country known for mild winter temperatures but nonetheless the entire planning area is susceptible to winter storms. The northern part of the county with its higher elevation and topographic variance has more frequent winter storm impacts than the southern county which is closer to the Gulf and sea level. The effects of winter storm are typically county-wide when they occur. Figure 5.14–2 shows days of extreme cold from 1960-2003 by Texas county.

Figure 5.14–2 Extreme Cold Days, 1960 – 2003



5.14.3 Extent

Winter events of significance generally bring with them snow accumulations from trace amounts to three inches and ice accumulations up to about one-half inch. This has been the case for the city as well as the County. Temperatures in the low teens are possible in this region but rare, with maximum extent of winter temperatures expected not to be lower than 12F in the next planning cycle.

5.14.4 Historical Occurrences

Newton County and the City of Newton have suffered the effects of winter weather in the past. Winter months in east Texas (December, January, and February) have average seasonal temperatures ranging in the low 50's. While average seasonal temperatures stay above freezing statewide, cold fronts extending from Canada through the state occur at least once during most winters. Severe winter weather in Texas typically consists of freezing temperatures and heavy precipitation, usually in the form of rain, freezing rain, or sleet, but sometimes in the form of snow.

Because severe winter weather is rare in southeastern Texas as compared to northern states where winter events are expected and local governments better equipped to handle them, occurrences tend to be very disruptive to transportation and commerce. When winter storms occur, trees, cars, roads, and other surfaces develop a coating of ice, making even small accumulations of ice extremely hazardous. The most prevalent impacts are slippery roads and walkways that lead to vehicle and pedestrian accidents; broken tree limbs from heavy ice and snow loads; and downed telephone lines and electrical wires. A severe winter storm can disrupt telecommunications and power for days.

Table 5.14–1 Winter Storm Events for Newton County from 1950 – 2021

LOCATION	DATE	EVENT TYPE	DEATHS	INJURIES	PROPERTY DAMAGE
COUNTY – WIDE	01/23/2014	Winter Storm	0	0	\$0.00
COUNTY – WIDE	01/28/2014	Winter Storm	0	0	\$0.00
COUNTY – WIDE	03/04/2014	Ice Storm	0	0	\$0.00
COUNTY – WIDE	12/07/2017	Winter Weather	0	0	\$0.00
COUNTY – WIDE	01/16/2018	Winter Weather	0	0	\$0.00
COUNTY – WIDE	02/14/2021	Winter Storm	0	0	\$0.00
COUNTY – WIDE	02/17/2021	Ice Storm	0	0	\$0.00

Source: NOAA NCEI Storm Events Database

Note: Zero (0) values may indicate missing data.

Listed below are narratives of winter storm events during the last planning cycle.

December 7–8, 2017 – Colder air plunged to the gulf coast while an upper-level disturbance provided support for precipitation. Precipitation began to change to snow across the region during the evening of the 7th and accumulate snow lingered through much of the morning of the 8th. The heavy wet snow caused some power outages in the area and area schools to close.

One to three inches of snow fell across Newton County. Schools closed during the event since some roads became icy.

January 16, 2018 – An arctic cold front passed through the area during the evening of the 15th. The cold air mass filtered in during the night and light rain transitioned over to snow as temperatures fell below freezing. Accumulations were less than an inch, however icy spots closed bridges across the area which produced travel problems. Strong north winds from a front on the 12th and again on the 16th produce low tides along the coast for 6 cycles.

A light dusting of snow over a thin glaze of ice occurred during the morning of the 16th. Area travel was interrupted, and area schools canceled classes for the day.

February 14 – 15, 2021 – The first in a series of Arctic Cold Fronts arrived during the 12th pushing tide levels down along the coast, however the subfreezing temperatures and winter weather did not arrive until the 14th. The event on the 14th began at many places as a light glaze of freezing rain, but quickly changed over to sleet or snow.

Temperatures fell through the afternoon and evening across Newton County as showers developed. Rain turned to freezing rain during the evening and then quickly over to sleet. Light snow mixed in by the end of the event. Accumulations ranged from 1 to 3 inches. Bridges and overpasses became iced and closed. Most roads were hazardous.

February 17, 2021 – The first in a series of Arctic Cold Fronts arrived during the 12th pushing tide levels down along the coast, however the subfreezing temperatures and winter weather did not arrive until the 14th. Another round of winter weather occurred on the 17th; however, this round was mainly freezing rain. Interior sections of Southeast Texas saw lows in the single digits and mid-teens were recorded at the coast during the coldest night.

Freezing rain moved into the region during the early morning of the 17th. Ice accumulations of one tenth to one quarter of an inch occurred coating the already in place sleet and snow from the event just 2 days prior. This also created more hazardous driving conditions.

5.14.5 Probability of Future Events

Based on storm events listed since 2014, the planning area has experienced winter weather on seven (7) occasions during the last eight years, though several of these events were not considered significant. These storms affected the City of Newton as well as the County. This frequency of previous occurrence equates to Occasional of future occurrence according to the definitions set forth in Section 4.4.

5.14.6 Vulnerability and Impact

The most significant vulnerability to the City of Newton and Newton County is potential for an extended power outage related to downed limbs on power lines. Above ground power lines and trees throughout the entire planning area are affected by the ice and snow causing tree branches to snap under the weight of accumulated ice and fall on power lines, houses, and vehicles.

A major winter storm made its way across the United States, Northern Mexico, and parts of Canada between February 13 – 17, 2021. Referred to as Winter Storm Uri by The Weather Channel, the storm caused an estimated \$195 billion in damages in the US alone, making it the costliest winter storm on record. The state of Texas was especially affected by the storm and sustained the bulk of the damages, with an estimated 4.5 million homes losing power. Moving forward, the reliability and resilience of the Texas power grid remains a topic of concern.

The County has a slightly higher potential for this vulnerability to winter storm due to the longer distance unincorporated residents live from electric substations.

Winter storm impact for both County and City of Newton most commonly includes broken limbs, icy roads and bridges, broken water pipes, power-outages, structure fires and carbon-monoxide poisoning related to use of alternate heating sources in confined and poorly ventilated spaces.

SECTION 6: PREVIOUS ACTIONS

6.1 SUMMARY

Planning Team members were given copies of the previous mitigation actions submitted in the 2017 Plan at the kickoff meeting. Newton County and the City of Newton, participating jurisdictions, reviewed the previous actions and provided an analysis as to whether the action had been completed, should be deferred as an ongoing activity, or be deleted from the Plan Update. The actions from the 2017 Plan are included in this section as they were written in 2017, apart from the “2022 Analysis” section.

6.2 2017 NEWTON COUNTY HMAP – NEWTON COUNTY PREVIOUS ACTIONS FOR DEFERRAL

PRIORITY	ACTION ITEM	2021 ANALYSIS
HIGH	Acquire flood prone properties.	Keep: Best risk management practice for Sabine River Authority (SRA) downstream of Toledo Bend dam.
HIGH	Inventory pipelines too shallow for safety that do not meet modern standards.	Keep:
HIGH	Road and bridge construction projects such as increasing culvert size, replacing culverts with bridges, and elevating roads that flood.	Keep: Open CDBG-Mitigation grant through Texas General Land Office (GLO) replacing culverts of the highest need
HIGH	Storm-harden/retrofit other County infrastructures and facilities to withstand higher winds and the impact of flying debris.	Keep: Pursuing grant opportunities
HIGH	Install back-up power generators for existing and future critical facilities.	Keep: Applied for HMGP grant through TDEM
MODERATE	Install dry hydrants at strategic locations in the planning area.	Keep
MODERATE	Update County policy to add the requirement to construct on-site runoff detention ponds for future County facilities.	Keep
MODERATE	Develop and distribute materials to educate the public on hazardous materials release response activities.	Keep
MODERATE	Establish an individual safe room program.	Keep
HIGH	Identify and implement necessary actions and steps to continue and expand Newton County County's participation in the NFIP and Community Rating System including but not limited to floodplain mapping, higher regulatory standards, protecting building utilities, storm water management program, drainage system maintenance, and flood warning programs.	Keep
MODERATE	Place/Improve flood protection berm (approx. 5,000 LF) along Sabine River throughout Newton County including channels, dikes, riverbanks.	Revise: Retrofit riverbank retaining structures at locations north of Hwy 12 east of Deweyville (Kirkendall); south of Hwy 12 east of Deweyville (Camp House Road); and southeast of Deweyville (River Oaks).
HIGH	Wildfire fuel reduction.	Keep: Consulting with Texas A&M Forest Service
MODERATE	Remove logjams in lower Sabine River, including tributaries and drains, east of Deweyville near Ruliff and Kansas City Southern Railroad trestle, and downstream from Indian Lake Subdivision.	Revise: Reword to include "...in lower Sabine River, including tributaries and drains, east of..."
LOW	Relocation of flood prone properties.	Keep: Pursuing grant opportunities
MODERATE	Elevate flood prone/repetitive loss homes.	Keep: Pursuing grant opportunities
LOW	Retrofit and equip locations to serve as a cooling or heating center for vulnerable populations.	Keep
LOW	Institute a defensible space program to reduce fuels surrounding homes in the urban-wildlands interface.	Keep: Consulting with Texas A&M Forest Service

6.3 2017 NEWTON COUNTY HMAP – NEWTON COUNTY PREVIOUS ACTIONS FOR DELETION

ACTION ITEM	2021 ANALYSIS
Retrofit/storm harden Deweyville VFD facility.	Delete: VFD facility underwent recent retrofit.
Retrofit Shady Acres nursing home roof, windows, and doors to withstand higher wind speeds and the impact of flying debris.	Delete: Private facility.
Educate residents about water conservation and landscape planting practices to preserve water supplies.	Delete: VFD facility underwent recent retrofit.
Public Education to decrease demand for electricity.	Delete: Electric Cooperatives have programs in place.
Install culverts on Kansas City Southern (KCS) railroad line in Ruliff area to reduce dam effect on upstream and improve floodwater conveyance.	Delete: KCS not to allow culverts.
Identify and pursue mitigation solutions for Kansas City Southern Railroad trestle south of Deweyville, to prevent accident and hazardous material spill due to deteriorating condition of structural cross members.	Delete: Private corporation.
Install frangible (breakaway) linkage systems for vulnerable sections of power lines.	Delete: Within Electric Cooperatives' purview.
Establish maintenance program to prevent trees/limbs from falling on power lines and buildings.	Delete: City of Newton Action Item #10.
Develop water rationing plan.	Delete: No perceived need.
Develop a database of County residents vulnerable to excessive heat and winter storm related problems.	Delete: Community databases exist.
Update building code and inspect to ensure standard tie-down and anchoring devices for mobile homes.	Delete: Leave to individual Communities.
Install covers/protection over all outdoor utility systems and components.	Delete: Leave to individual Communities.
Install shutters on all County facility windows.	Delete: No perceived need.
Install lightning rods and ground systems on all critical facilities.	Delete: No perceived need.

6.4 2017 NEWTON COUNTY HMAP – CITY OF NEWTON PREVIOUS ACTIONS FOR DEFERRAL

PRIORITY	ACTION ITEM	2021 ANALYSIS
MODERATE	Inventory of pipelines that are buried too shallow for safety and that do not meet modern standards.	Keep
MODERATE	Retrofit/storm harden critical facilities.	Keep: Open CDBG-Mitigation grants through Texas General Land Office (GLO) hardening critical water and sewer facilities
MODERATE	Implement necessary actions to continue, implement and expand the City of Newton's participation in the NFIP.	Keep
MODERATE	Acquire and demolish flood prone properties.	Keep: Pursuing grant opportunities
MODERATE	Wildfire fuel reduction.	Keep: Consulting with Texas A&M Forest Service
HIGH	Increase culvert size and elevate roads that flood.	Keep: Pursuing grant opportunities
HIGH	Install back-up power generators for existing and future critical facilities.	Keep: Applied for HMGP grant through TDEM
MODERATE	Public education on creating defensible space around property and building with fire resistant material.	Keep: Consulting with Texas A&M Forest Service
MODERATE	Develop and implement wildfire protection plan.	Keep: Consulting with Texas A&M Forest Service
LOW	Install flow systems and appliances in all current and future City facilities.	Keep
HIGH	Install covers/protection over all outdoor utility systems and components.	Keep
HIGH	Build community safe room.	Keep: Applied for HMGP grant through TDEM

6.5 2017 NEWTON COUNTY HMAP – CITY OF NEWTON PREVIOUS ACTIONS FOR DELETION

ACTION ITEM	2021 ANALYSIS
Storm-harden retrofit Shady Acres nursing home and provide backup generator.	Delete: Private facility.
Retrofit and equip locations serve as a cooling or heating unit.	Delete: Newton County Action Item #20.
Install lightning rods and grounding systems on all facilities.	Delete: No perceived need.
Educate residents about water conservation and landscape planting practices	Delete: Water conservation plan in place.
Install shutters on all City facility windows.	Delete: No perceived need.

SECTION 7: MITIGATION STRATEGY

44 CFR 201.6(c) Plan content. The plan must include the following:

- (4) A *mitigation strategy* that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.
 - (i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
 - (ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.
 - (iii) An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization will include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
 - (iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

The mitigation strategy creates a planning framework to reduce the impact of future hazard events. The structure of this mitigation strategy is intentionally straightforward:

- A set of agreed upon goals, and
- Feasible actions that support the goals.

This chapter begins by defining the goals established early in the planning process, outlined in Section 7.1 (Local Hazard Mitigation Goals). Section 7.2 (Action Item Identification and Prioritization) describes the process through which mitigation actions were decided upon and ranked by relative priority within the participating jurisdictions. Section 7.3 (Continued National Flood Insurance Program Participation) details the current and future commitment to participation in the NFIP. Finally, an incorporation of this plan's objectives into existing and future planning is explored in Section 7.4 (Compliance Capabilities Assessment and Integration with Planning Mechanisms).

7.1 LOCAL HAZARD MITIGATION GOALS

44 CFR 201.6(c) Plan content. The plan must include the following:

- (3) (i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

The overarching goal of the Newton County Hazard Mitigation Action Plan is to promote sound public policy designed to protect the health, safety and welfare of County residents and community assets.

The goals of the same as the previous version of this plan, which are to:

- Reduce or prevent injury and loss of life
- Reduce or prevent damage to property and material assets
- Reduce or prevent damage to natural resources

7.2 ACTION ITEM IDENTIFICATION AND PRIORITIZATION

44 CFR 201.6(c) Plan content. The plan must include the following:

- (5) (ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure...
- (iii) An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization will include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
- (iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

During the meetings and discussions conducted during the development of the plan, numerous suggestions were presented by the attendees creating an initial 'wish list' for mitigation activities. The Hazard Mitigation Committee considered this broad range of potential mitigation activities in relation to their area of interest or expertise. Action items considered included those from the previous iteration of this plan that have not yet been implemented. Other action items from the previous version of this plan were removed from consideration due to completion, absence of funding sources, or lack of viability.

The mitigation action items are reported in Sections 7.2.1 and 7.2.2. The outline for each action item includes the following information:

- Risk reduction benefit – qualitative estimate of potential benefits and liabilities
- Type of Action – Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness
- Hazards addressed – from identified hazards within the planning area
- Community Lifeline – Communications, Energy, Food, Shelter, and Water, Health and Medical, Safety and Security
- Effect on New/Existing Buildings – identify potential impacts
- Priority – High, Moderate, or Low
- Estimated cost – estimated expense to carry an action item through to completion
- Potential funding sources – Potential grant funding sources. Hazard Mitigation Grant Program (HMGP); Repetitive Flood Claims Program (RFC); Severe Repetitive Loss Program (SRL); Pre-Disaster Mitigation Program (PDM); Flood Mitigation Assistance Program (FMA); Cooperating Technical Partners Grant Program (CTP); Emergency Performance Management Grant Program (EPMG).
- Responsible department – department within the jurisdiction that has been designated as the project lead for the execution of the action item.
- Coordinating agencies – departments and agencies involved in action item implementation
- Implementation period – estimated period to complete action item
- Incorporation into existing plans – identify ordinances or plans

Cost-Effectiveness/Benefit-Cost Review

Consideration was given to each action item's expected benefits versus the estimated costs of implementation. It was agreed by the planning team and the approving authorities of all participating jurisdictions that the reduced level of risk that will be achieved by the listed action items is worth the expense of implementation.

Prioritization Process

The Committee did not elect to rank all actions on a numerical basis. Instead, added items were designated as High, Moderate, or Low priority by a show of hands. Listing within these priorities is not in a particular order.

7.2.1 Newton County New Action Items

NEWTON COUNTY – ACTION ITEM # 1

PROPOSED ACTION:	Animal Shelter – Livestock and Small Animal
BACKGROUND INFORMATION	
Jurisdiction	County-wide
RISK REDUCTION BENEFIT	Reduce risk to livestock and small animals during severe weather events
Type Of Action	Preparedness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Excessive Heat, Flooding, Hail, Hurricanes, Lightning, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security
EFFECT ON NEW/EXISTING BUILDINGS:	Potential for new building or adaptation of existing one
Priority (High, Moderate, Low):	Moderate
ESTIMATED COST:	\$50,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Emergency Management Coordinator
COORDINATING AGENCIES/PERSONNEL:	Texas A&M AgriLife Extension Agent
IMPLEMENTATION PERIOD:	Within 30 – 36 months of plan adoption
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 2

Proposed Action:	Evacuation Route
BACKGROUND INFORMATION	
Jurisdiction	County-wide
Risk Reduction Benefit	Reduce risk residents through improved evacuation alternatives and awareness efforts.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flood, Hurricane, Wildfire
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	State and Federal Grants, Local Funds (staff time)
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	TDEM Region 2, District 14 Coordinator
Implementation Period:	Within 12 months of plan adoption
Incorporation Into Existing Plans:	Emergency Operations Plan
COMMENTS: Develop alternative evacuation routes/plans and designate emergency thoroughfares, particularly in areas with limited capacity. Educate citizens on evacuation routes and procedures. Bottlenecking occurs on US 87 when access is down to two (2) lanes	

NEWTON COUNTY – ACTION ITEM # 3

Proposed Action:	Portable Emergency Information Platforms
BACKGROUND INFORMATION	
Jurisdiction	County-wide
RISK REDUCTION BENEFIT	Promote hazard awareness and protect citizens from potential injuries and damages
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Drought, Excessive Heat, Flooding, Hail, High Winds, Hazardous Materials, Hurricanes, Lightning, Pandemic, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High
ESTIMATED COST:	\$50,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Emergency Management Coordinator
COORDINATING AGENCIES/PERSONNEL:	City of Newton City Administrator
IMPLEMENTATION PERIOD:	Within 12 – 18 months of plan implementation
INCORPORATION INTO EXISTING PLANS:	Emergency Operations Plan
COMMENTS: Purchase barricades, electronic message boards, and portable stop signs.	

NEWTON COUNTY – ACTION ITEM # 4

Proposed Action:	Airport Expansion
BACKGROUND INFORMATION	
Jurisdiction	County-wide
Risk Reduction Benefit	Facilitate ingress/egress during emergency events.
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flooding, Hurricanes, Pandemic, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High
ESTIMATED COST:	\$1,000,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton Municipal Airport Manager
COORDINATING AGENCIES/PERSONNEL:	Newton County Emergency Management Coordinator
IMPLEMENTATION PERIOD:	Within 24 – 30 months of plan implementation
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS: Expand runway to allow cargo planes to land and construct storage facility for supplies. Improve CR 1011 from Hwy. 87 to widen and increase gross weight (½ of road is County and ½ of Road is City).	

NEWTON COUNTY – ACTION ITEM # 5

Proposed Action:	Purchase High Water Vehicles
BACKGROUND INFORMATION	
Jurisdiction	County-wide
Risk Reduction Benefit	Facilitate ingress/egress during emergency events.
Type Of Action	Preparedness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flood, Hurricane
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$500,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	Newton County Commissioners Court
Implementation Period:	Within 12 – 24 months of plan adoption
Incorporation Into Existing Plans:	N/A
COMMENTS: Ensure vehicles are equipped with lift gates and ladders	

NEWTON COUNTY – ACTION ITEM # 6

Proposed Action:	Network Switches
BACKGROUND INFORMATION	
Jurisdiction	County-wide
RISK REDUCTION BENEFIT	Protect sensitive data from potential security breaches
TYPE OF ACTION	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Cyber Attack
COMMUNITY LIFELINE:	Safety and Security; Communications
EFFECT ON NEW/EXISTING BUILDINGS:	N/A
Priority (High, Moderate, Low):	High
ESTIMATED COST:	\$25,000
Potential Funding Sources:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Information Technology (IT) Assistant
COORDINATING AGENCIES/PERSONNEL:	N/A
IMPLEMENTATION PERIOD:	Within 12 months of plan implementation
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 7

Proposed Action:	Storm Warning from one end of Sabine to the other
BACKGROUND INFORMATION	
Jurisdiction	County-wide
Risk Reduction Benefit	Reduce risk to citizens through early warning.
Type Of Action	Education and Awareness; Communications

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flood, Hurricane
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	Reduce risk to existing structures and infrastructure
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$500,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	SRA Middle Basin Regional Manager
Implementation Period:	Within 24 – 36 months of plan adoption
Incorporation Into Existing Plans:	N/A
COMMENTS: Pursue partnering with SRA on funding opportunities	

NEWTON COUNTY – ACTION ITEM # 8

PROPOSED ACTION:	Pandemic Readiness
BACKGROUND INFORMATION	
Jurisdiction	County-wide
Risk Reduction Benefit	Reduce risk of injuries or fatalities to vulnerable populations.
Type Of Action	Preparedness; Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Pandemic Readiness
Community Lifeline:	Safety and Security
EFFECT ON NEW/EXISTING BUILDINGS:	Potential for new building or adaptation of existing one
Priority (High, Moderate, Low):	High
ESTIMATED COST:	\$100,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Commissioners Court
COORDINATING AGENCIES/PERSONNEL:	Newton County Emergency Management Coordinator
IMPLEMENTATION PERIOD:	Within 24 months of plan adoption
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS: Facility equipped for drive-thru testing and vaccinations and storage for supplies.	

NEWTON COUNTY – ACTION ITEM # 9

PROPOSED ACTION:	Wi-Fi Service at Critical Facilities
BACKGROUND INFORMATION	
Jurisdiction	County-wide
RISK REDUCTION BENEFIT	Have ability to back-up servers and reduce risk of loss of sensitive data
Type Of Action	Preparedness
MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Cyber Attack
COMMUNITY LIFELINE:	Communications
EFFECT ON NEW/EXISTING BUILDINGS:	Reduce risk to existing structures and infrastructure
Priority (High, Moderate, Low):	Moderate
ESTIMATED COST:	\$25,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Emergency Management Coordinator
COORDINATING AGENCIES/PERSONNEL:	DETCOG Information Technology (IT) Department
IMPLEMENTATION PERIOD:	Within 30 months of plan adoption
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 10

Proposed Action:	Outreach & Education on property ownership to assist homeowners in cleaning up clouded deed issues.
BACKGROUND INFORMATION	
Jurisdiction	County-wide
RISK REDUCTION BENEFIT	Reduce risk to vulnerable populations during and after severe weather events
TYPE OF ACTION	Preparedness; Education and Awareness
MITIGATION ACTION DETAILS	
HAZARD(S) ADDRESSED:	Dam Failure, Flood, Hurricane, Lightning, Tornado
COMMUNITY LIFELINE:	Safety and Security
EFFECT ON NEW/EXISTING BUILDINGS:	N/A
Priority (High, Moderate, Low):	Low
ESTIMATED COST:	\$500
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds (staff time)
RESPONSIBLE DEPARTMENT:	Newton County Clerk
COORDINATING AGENCIES/PERSONNEL:	City of Newton City Secretary
IMPLEMENTATION PERIOD:	Outreach campaign on an annual basis
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 11

Proposed Action:	Storm-harden Civic Center windows
BACKGROUND INFORMATION	
Jurisdiction	County-wide
Risk Reduction Benefit	Reduce damages at critical facilities; Ensure continuity of critical services during and after event; Reduce risk of injury to emergency and critical personnel.
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Hail, High Winds, Hurricane, Tornado
COMMUNITY LIFELINE:	Safety and Security
EFFECT ON NEW/EXISTING BUILDINGS:	Reduce risk to existing structures and infrastructure.
Priority (High, Moderate, Low):	High – Moderate
ESTIMATED COST:	\$50,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Public Works
COORDINATING AGENCIES/PERSONNEL:	N/A
IMPLEMENTATION PERIOD:	Within 24 – 30 months of plan adoption
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 12

Proposed Action:	Purchase satellite phones and portable radios.
BACKGROUND INFORMATION	
Jurisdiction	County-wide
Risk Reduction Benefit	Protect citizens during disaster events.
Type Of Action	Preparedness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Excessive Heat, Flood, Hail, High Winds, Hurricane, Lightning, Pandemic, Tornado, Wildfire, Winter Storm
Community Lifeline:	Communications
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	Newton County Commissioners Court
Implementation Period:	Within 12 months of plan adoption
Incorporation Into Existing Plans:	Emergency Operations Plan
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 13

Proposed Action:	Connect all rural water systems together
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BACKGROUND INFORMATION

Jurisdiction	County-wide
RISK REDUCTION BENEFIT	Ensure continuity of services during severe weather events; Reduce risk to vulnerable populations
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Drought, Flood, Hurricane, Tornado, Wildfire, Winter Storm
COMMUNITY LIFELINE:	Safety and Security; Food, Water, Shelter
EFFECT ON NEW/EXISTING BUILDINGS:	Reduce risk to existing structures and infrastructure
Priority (High, Moderate, Low):	High
ESTIMATED COST:	\$100,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Public Works
COORDINATING AGENCIES/PERSONNEL:	Water Supply Corporation Managers
IMPLEMENTATION PERIOD:	Within 18 – 24 months of plan adoption
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 14

Proposed Action:	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages.
-------------------------	--

BACKGROUND INFORMATION

Jurisdiction	County-wide
Risk Reduction Benefit	Promote hazard awareness and protect citizens from potential injuries and damages.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Cyber Attack, Dam Failure, Drought, Excessive Heat, Flood, Hazardous Materials, Hurricane, Hail, High Winds, Lightning, Pandemic, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security; Communications
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$500
Potential Funding Sources:	State and Federal Grants, Local Funds (staff time)
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	City of Newton City Administrator
Implementation Period:	Outreach campaign on an annual basis
Incorporation Into Existing Plans:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 15

Proposed Action:	Acquire and install generators with hard wired quick connections at all critical facilities.
-------------------------	--

BACKGROUND INFORMATION

Jurisdiction	County-wide
Risk Reduction Benefit	Provide power for critical facilities during power outages and ensure continuity of critical services.
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Drought, Excessive Heat, Flood, Hurricane, Hail, High Winds, Lightning, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security; Communications; Health and Medical
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	City of Newton Public Works Director, Mauriceville MUD Manager, Health Department Director
Implementation Period:	Within 12 – 24 months of plan adoption
Incorporation Into Existing Plans:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 16

Proposed Action:	Create a comprehensive map with identified hazards and potential alert zones.
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BACKGROUND INFORMATION

Jurisdiction	County-wide
Risk Reduction Benefit	Improve risk assessment; Reduce risk to citizens through education and awareness.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flood, Hurricane, Wildfire
Community Lifeline:	Safety and Security; Communications
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	Moderate – Low
Estimated Cost:	\$50,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Emergency Management Coordinator, Newton County Floodplain Administrator
Coordinating Agencies/Personnel:	SRA Middle Basin Regional Manager, NWS Hydrologists, City of Newton Public Works Director
Implementation Period:	Within 24 – 36 months of plan adoption
Incorporation Into Existing Plans:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 17

Proposed Action:	Upgrade alert systems and notification to the public at low water crossings.
-------------------------	--

BACKGROUND INFORMATION

Jurisdiction	County-wide
Risk Reduction Benefit	Reduce risk to citizens.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flood, Hurricane
Community Lifeline:	Safety and Security; Communications
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	Moderate – Low
Estimated Cost:	\$50,000 per crossing
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Emergency Management Coordinator, Newton County Floodplain Administrator
Coordinating Agencies/Personnel:	City of Newton Public Works Director, VFD Chiefs
Implementation Period:	Within 24 months of plan adoption
Incorporation Into Existing Plans:	N/A

COMMENTS:**NEWTON COUNTY – ACTION ITEM # 18**

Proposed Action:	Improve current programs for clearing debris from drains, culverts, and ponds by purchasing new equipment.
-------------------------	--

BACKGROUND INFORMATION

Jurisdiction	County-wide
Risk Reduction Benefit	N/A: Equipment purchase
Type Of Action	Preparedness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flood, Hurricane, Tornado
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High – Moderate
Estimated Cost:	\$1,500,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Public Works
Coordinating Agencies/Personnel:	Newton County Emergency Management Coordinator
Implementation Period:	Within 24 months of plan adoption
Incorporation Into Existing Plans:	N/A

COMMENTS:

NEWTON COUNTY – ACTION ITEM # 19

Proposed Action:	Reduce urbanized flooding conditions by creating channels and upgrading pump stations to remove standing water.
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BACKGROUND INFORMATION

Jurisdiction	County-wide
Risk Reduction Benefit	Reduce flood risk through improved drainage capacity; Reduce risk of damages and injuries; Reduce emergency response demands.
Type Of Action	Preparedness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Dam Failure, Flood, Hurricane
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	Reduce risk to new and existing structures and infrastructure
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$1,000,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Public Works
Coordinating Agencies/Personnel:	Newton County Emergency Management Coordinator
Implementation Period:	Within 36 – 48 months of plan adoption
Incorporation Into Existing Plans:	Newton County Flood Damage Prevention Order
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 20

Proposed Action:	Heating Centers: Activate area shelters to endure that the vulnerable population do not freeze or remain in cold homes.
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BACKGROUND INFORMATION

Jurisdiction	County-wide
Risk Reduction Benefit	Protect lives of citizens.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Winter Storm
Community Lifeline:	Safety and Security; Food, Water, Shelter; Health and Medical
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	Moderate – Low
Estimated Cost:	\$2,500
Potential Funding Sources:	N/A
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	City of Newton City Administrator
Implementation Period:	Within 12 – 18 months of plan adoption
Incorporation Into Existing Plans:	N/A
COMMENTS:	

NEWTON COUNTY – ACTION ITEM # 21

Proposed Action:	Install adequate surge protection for major electrical equipment in new and existing public buildings.
-------------------------	--

BACKGROUND INFORMATION

Jurisdiction	County-wide
Risk Reduction Benefit	Reduce damages at public facilities; Ensure continuity of critical services during and after event; Reduce risk of injuries.
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Lightning
Community Lifeline:	Energy
Effect On New/Existing Buildings:	Reduce risk to new and existing structures.
Priority (High, Moderate, Low):	Moderate – Low
ESTIMATED COST:	\$1,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Emergency Management Coordinator
COORDINATING AGENCIES/PERSONNEL:	N/A
IMPLEMENTATION PERIOD:	Within 12 – 24 months of plan adoption
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS:	

7.2.2 City of Newton New Action Items

CITY OF NEWTON – ACTION ITEM # 1

Proposed Action:	Demolition of structures in localized flood areas
BACKGROUND INFORMATION	
Jurisdiction	City-wide
Risk Reduction Benefit	Eliminate risk of flood damages to structures and prevent future losses in high-risk flood areas; Reduce downstream impacts associated with development in the floodplain; Reduce risk of injuries to citizens; Reduce burden on emergency services during and after a flood event.
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Hurricane
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	Reduce risk to existing structures and infrastructure
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$250,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	City of Newton City Administrator
Coordinating Agencies/Personnel:	Newton County Floodplain Administrator, Newton County Emergency Management Coordinator
Implementation Period:	Within 24 months of plan adoption
Incorporation Into Existing Plans:	Flood Damage Prevention Order
COMMENTS: Focus on abandoned buildings; pursue funding to condemn and demo.	

CITY OF NEWTON – ACTION ITEM # 2

PROPOSED ACTION:	Underground power lines
BACKGROUND INFORMATION	
Jurisdiction	City-wide
Risk Reduction Benefit	Reduce damages to infrastructure during and after severe weather events; Ensure continuity of services; Reduce risk of injuries to citizens.
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Hail, High Winds, Hurricane, Lightning, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security; Communications
Effect On New/Existing Buildings:	Reduce risk to existing structures and infrastructure
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$1,000,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	City of Newton Public Works Director
Coordinating Agencies/Personnel:	N/A
Implementation Period:	Within 30 – 36 months of plan adoption
Incorporation Into Existing Plans:	N/A
COMMENTS:	

CITY OF NEWTON – ACTION ITEM # 3

Proposed Action:	Implement & Strengthen Building Code
BACKGROUND INFORMATION	
Jurisdiction	City-wide
Risk Reduction Benefit	Reduce risk of damages to structures through improved building requirements; Protect lives.
Type Of Action	Local Plans and Regulations

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Hail, High Winds, Hurricane, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security; Food, Water, Shelter
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,500
Potential Funding Sources:	State and Federal Grants, Local Funds (staff time)
Responsible Department:	City of Newton City Council
Coordinating Agencies/Personnel:	Newton County Floodplain Administrator
Implementation Period:	Within 24 months of plan adoption
Incorporation Into Existing Plans:	N/A

COMMENTS:**CITY OF NEWTON – ACTION ITEM # 4**

Proposed Action:	Road and bridge construction projects such as increasing culvert size, replacing culverts with bridges and elevate roads that flood
BACKGROUND INFORMATION	
Jurisdiction	City-wide
Risk Reduction Benefit	Reduce risk of injuries, fatalities, and damages during severe weather events
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Hurricane, Winter Storm
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	Reduce risk to new and existing structures
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	City of Newton Public Works Director
Coordinating Agencies/Personnel:	N/A
Implementation Period:	Within 24 – 36 months of plan adoption
Incorporation Into Existing Plans:	N/A

COMMENTS:

CITY OF NEWTON – ACTION ITEM # 5

Proposed Action:	Evacuation Route – 87 access down to two (2) lanes causes bottlenecking
BACKGROUND INFORMATION	
Jurisdiction	City-wide
Risk Reduction Benefit	Reduce risk residents through improved evacuation alternatives and awareness efforts.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Hurricane, Wildfire
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	State and Federal Grants, Local Funds (staff time)
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	TDEM Region 2, District 14 Coordinator
Implementation Period:	Within 12 months of plan adoption
Incorporation Into Existing Plans:	N/A

COMMENTS: Develop alternative evacuation routes/plans and designate emergency thoroughfares, particularly in areas with limited capacity. Educate citizens on evacuation routes and procedures.

CITY OF NEWTON – ACTION ITEM # 6

PROPOSED ACTION:	Portable Emergency Information Platforms
BACKGROUND INFORMATION	
JURISDICTION	County-wide
RISK REDUCTION BENEFIT	Promote hazard awareness and protect citizens from potential injuries and damages
TYPE OF ACTION	Education and Awareness

MITIGATION ACTION DETAILS

HAZARD(S) ADDRESSED:	Drought, Excessive Heat, Flooding, Hail, High Winds, Hazardous Materials, Hurricanes, Lightning, Pandemic, Tornado, Wildfire, Winter Storm
COMMUNITY LIFELINE:	Safety and Security
EFFECT ON NEW/EXISTING BUILDINGS:	N/A
PRIORITY (HIGH, MODERATE, LOW):	High
ESTIMATED COST:	\$50,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	Newton County Emergency Management Office
COORDINATING AGENCIES/PERSONNEL:	City of Newton City Administrator
IMPLEMENTATION PERIOD:	Within 12 – 18 months of plan implementation
Incorporation Into Existing Plans:	Emergency Operations Plan

COMMENTS: Purchase barricades, electronic message boards, and portable stop signs.

CITY OF NEWTON – ACTION ITEM # 7

PROPOSED ACTION:	Network Switches
BACKGROUND INFORMATION	
JURISDICTION	City-wide
RISK REDUCTION BENEFIT	Protect sensitive data from potential security breaches
TYPE OF ACTION	Structure and Infrastructure

MITIGATION ACTION DETAILS

HAZARD(S) ADDRESSED:	Cyber Attack
COMMUNITY LIFELINE:	Safety and Security; Communications
EFFECT ON NEW/EXISTING BUILDINGS:	N/A
Priority (High, Moderate, Low):	High
ESTIMATED COST:	\$10,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	City of Newton Information Technology (IT) Assistant
COORDINATING AGENCIES/PERSONNEL:	N/A
IMPLEMENTATION PERIOD:	Within 12 months of plan implementation
INCORPORATION INTO EXISTING PLANS:	N/A
COMMENTS:	

CITY OF NEWTON – ACTION ITEM # 8

PROPOSED ACTION:	Pandemic Readiness
BACKGROUND INFORMATION	
JURISDICTION	City-wide
RISK REDUCTION BENEFIT	Reduce risk of injuries or fatalities to vulnerable populations.
TYPE OF ACTION	Preparedness; Education and Awareness

MITIGATION ACTION DETAILS

HAZARD(S) ADDRESSED:	Pandemic
COMMUNITY LIFELINE:	Safety and Security
EFFECT ON NEW/EXISTING BUILDINGS:	Potential for new building or adaptation of existing one
Priority (High, Moderate, Low):	High
ESTIMATED COST:	\$100,000
POTENTIAL FUNDING SOURCES:	State and Federal Grants, Local Funds
RESPONSIBLE DEPARTMENT:	City of Newton City Council
COORDINATING AGENCIES/PERSONNEL:	Newton County Emergency Management Coordinator
IMPLEMENTATION PERIOD:	Within 24 months of plan adoption
INCORPORATION INTO EXISTING PLANS:	Emergency Operations Plan
COMMENTS: FACILITY EQUIPPED FOR DRIVE-THRU TESTING AND VACCINATIONS AND STORAGE FOR SUPPLIES.	

CITY OF NEWTON – ACTION ITEM # 9

Proposed Action:	Purchase satellite phones and portable radios.
BACKGROUND INFORMATION	
Jurisdiction	City-wide
Risk Reduction Benefit	Protect citizens during disaster events.
Type Of Action	Preparedness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Excessive Heat, Flood, Hail, High Winds, Hurricane, Lightning, Pandemic, Tornado, Wildfire, Winter Storm
Community Lifeline:	Communications
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	Newton County Emergency Management Coordinator
Coordinating Agencies/Personnel:	City of Newton City Council
Implementation Period:	Within 12 months of plan adoption
Incorporation Into Existing Plans:	Emergency Operations Plan
COMMENTS:	

CITY OF NEWTON – ACTION ITEM # 10

Proposed Action:	Adopt and implement a routine tree trimming program that clears tree limbs near power lines and/or hanging in right-of-way; Remove dead trees from right-of way and drainage systems on a scheduled basis.
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BACKGROUND INFORMATION

Jurisdiction	City-wide
Risk Reduction Benefit	Reduce damages to infrastructure; Ensure continuity of services during and after event; Reduce damages associated with power outages; Reduce risk of injuries or fatalities to vulnerable populations.
Type Of Action	Structure and Infrastructure

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Hurricane, Hail, High Winds, Lightning, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	Reduce risk to new and existing structures
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,500
Potential Funding Sources:	State and Federal Grants, Local Funds
Responsible Department:	City of Newton Public Works Director
Coordinating Agencies/Personnel:	City of Newton City Administrator
Implementation Period:	Within 24 months of plan adoption
Incorporation Into Existing Plans:	N/A
COMMENTS:	

CITY OF NEWTON – ACTION ITEM # 11

Proposed Action:	Certification in the National Weather Service StormReady Program.
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BACKGROUND INFORMATION

Jurisdiction	City critical facilities
Risk Reduction Benefit	Reduce risk to citizens by educating the public on how to prepare for hazards and disasters.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Hail, High Winds, Hurricane, Lightning, Tornado, Winter Storm
Community Lifeline:	Safety and Security
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$1,000
Potential Funding Sources:	State and Federal Grants, Local Funds (staff time)
Responsible Department:	City of Newton City Administrator
Coordinating Agencies/Personnel:	Newton County Emergency Management Coordinator
Implementation Period:	Within 24 months of plan adoption
Incorporation Into Existing Plans:	Emergency Operations Plan
COMMENTS:	

CITY OF NEWTON – ACTION ITEM # 12

Proposed Action:	Educate community on the dangers of low water crossings through the installation of warning signs and promotion of "Turn Around, Don't Drown" Program.
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BACKGROUND INFORMATION

Jurisdiction	City-wide
Risk Reduction Benefit	Reduce risk of injuries, fatalities, and damages through education and awareness.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Flood, Hurricane
Community Lifeline:	Safety and Security; Communications
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$1,500
Potential Funding Sources:	State and Federal Grants, Local Funds (staff time)
Responsible Department:	Newton County, City of Newton Public Works Director
Coordinating Agencies/Personnel:	Newton County Emergency Management Coordinator, Newton County Floodplain Administrator
Implementation Period:	Within 12 months of plan adoption
Incorporation Into Existing Plans:	N/A
COMMENTS:	

CITY OF NEWTON – ACTION ITEM # 13

Proposed Action:	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages.
-------------------------	--

BACKGROUND INFORMATION

Jurisdiction	City-wide
Risk Reduction Benefit	Promote hazard awareness and protect citizens from potential injuries and damages.
Type Of Action	Education and Awareness

MITIGATION ACTION DETAILS

Hazard(s) Addressed:	Cyber Attack, Drought, Excessive Heat, Flood, Hazardous Materials, Hurricane, Hail, High Winds, Lightning, Pandemic, Tornado, Wildfire, Winter Storm
Community Lifeline:	Safety and Security; Communications
Effect On New/Existing Buildings:	N/A
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$500
Potential Funding Sources:	State and Federal Grants, Local Funds (staff time)
Responsible Department:	City of Newton City Administrator
Coordinating Agencies/Personnel:	Newton County Emergency Management Coordinator,
Implementation Period:	Outreach campaign on an annual basis
Incorporation Into Existing Plans:	N/A
COMMENTS:	

7.3 CONTINUED NATIONAL FLOOD INSURANCE PROGRAM PARTICIPATION

44 CFR 201.6(c) Plan content. The plan must include the following:

- (3) (ii) ...All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

The Hazard Mitigation Committee considers continued participation in the NFIP as integral to future flood mitigation efforts and opportunities for growth and development for the County in the future. Newton County is a participant in good standing with the National Flood Insurance Program (NFIP).

Newton County adopted its first Flood Damage Prevention Order (FDPO) in 1979, joined the NFIP in 1987, and re-adopted the County FDPO in 1987 and 2012 and 2018. The implementation of this FDPO is in addition to the minimum NFIP standards for new construction and substantial improvements of structures.

Article 1, Section D of the FDPO lists the following Methods of Reducing Flood Losses:

1. Restrict or prohibit uses that are dangerous to health, safety, or property in times of flood, or cause excessive increases in flood heights or velocities;
2. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
3. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood waters,
4. Control filling, grading, dredging, and other development which may increase flood damage;
5. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters, or which may increase flood hazards to other lands.

The City of Newton first joined the NFIP in August 2010. Table 7.3 – 1 shows current NFIP participation status for Newton County and the City of Newton.

Table 7.3 – 1 Participating communities in the NFIP

COMMUNITY	CID NUMBER	INITIAL FIRM IDENTIFIED	CURRENT EFFECTIVE MAP DATE
NEWTON COUNTY	480499A	04/01/1987	11/16/2018
CITY OF NEWTON	480500A	09/21/1998	11/16/2018

Source: FEMA National Flood Insurance Program as of 05/01/2022, FEMA Community Status Report Book

Each of the participating jurisdictions has a designated floodplain administrator. The floodplain administrators in the planning area will continue to maintain compliance with the NFIP including continued floodplain administration, zoning ordinances, and development regulation. The FDPO adopted by jurisdictions outline the minimum requirements for development in special flood hazard areas

Each of the participating jurisdictions is committed to continued involvement in the NFIP. As such, an action item was drafted that supports and ensures the continued participation in the NFIP for each jurisdiction that participates in this plan and the enforcement of its requirements.

Across the State of Texas, as of the time of this writing, 249 of the 254 total counties are formal participants in the National Flood Insurance Program (NFIP). Participation in the NFIP involves the adoption and enforcement of a local Flood Damage Prevention Order (FDPO), and the adoption of Flood Insurance Rate Maps (FIRMs).

Consequences of not participating in, withdrawing from, or suspension from the NFIP include the following:

1. No resident will be able to purchase a flood insurance policy.
2. Existing flood insurance policies will not be renewed.
3. No Federal grants or loans for development may be made in identified flood hazard areas under programs administered by Federal agencies such as HUD, EPA, and SBA;
4. No Federal disaster assistance may be provided to repair insurable buildings located in identified flood hazard areas for damage caused by a flood.
5. No Federal mortgage insurance or loan guarantees may be provided in identified flood hazard areas. this includes policies written by FHA, VA, and others.
6. Federally insured or regulated lending institutions, such as banks and credit unions, must notify applicants seeking loans for insurable buildings in flood hazard areas that there is a flood hazard, and that the property is not eligible for Federal disaster relief.

Results of the citizen survey showed that flooding was identified as the second most common natural disaster experienced by participants, who designated it as a natural disaster of which they were Very Concerned. As such, many of the mitigation actions were developed with flood mitigation in mind.

7.4 COMPLIANCE CAPABILITIES ASSESSMENT AND INTEGRATION WITH PLANNING MECHANISMS

An integral component of the mitigation strategy is the incorporation of this plan's objectives into existing and future planning mechanisms (capabilities). Most planning mechanisms in place relate to managing and regulating development in the floodplain, including Flood Damage Prevention Ordinances for Newton County and the City of Newton. Building codes are not used by the participating jurisdictions but septic permit approval is required for new development in rural areas. Community Emergency Response Training (CERT) is offered for county residents and emergency management staff and resources are experienced, maintained, and coordinated. Adopting a Fire Code for the City of Newton is considered a high priority by first responders.

Throughout the planning process, Newton County and the City of Newton discussed ways to expand and/or improve their respective capabilities. Some of these discussions directly influenced the addition of Action Items (for example, the City of Newton intending to enact a Building Code). Identified shortcomings at the County level include the lack of a long-range master plan stormwater management plan and/or regulations. At the City level these included the lack of Fire and Building Codes.

Considered solutions include revisiting roles and responsibilities of various offices and expanding as practical.

As the region moves forward into this next planning cycle, it is the intent to foster continued and increased communication between jurisdictions and local agencies for the betterment of the planning area and the pursuit of opportunities for grant funding and economic growth.

The Hazard Mitigation Team is comprised of personnel with direct oversight into the development, update, and day-to-day implementation of these planning mechanisms. Below, Table 7.4 – 1 lists planning mechanisms and regulatory tools applicable to the planning area.

Table 7.4 – 1 Capabilities Assessment, Newton County and City of Newton

REGULATORY TOOL	JURISDICTION	CURRENT STATUS AND FUTURE ACTIONS
LONG RANGE MASTER PLAN	County	Upcoming, HMC members to participate
FLOODPLAIN REGULATIONS	County / City	Yes, Flood Damage Prevention Order of 2018. Continue to strengthen and reevaluate requirements.
BURN BAN NOTICE	County	Yes, By Commissioners Court Order. Improve announcements, education in future.
FIRE CODE	City	No, None as of 2022. Consider in future.
BUILDING CODE	City	No, None as of 2022. City of Newton Action Item #3.
EROSION CONTROL PRACTICES	County	Yes, Flood Damage Prevention Order of 2018. Continue to strength practices.
STORM WATER MANAGEMENT	County	No, None as of 2022. Consider seeking funding.
SEPTIC PERMITS	County	Yes, Issued through Jasper – Newton Health Department.
SITE PLAN REVIEW REQUIREMENTS	County	Yes, Required within floodplain. Consider additional requirements for subdivisions.
EMERGENCY OPERATIONS PLAN	County / City	Yes, Integrate HMAP Risk Assessment.
FLOOD INSURANCE STUDY	County / City	Yes, Revised November 16, 2018.
ELEVATION CERTIFICATIONS	County / City	Yes, Required for Floodplain Development Permit Applications.

Source: Participating Jurisdictions

The Newton County Flood Damage Prevention Order and permit procedure regulates all future development and substantial repair of structures in the FEMA identified Special Flood Hazard Area (SFHA), or 100-year floodplain.

A Floodplain Development Application (FPDA) and preliminary-conditional approval of it by the floodplain administrator is required prior to issuance of an Authorization to Proceed with Construction (ATP). Upon completion of construction the applicant must demonstrate the project was built as shown on the building site plan, prior to final approval.

The Flood Damage Prevention Order also requires all new development (or substantial repair or improvement) in the Floodway ('Floodway in Zone AE') to cause 'No Net Rise' in flood water surface elevation, developed and signed/certified by a hydrologic engineer.

Main floor for any development, substantial repair, or improvement to property in the 100-year floodplain must be constructed to a minimum height 2' above the local base flood elevation, and in accordance with all the following provisions:

Excerpt 1: FDPO. Article 1, Section C, Pages 4 – 5: Statement of Purpose

It is the purpose of this ORDER to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

1. Protect human life and health;
2. Minimize expenditure of public money for costly flood control projects;
3. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. Minimize prolonged business interruptions;
5. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
6. Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas,
7. Ensure that potential buyers are notified that property is in a flood area.

Excerpt 2: FDPO. Article 1, Section D, Page 5: Methods of Reducing Flood Losses

In order to accomplish its purposes, this ORDER uses the following methods:

1. Restrict or prohibit uses that are dangerous to health, safety, or property in times of flood, or cause excessive increases in flood heights or velocities;
2. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
3. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood waters;
4. Control filling, grading, dredging and other development which may increase flood damage;
5. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters, or which may increase flood hazards to other lands.

Excerpt 3: FDPO. Article 5, Section B, Pages 20 – 21: Specific Standards

(1) Residential Construction – new construction and substantial improvement of any residential structure shall have the lowest floor (including basement), elevated to or above the base flood elevation plus a 24” free board. A registered professional engineer, architect, or land surveyor shall submit a certification to the Floodplain Administrator that the standard of this subsection as proposed in Article 4, Section C (1) a., is satisfied.

(4) Manufactured Homes

- (a) Require that all manufactured homes to be placed within Zone A on a community’s FHBM or FIRM shall be installed using methods and practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.
- (b) Require that manufactured homes that are placed or substantially improved within Zones A1 – 30, AH, and AE on the community’s FIRM on sites
 - (i) Outside of a manufactured home park or subdivision,
 - (ii) In a new manufactured home park or subdivision,
 - (iii) In an expansion to an existing manufactured home park or subdivision, or
 - (iv) In an existing manufactured home park or subdivision on which a manufactured home has incurred “substantial damage” as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation plus a 24” free board and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- (c) Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision with Zones A1 – 30, AH, and AE on the community’s FIRM that are not subject to the provisions of paragraph (4) of this section be elevated so that either:
 - (i) The lowest floor of the manufactured home is at or above the base flood elevation plus a 24” free board, or
 - (ii) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

SECTION 8: PLAN MAINTENANCE

44 CFR 201.6(c) Plan content. The plan must include the following:

- (4) A *plan maintenance process* that includes:
 - (i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
 - (ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning Mechanisms such as comprehensive or capital improvement plans, when appropriate.
 - (iii) Discussion on how the community will continue public participation in the plan maintenance process.

8.1 PLAN MAINTENANCE PROCEDURES

44 CFR 201.6(c) Plan content. The plan must include the following:

- (4) A *plan maintenance process* that includes:
 - (ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning Mechanisms such as comprehensive or capital improvement plans, when appropriate.

This mitigation plan is a living document that may require adjustments as conditions change or participating jurisdictions experience growth. This section will outline the method and schedule for monitoring, evaluating, and updating the plan within the next 5-year cycle. Successful practice of these three objectives relies on continued open communication between Committee members, stakeholders, and the public.

8.2 MONITORING AND EVALUATION

44 CFR 201.6(c) Plan content. The plan must include the following:

- (4) A *plan maintenance process* that includes:
 - (i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Newton County and the City of Newton are committed to implementing this Hazard Mitigation Action Plan through execution of the action items listed herein. Hazard Mitigation Action Plan monitoring will include a report to the local Hazard Mitigation Officer at the outset and at the completion of each project to ensure oversight, to gather feedback for future updates and to ensure that project timelines are met (see example report, Appendix F). The local Hazard Mitigation Officer will work in coordination with TDEM during post disaster operations to ensure that disaster response teams have access to information and to ensure mitigation opportunities are identified.

In addition, the participating jurisdictions are committed to utilizing this plan to access mitigation grant funds to assist the implementation of action items set forth in Section 7 (Mitigation Strategy). Implementation of high benefit/low-cost action items will be encouraged in parallel with high priority action items that require grant funding to implement. Opportunities to partner and share costs with affiliated agencies and neighboring jurisdictions for multi-objective projects are encouraged.

The Hazard Mitigation Committee (HMC) will monitor the plan in the intervening years between 5-year plan update cycles. The local Hazard Mitigation Officer will oversee the monitoring process, the maintenance of meeting notes, hazard information, and update of the mitigation annex.

The HMC will meet annually on the last business day of January and/or after a disaster event to monitor and evaluate the plan and present data, findings, lessons learned, and future mitigation opportunities or needs. Further evaluation will be conducted by reviewing the Summary Analysis sections of the Hazard Mitigation Project Report (example Appendix F), to gauge relative effectiveness of completed mitigation projects. These meetings will be open to the public and involve both participating jurisdictions. The annual

monitoring meetings will involve discussion of hazard related data from the previous year and discussion of progress made toward action item implementation.

Once a year the HMC will brief the County commissioners or City council as appropriate on the progress made or obstacles encountered in the implementation of the plan.

Unless otherwise specified these annual hazard mitigation action plan monitoring meetings will occur at as the last agenda item of the February regular meeting for Newton County Commissioners' Court and Newton City Council. Additional special meetings of the HMC will be organized as appropriate.

The HMC will monitor the plan to assess if significant changes have occurred in the premises upon which the plan was developed such as the following:

- changes in data sources and/or methodology used to determine vulnerabilities and loss estimates, in terms of quality and availability
- changes in federal or state plans that could affect the continued implementation of any of the mitigation actions
- the identification of new hazards requiring new mitigation actions
- identification of mitigation grant opportunities
- changes in community perception relative to specific hazards

In addition to these functions, the HMC agrees to work to educate and involve the public in hazard mitigation activities and to oversee the incorporation of this plan into future planning and public policy documents as these are updated or developed. The incorporation of this plan into other planning instruments will serve as an additional metric for success. This plan will be evaluated based on implementation of action items, the incorporation of mitigation principles into future public policy, improved public safety, and the overall reduction of losses for Newton County residents.

8.3 UPDATING

44 CFR 201.6(d) Plan review.

- (3) A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

The Newton County Hazard Mitigation Plan, Version 4.0 was prepared in January – June 2022 and is intended to remain current for the period 2022 through 2027. In the third year of the planning cycle (2020) the HMC will begin developing grant applications and identifying funding sources to update the document.

In the fourth year of the five-year cycle, in accordance with 44CFR, Section 201.6, the Hazard Mitigation Team (HMT) will reconvene to update and amend the Hazard Mitigation Action Plan, allowing ample time for meetings, document drafting, revision and adoption within the required five-year timeframe. The HMC will also identify and discuss new mitigation measures to be added to the plan and discuss and document accomplishments and/or implementation problems and recommended solutions.

8.4 CONTINUED PUBLIC INVOLVEMENT

44 CFR 201.6(c) Plan content. The plan must include the following:

(4) A *plan maintenance process* that includes:

(iii) Discussion on how the community will continue public participation in the plan maintenance process.

Throughout current and future planning cycles, City and County residents will be canvassed to solicit local information, continuing Newton County's dedication to involving the public directly in annual review and cyclical updates of this Hazard Mitigation Action Plan. In addition to the annual evaluation meeting of the HMC, meetings will be scheduled as deemed necessary by the Hazard Mitigation Officer to provide a forum for which the public can express its concerns, opinions, or ideas about the plan and/or its implementation. The HMC will publicize meetings under standard public notice procedures and through local media outlets.

Attendance at the HMC meetings is just the first level of public involvement planned for the local planning process. Members of the committee were encouraged to not only invite members of the public and local experts to future meetings, but also to carry on a dialogue outside of the formal meetings to develop a more comprehensive picture of the needs and concerns of County residents related to natural hazards and mitigation planning.

Copies of this plan will be catalogued and kept at the offices of the County Judge, City Administrator, Emergency Management Coordinator, and public libraries. There are also several mitigation action items that have been designed with involvement from the public in mind. Many of the effects of natural hazards can be lessened by simply educating members of the public on actions they can take to minimize danger to themselves and their possessions. It is anticipated that these strategies will help develop ownership by the public in the plan, and that future iterations of the plan will include strategies that are developed via high levels of public participation.

APPENDICES

APPENDIX A – ADOPTION DOCUMENTS



THE COUNTY OF NEWTON

110 Court Street • P. O. Drawer 1380

Newton, Texas 75966

Office: (409) 379-5691 FAX: (409) 379-2107

WEBSITE: www.co.newton.tx.us

EMAIL: newtoncountyjudge@co.newton.tx.us

COMMISSIONERS COURT

KENNETH WEEKS, County Judge

DANNY BENTSEN, Precinct 1

PHILLIP WHITE, Precinct 2

GARY FOMBY, Precinct 3

WESLEY E. THOMPSON, Precinct 4

Resolution # 8063

ADOPTING THE NEWTON COUNTY MULTI-JURISDICTION HAZARD MITIGATION ACTION PLAN

STATE OF TEXAS §

COUNTY OF NEWTON §

WHEREAS, the County of Newton, with the assistance of Gary R. Traylor & Associates, has gathered information and developed the Newton County Multi-Jurisdiction Hazard Mitigation Action Plan; and

WHEREAS, the Newton County Multi-Jurisdiction Hazard Mitigation Action Plan has been prepared in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, Newton County is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions of the Plan; and

WHEREAS, Newton County has reviewed the Plan and affirms that the Plan will be updated no less than every five years.

NOW, THEREFORE, BE IT RESOLVED by Commissioners Court of Newton County, Texas, adopts the Multi-Jurisdiction Hazard Mitigation Action Plan, and resolves to execute the actions in the Plan

ADOPTED by the Newton County Commissioners Court in Newton, Texas on this the 18th day of October 2022.

Absent

Kenneth Weeks, Newton County Judge

Absent

Phillip White, Commissioner, Prec. #2

Danny Bentsen
Danny Bentsen, Commissioner, Prec. #1

Gary Fomby
Gary Fomby, Commissioner, Prec. #3

Wesley E. Thompson
Wesley Thompson, Comm., Prec. #4

ATTEST:

Sandra K. Duckworth

Sandra K. Duckworth, County Clerk, Newton County

Resolution # _22-10_____

**ADOPTING THE CITY OF NEWTON
MULTI-JURISDICTION HAZARD MITIGATION ACTION PLAN**

STATE OF TEXAS §

CITY OF NEWTON §

WHEREAS, the City of Newton, with the assistance of Gary R. Traylor & Associates, has gathered information and developed the City of Newton Multi-Jurisdiction Hazard Mitigation Action Plan; and

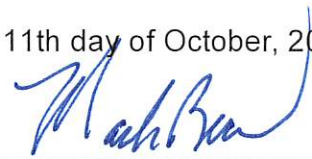
WHEREAS, the City of Newton Multi-Jurisdiction Hazard Mitigation Action Plan has been prepared in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, City of Newton is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions of the Plan; and

WHEREAS, City of Newton has reviewed the Plan and affirms that the Plan will be updated no less than every five years.

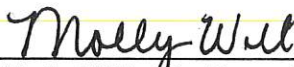
NOW, THEREFORE, BE IT RESOLVED by the City Council of Newton, Texas, adopts the Multi-Jurisdiction Hazard Mitigation Action Plan, and resolves to execute the actions in the Plan

ADOPTED by the City Council of Newton, Texas on this 11th day of October, 2022.



Mark Bean
City of Newton, Mayor

ATTEST:



Molly Will, City Secretary

APPENDIX B – PUBLIC SURVEY RESULTS

Hazard Mitigation Citizen Survey

27 Responses 08:37 Average time to complete Active Status

1. How long have you lived at your residence?

Less than one year	2
One to four years	4
more than five years	21

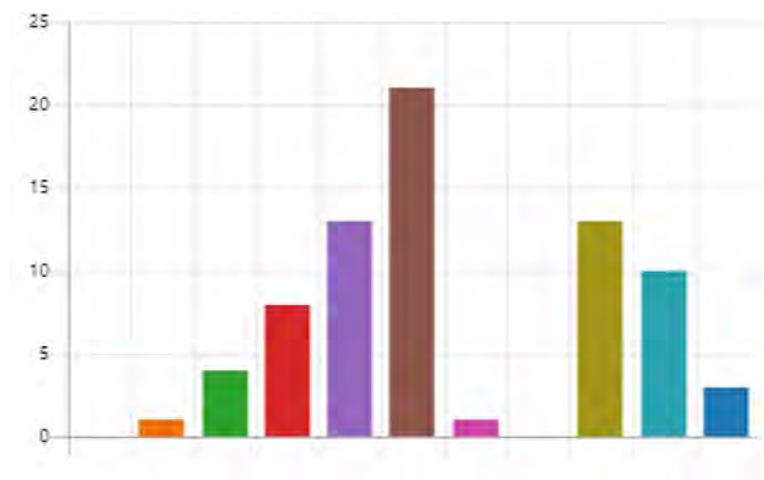
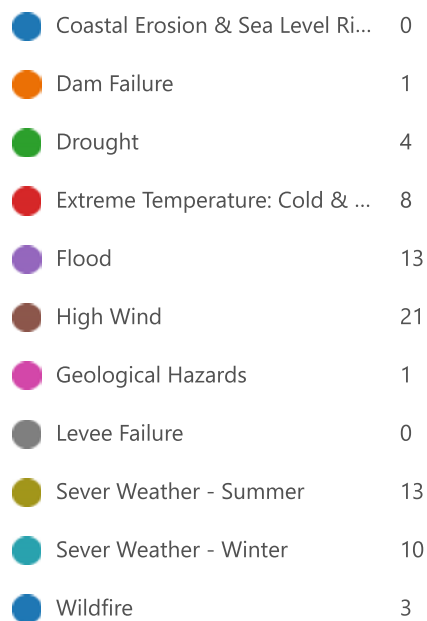


2. Do you own or rent your residence

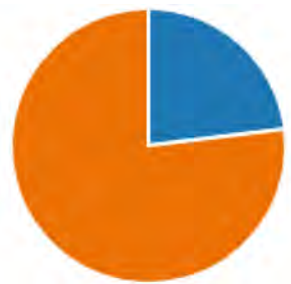
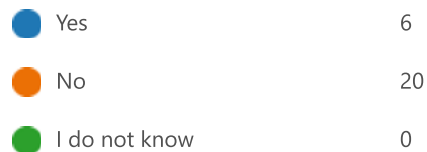
Own	27
Rent	0



3. Have you or someone in your household directly experienced a natural disaster and if so what kind where you live now?



4. To the best of your knowledge, is your property located in a designated floodplain?



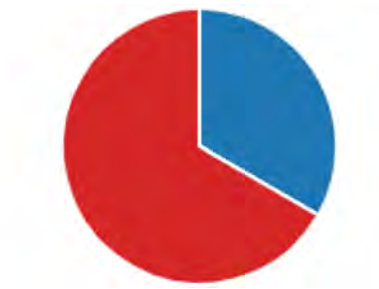
5. If "Yes", do you have flood insurance?

Yes	6
No	10



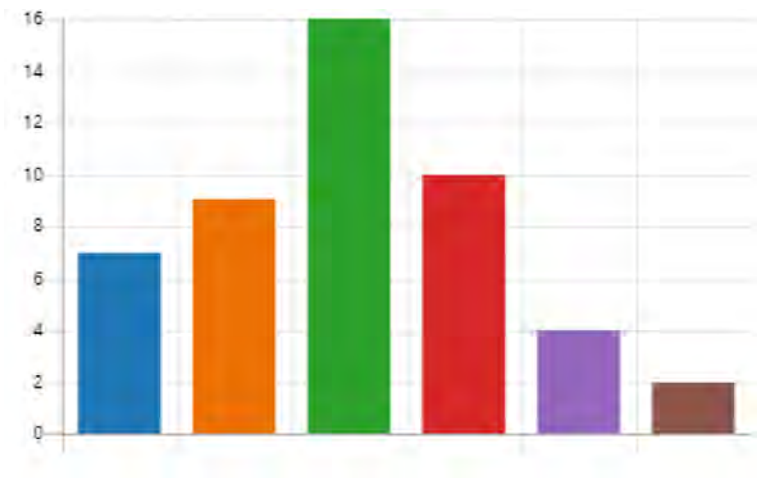
6. If the answer to question 5 is "No", what is the primary reason why you do not carry flood insurance?

Flood insurance is too expensi...	3
I do not know how to purchas...	0
I have tried to purchase flood ...	0
Other	6



7. If your property were located in a designated "high hazard" area, or had received repeated damages from a natural hazard event, would you consider one of the following? (Please check all that apply.)

- A buyout of your property (an... 7
- Structural elevation of your pr... 9
- retrofit your property to bette... 16
- Purchase insurance 10
- none of the above 4
- Other 2



8. How concerned are you about the following natural disasters affecting your county?

Very concerned Somewhat concerned Neither concerned nor unconcerned
Somewhat unconcerned Very unconcerned

Coastal Erosion & Sea Level Rise

Dam Failure

Drought

Extreme Temperature: Cold & Hot

Flood

High Wind

Geological Hazards

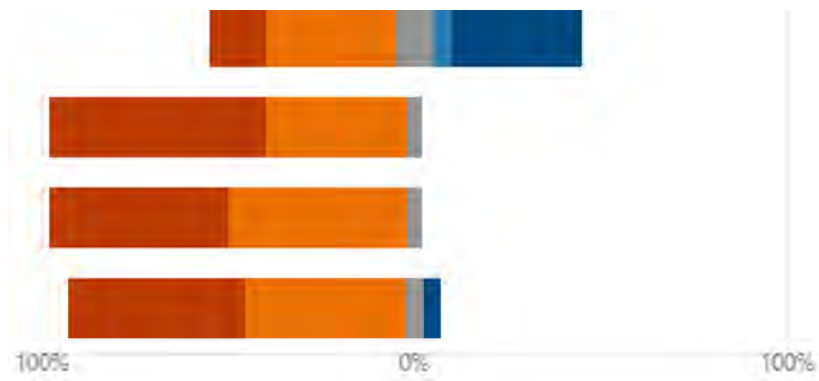
Levee Failure

Sever Weather - Summer

Severe Weather - Winter

Wildfire





9. Have you ever received information about how to make members of your household and your home safer from natural disasters?

- Yes 7
- No (Skip to question 11) 19



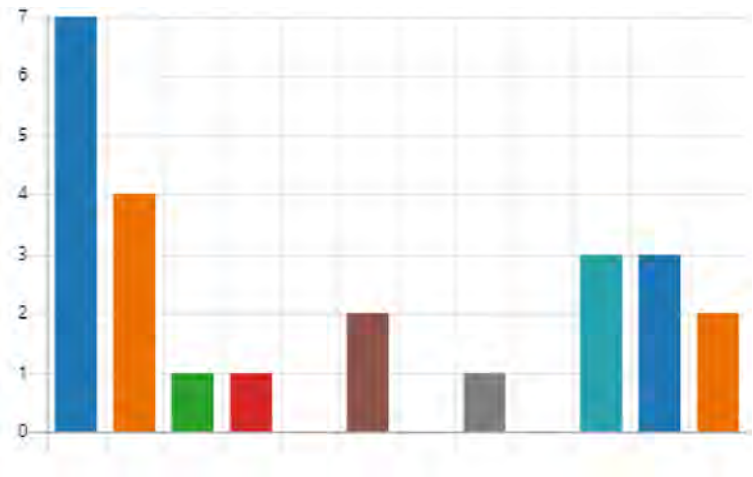
10. If the answer to question 9 is "Yes", then how recently.

- Within the last 6 months 1
- Between 6 and 12 months 1
- Between 1 and 2 years 2
- Between 2 and 5 years 2
- 5 years or more 1



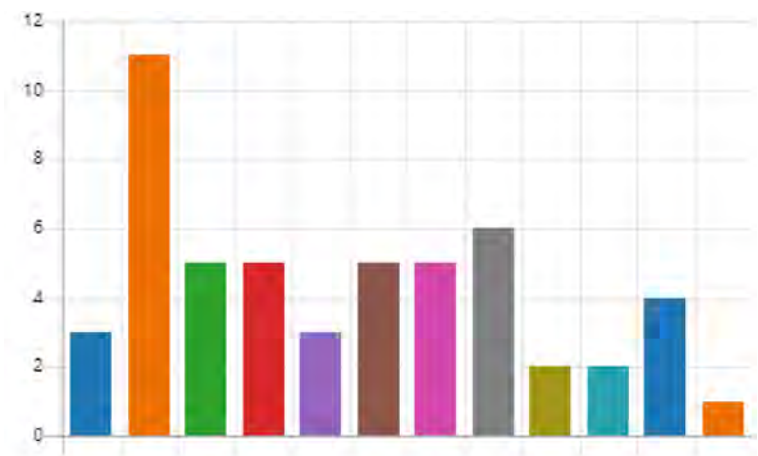
11. From whom did you last receive information about how to make members of your household and your home safer from natural disasters?

News media	7
Government agency	4
Insurance agent or company	1
Utility company	1
University or research instituti...	0
Neighbor / friend/ family me...	2
Elected official	0
American Red Cross	1
Other non-profit organization	0
Social media (Facebook, Twitt...	3
Not Sure	3
Other	2



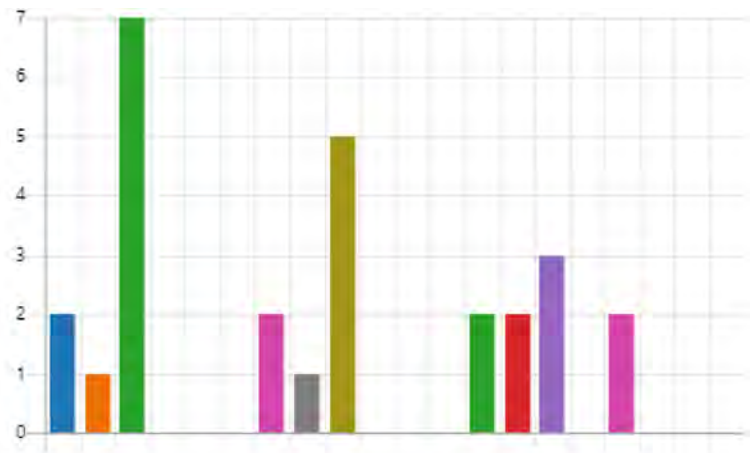
12. Who would you most trust to provide you with information about how to make members of your household and your home safer from natural disasters?

News media	3
Government agency	11
Insurance agent or company	5
Utility company	5
University or research instituti...	3
Neighbor / friend/ family me...	5
Elected official	5
American Red Cross	6
Other non-profit organization	2
Social media (Facebook, Twitt...	2
Not Sure	4
Other	1

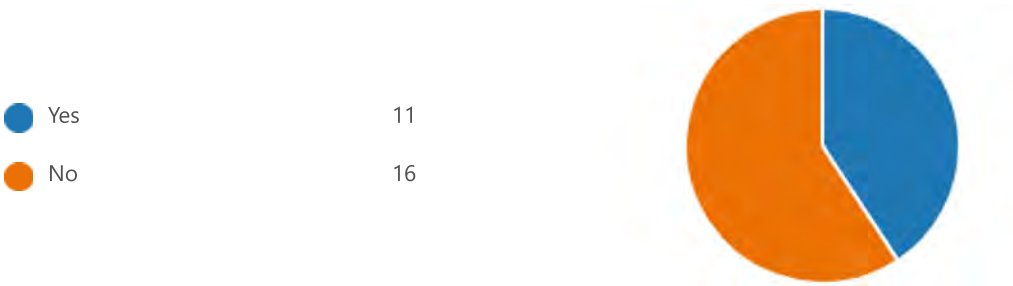


13. What is the most effective way for you to receive information about how to make your household and home safer from natural disasters?

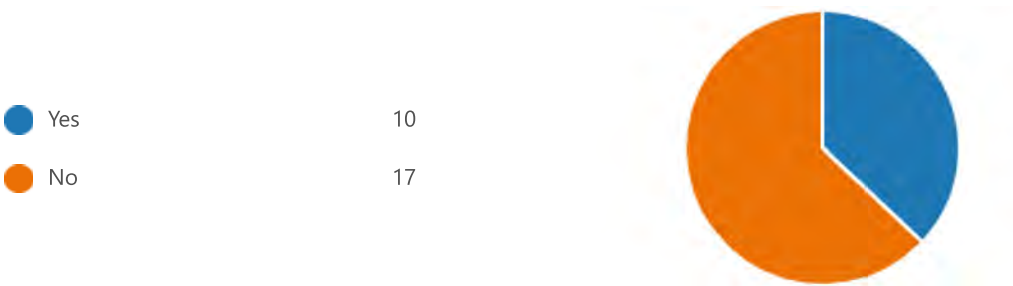
Newspaper stories	2
Newspaper ads	1
Television news	7
Television ads	0
Radio news	0
Radio ads	0
Email newsletters	2
Online news outlets	1
Social media (Facebook, Twitt...	5
Schools	0
Outdoor advertisements (billb...	0
Books	0
Mail	2
Fire Department/Rescue	2
Fact sheet/brochure	3
Chamber of Commerce	0
Public workshops/meetings	2
Magazine	0
University or research instituti...	0
Other	0



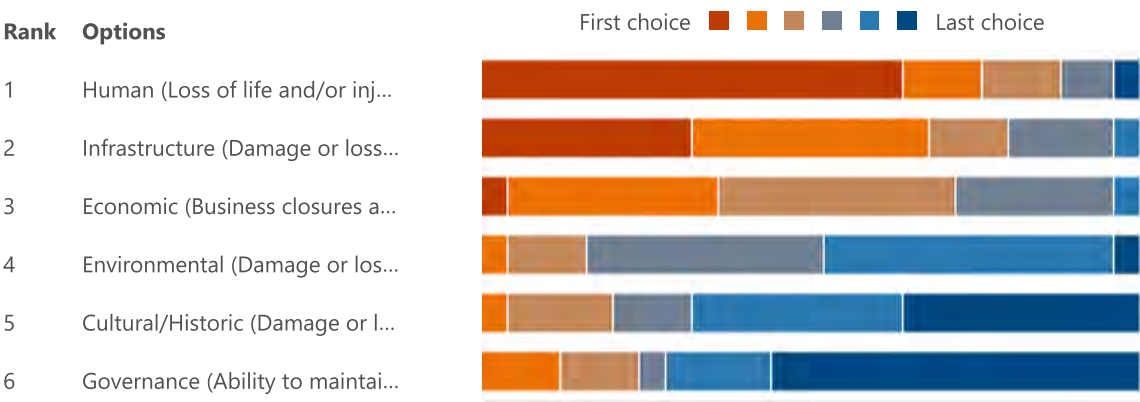
14. Prior to this survey, were you aware of your county's Hazard Mitigation Action Plan (HMAP)?



15. Prior to this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the HMAP every five years in order to be eligible for federal pre- and post-disaster hazard mitigation funds?

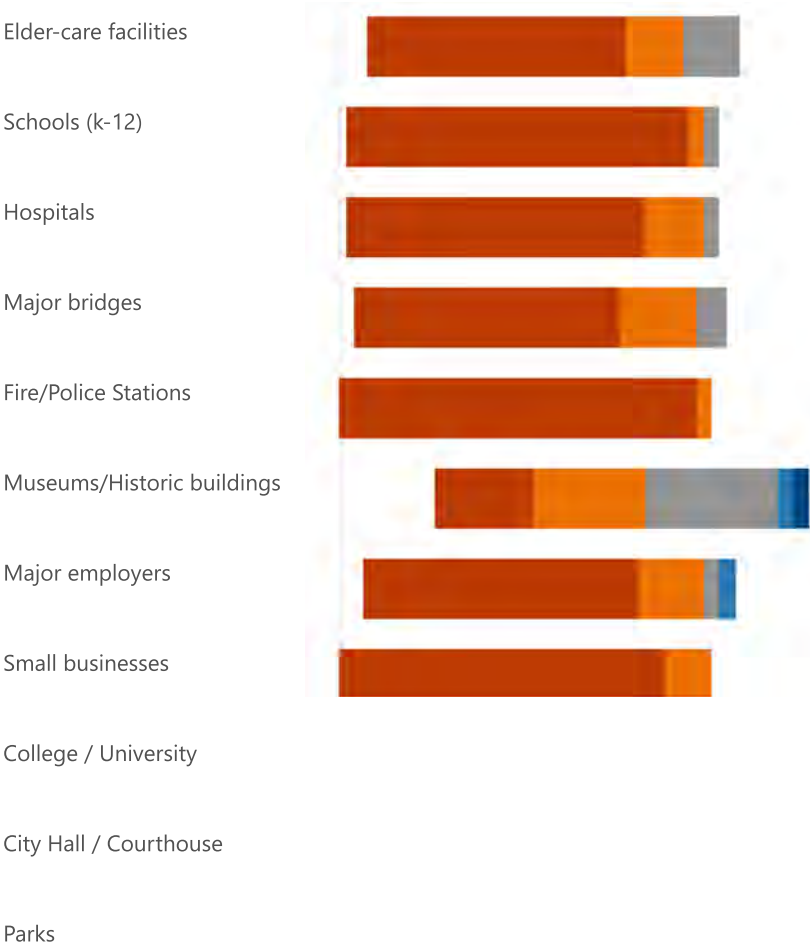


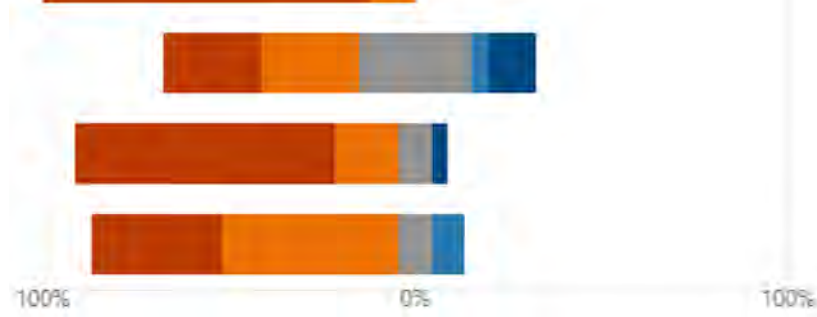
16. Community Assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following categories are most susceptible to the impacts caused by natural hazards in your county? Please rank the community assess in order of vulnerability. Drag each item to arrange them in order from most vulnerable to least vulnerable.



17. We would like to know what specific types of community assets are most important to you.

Very Important Somewhat Important Neutral Not So Important Not Important





APPENDIX C – CRITICAL FACILITIES

APPENDIX D – MEETING DOCUMENTATION



POSTED

FEB 24 2022

TIME 9:00am
BY: Michelle Madley
SANDRA K. DUCKWORTH, COUNTY CLERK

Kenneth Weeks
Newton County Judge
Courthouse Square * P. O. Drawer 1380 * 110 East Court Street
Newton, Texas 75966
Telephone: (409) 379-5691
Email: newtoncountyjudge@co.newton.tx.us

No. 7870

NOTICE

Is hereby given that a Team Meeting for the Newton County Hazard Mitigation Action Plan Update will be held on the following dates:

Thursday, March 3, 2022 @ 2:00 p.m. – 4:00 p.m.

Monday, March 14, 2022 @ 2:00 p.m. – 4:00 p.m.

and

Thursday, March 31, 2022 @ 2:00 p.m. – 4:00 p.m.

At the Iris and Anne Howard Civic Center, 213 East Court Street, Newton, Texas 75966.

Executed this 24th day of March, 2022.

Kenneth Weeks, Newton County Judge



Newton County Hazard Mitigation Plan Update Team Member Agenda March 3, 2022


1. Sign In Sheet
2. Introduction of Newton County Hazard Mitigation Team Members
3. Discuss FEMA requirements for Hazard Mitigation Plan updates
 - Newton County must review and revise it's currently adopted Hazard Mitigation Plan to reflect changes in development, progress in local mitigation efforts and changes in priorities then resubmit for approval every 5 years to continue to be eligible for FEMA mitigation project grant funding.
 - This Team has been convened to provide input for the submittal of the revised Newton County Hazard Mitigation Plan that will be submitted to FEMA for approval
4. Discuss the targets scheduled for this committee
5. Review Proposed Work Schedule and Timeline
6. Review dates and times for meetings to be held at Howard Civic Center
 - Meeting #1 March 3, 2022 (2 pm - 4 pm)
 - Meeting #2 March 14, 2022 (2 pm – 4 pm)
 - Meeting #3 March 31, 2022 (2 pm – 4 pm)
7. Review Mitigation Action Items from 2017 Hazard Mitigation Action Plan
8. Identify Hazards for Newton County and City of Newton including those mentioned in existing plan
9. Discuss preliminary agenda items for future meetings
10. Discussion of previous/recent disaster events
11. Possible data offered by Team Members



Newton County Multi-Jurisdiction Hazard Mitigation Action Plan (2022 Update)

Committee Meeting #1

March 03, 2022

Name	Representing	Phone	Email
Kristi Davis	GRT	409-379-2019	Kristi.davis@grtraylor.com
Elizabeth Holloway	Newton County Grants	409-527-5050	elizabeth.holloway@co.newton.tx.us
Rhonda Alford	Newton County Grants	409-527-6650	rhonda.alford@co.newton.tx.us
Olen Bean	Newton County DEM	409-527-5026	olen.beane@co.newton.tx.us
Mark Taylor	GRT	903-939-7403	mark.taylor@grtraylor.com
Christel Kiker	GRT	903-939-7400	christel.kiker@grtraylor.com
Danny Bentsen	Newton Co Pet #1	409-651-5975	danny.bentsen@co.newton.tx.us
Tom Cuingaman Jr	TDEM	936-208-3270	TOM.CUNIGAMAN@TDEM.TEXAS.GOV
Jody Davis	JNEC	409-981-1938	jdavis@jnel.com
MARK McCall	ESDI	409-258-5974	mark.mccall@japan.ca
Will Tackron/	NEWTON P.D	409-489-6622	Will@newstartexas.org
Andrew Mills	SRA TX	409-565-2273	amills@sratx.org
	Newton County	409-565-5691	Newton County Judge@co.newton.tx.us
Cathy Pearson	AgriLife Extension	407-379-4831	Cathy.Pearson@ag.tamu.edu
Shereff Burkay (Robert)	County Sheriff	409-379-3636	robert.burkay@co.newton.tx.us
Gary Fomby	Comm. PCT3	409-565-4015	gary.fomby@co.newton.tx.us
Jessie Morgan	DETEC	936-229-3948	jessiem@deepest.com
Shannon Pontkier	IT Newton County	409-527-3308	shannon.pontkier@co.newton.tx.us



Newton County

Hazard Mitigation Plan

Update

Meeting #1

March 3, 2022

- Sign-In Sheet for Attendance (See Attachment A)
- Meeting started at 2:07 pm
- Judge Kenneth Weeks opened the meeting at 2:07 pm. He welcomed everyone and expressed his appreciation on behalf of Newton County for their participation in this very important project. Judge Weeks then introduced Mark Taylor with Gary R Traylor & Associates and turned the meeting over to him.
- Mark began by making sure that everyone had signed in to ensure there was a record of attendance for the meeting.
- Each Team Member introduced themselves and stated the entity they represented and their position.
- Each Team Member was provided with an Agenda for the meeting. (See Attachment B)
- Mark explained the Hazard Mitigation Plan update process
 - Hazard Mitigation Plans are a requirement to be eligible for grant funds from FEMA
 - Plans must be updated every 5 years
 - Project must tie back to disasters
 - Review Process – once the updated plan is written
 - The Texas Department of Emergency Management (TDEM) will review the plan
 - If there are questions, they will send it back for verification
 - If there are no questions, they will forward to FEMA for approval
 - The Federal Emergency Management Agency (FEMA) will review the plan
 - If there are questions, they will send it back for verification
 - If there are no questions, they will approve the plan
- Mark explained the important role each person in attendance played as a Team Member. He stated their positions and experience would be beneficial when discussing the affects disasters have had on Newton County and ways to help mitigate in the event of future disasters. He added that part of the Team's duties would be to go over the projects that had been completed and those still needing to be completed.
- The FEMA 75/25 cost match for projects was discussed. Team Members were told how projects funded by FEMA would be paid for at 75% of the project cost. Newton County would be responsible for the remaining 25% match. It was also stated that the larger the project, the larger the cost share Newton County would be responsible for. Jon Clingaman, TDEM District 14 Member Relation Coordinator, added that there are avenues Newton County can pursue to help find assistance with the 25% match funding.

- Mark informed the Team Members that for Mitigation Projects to be funded:
 - The project must be included in the Hazard Mitigation Plan
 - There has to be a Federally Declared Disaster for the State of Texas
 - He went on to add that the disaster did not need to occur in Newton County for Newton County to be eligible for funding.
- The following printouts were passed out:
 - Proposed Work Schedule – breaking down the Hazard Mitigation Plan Update in four phases
 - Phase I – Information Gathering and Research Phase
 - Phase II – Public Participation Phase
 - Phase III – Plan Development
 - Phase IV – Plan Review Revision and Adoption
 - Mitigation projects from the previous plan for review
 - Identified Hazards – as listed in the previous plan for Newton County and the City of Newton
 - Priority Action Item List – previous mitigation action items along with blank spaces for Team Members to put in order of priority
- Team Members began discussing some ideas of Mitigation Project Ideas. Some of the ideas included:
 - High water rescue vehicles
 - Demolition
 - Community Safe Room
 - Benefits jurisdictions
 - Serves as multi-purpose building
 - Very high on project list with FEMA
 - Worth benefit to the entire Community
 - Emergency Operation Center/Dispatch
- Animal Shelter
- IT for Newton County
 - Hot Site – computers ready with software, documents, and everything ready to go
 - Cold Site – computers would need to be set up
- Airport
 - Add 2,000 feet to landing strip for cargo planes to bring in supplies
 - Building
 - Generator
 - Cover
- South Newton Water Supply sewer system – individual grinder pumps for each home
- Mark reminded the Team Members that the next two meetings have already been scheduled for March 14 and March 31 from 2:00 to 4:00 pm and will be held again at the Newton Civic Center.
 - He asked everyone to come with a list of their Mitigation Project Ideas and Priority Action Item Lists.
- Judge Weeks and Mark thanked everyone for attending.
- Meeting adjourned at 3:33 pm.



POSTED

FEB 24 2022

TIME 9:00am
BY: Michelle Madley
SANDRA K. DUCKWORTH, COUNTY CLERK

Kenneth Weeks
Newton County Judge
Courthouse Square * P. O. Drawer 1380 * 110 East Court Street
Newton, Texas 75966
Telephone: (409) 379-5691
Email: newtoncountyjudge@co.newton.tx.us

No. 7870

NOTICE

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Thursday, March 3, 2022 @ 2:00 p.m. – 4:00 p.m.

Monday, March 14, 2022 @ 2:00 p.m. – 4:00 p.m.

and

Thursday, March 31, 2022 @ 2:00 p.m. – 4:00 p.m.

At the Iris and Anne Howard Civic Center, 213 East Court Street, Newton, Texas 75966.

Executed this 24th day of March, 2022.

Kenneth Weeks, Newton County Judge

Newton County Hazard Mitigation Plan Update

Team Member Agenda

March 14, 2022

1. Welcome to everyone
2. Sign In Sheet
3. Introduction of any new Newton County Hazard Mitigation Team Members
4. Discuss any "Identified Hazards" not listed on the printed handout from the 03/03/2022 meeting.
 - Newton County
 - City of Newton
5. Survey
6. Reevaluate targets scheduled for this committee
7. Questions



Newton County Multi-Jurisdiction Hazard Mitigation Action Plan (2022 Update)

Committee Meeting #2

March 14, 2022

Name	Representing	Phone	Email
Kristi Davis	GRT	409-379-2019	Kristi.davis@grtraylor.com
Christel Kiker	GRT	903-581-0500	Christel.kiker@grtraylor.com
Phillip White	Commissioner - Pct 2	409 779-8261	phillip.white@co.newton.tx.us
Danny Bentsen	Com Pct #1	409 651 5975	danny.bentsen@co.newton.tx.us
FAT OATES	GLS	936-637-4900	poates@sis-texas
Rhonda Alford	County Grants Dept	409-519-6650	rhonda.alford@co.newton.tx.us
Liz Holloway	County Grants Dept		elizabeth.holloway@co.newton.tx.us
Kenneth Weeks	Newton County Judge	409-379-5691	newtoncountyjudge@co.newton.tx.us
Olen Bean	Newton County DEM	409-527-5026	olen.bean@co.newton.tx.us
Luke Alford	Texas A&M Forest Service	936-545-7747	Luke.Alford@TFS.Tamu.edu
Joey Davis	Jasper-Newton EC	409-423-2241	jdavis@jnec.com
Cathy Pearson	AgriLife Extension	409-782-4249	cathy.pearson@ag.tamu.edu
Emilee Gerngross	AgriLife Extension	409-594-0544	emilee.gerngross@ag.tamu.edu
Will Jackson	Newton PD	409-489-6626	will@newton-texas.org
Jon Clinganman (online)	TDEM	936-699-7313	jon.clinganman@tdem.texas.gov
Morgan Brown (online)	Newton Co Pct 3	409-565-4015	gary.fomby@co.newton.tx.us
Don Iles	SABINE RIVER AUTH	409-565-2273	diles@srratx.org
Donnie Meek	City of Newton	409-379-5061	donnie@newton-texas.org
Jennifer Harris	GLO	512-839-2446	jennifer.harris.glo@recorery.texas.gov



Newton County

Hazard Mitigation Plan

Update

Meeting #2

March 14, 2022

- Sign-In Sheet for Attendance (See Attachment A)
- Meeting started at 2:04 pm
- Judge Kenneth Weeks opened the meeting. He welcomed everyone on behalf of himself and Newton County. He thanked everyone for taking their time to participate in updating the County's Hazard Mitigation Plan. Judge Weeks turned the meeting over to Mark Taylor with Gary R Traylor & Associates.
- Mark welcomed everyone. He stated that there were several new Team Members in attendance who were not present at the last meeting, so he asked that everyone introduce themselves again along with the entity they represent and their position.
- Mark gave a highlight of information covered during the last meeting. This information included but was not limited to
- Hazard Mitigation Plans are a requirement to be eligible for grant funds from FEMA
 - Plans must be updated every 5 years
 - The important role each Team Member plays in the updating of the Hazard Mitigation Plan
 - Projects must tie back to disasters
 - Review Process – once the updated plan is written
 - The Texas Department of Emergency Management (TDEM) will review the plan
 - If there are questions, they will send it back for verification
 - If there are no questions, they will forward to FEMA for approval
 - The Federal Emergency Management Agency (FEMA) will review the plan
 - If there are questions, they will send it back for verification
 - If there are no questions, they will approve the plan
 - The FEMA 75/25 cost share match
 - For Mitigation Projects to be funded:
 - The project must be included in the Hazard Mitigation Plan
 - There has to be a Federally Declared Disaster for the State of Texas
 - He went on to add that the disaster did not need to occur in Newton County for Newton County to be eligible for funding
- Eligible Activities by Program were passed out. (See Attachment B)
- Mark then began discussing the "Mitigation Action Items" as listed in the current plan. (Copies were on hand for those who were not in attendance for the first meeting.) He started by going over each Mitigation Action Item number and asking them Team Members if they thought it was worth "Keeping", "Following Up On", or "Removing".

- Mark again reminded the Team Members of the Cost Share for Newton County.
 - Jon Clingaman (TDEM District 14 Member Relations Coordinator) added
 - He was so glad to see new faces happy to help with this project
 - Do not cost share be a deterrent for a project.
- Mark reminded everyone that these projects were not guaranteed because they were put into the plan. However, he again stressed if a project was not put into the plan, it would not be eligible for funding.
- The Team Members then began going through the Mitigation Action Items from the last plan. Each item was discussed, and the option was given to:
 - a) Keep in the updated Plan
 - b) Follow up for additional information to determine
 - c) Delete
- Team Member Don Isles, Sabine River Authority Middle Basin Regional Manager, suggested items in the new plan be listed with less site specific site location information so projects can be utilized where needed

• Newton County – Current Mitigation Items

Keep	Mitigation Action Item 1 – Acquire Flood Prone Properties
	<ul style="list-style-type: none"> • Don Isles – Best risk management below the dam for SRA • Elizabeth Holloway – High Priority
Keep	Mitigation Action Item 2 – Inventory Pipelines that are too shallow for safety and that do not meet modern standards
	<ul style="list-style-type: none"> • Danny Bentsen, Newton County Commissioner Precinct 1, can't run a road grader in Myers Settlement • Don Isles – Pull data from Railroad Commission
Keep	Mitigation Action Item 3 – Road and bridge construction projects such as increasing culvert size, replacing culverts with bridges and elevate roads that flood
Follow Up	Mitigation Action Item 4 – Retrofit/storm harden Deweyville VFD facility
	<ul style="list-style-type: none"> • Verify wind rating of new structure • Withstood Hurricane Laura
Keep	Mitigation Action Item 5 – Storm-harden/retrofit other county infrastructures and facilities to withstand higher winds and the impact of flying debris
Delete	Mitigation Action Item 6 – Retrofit Shady Acres nursing home roof, windows and doors to withstand higher wind speeds and the impact of flying debris
	<ul style="list-style-type: none"> • Not covered because it is a privately owned facility
Keep	Mitigation Action Item 7 – Install back-up power generators for existing and future critical facilities
Keep	Mitigation Action Item 8 – Install dry hydrants at strategic locations in the planning area
Keep	Mitigation Action Item 9 – Update County policy to add the requirement to construct on-site runoff detention ponds for future county facilities

Keep	Mitigation Action Item 10 – Develop and distribute materials to educate the public on hazardous materials release response activities
Follow Up	Mitigation Action Item 11 – Educate residents about water conservation and landscape planting practices to preserve water supplies
Keep	Mitigation Action Item 12 – Public Education to decrease demand for electricity
	<ul style="list-style-type: none"> Joey Davis, Jasper Newton Electric Co-Op Director of Member Relations suggested education programs are coordinated through the utility companies. Mr. Davis stated JNEC already has a program.
Keep	Mitigation Action Item 13 – Establish an individual safe room program
Keep	Mitigation Action Item 14 – Install culverts on Kansas City Southern (KCS) railroad line in Ruliff area to reduce dam effect on upstream and improve floodwater conveyance.
Keep	Mitigation Action Item 15 – Identify and implement necessary actions and steps to continue and expand Newton County County’s participation in the NFIP and Community Rating System including but not limited to floodplain mapping, higher regulatory standards, protecting building utilities, storm water management program, drainage system maintenance, and flood warning programs.
Revise	Mitigation Action Item 16 – Place/Improve flood protection berm (approx. 5,000 LF) along Sabine River throughout Newton County including channels, dikes, riverbanks;
Include in Item 16	Mitigation Action Item 17 – Retrofit riverbank retaining structures at locations north of Highway 12 east of Deweyville (Kirkendall); south of Highway 12 east of Deweyville (Camphouse Road); and southeast of Deweyville (River Oaks)
	<ul style="list-style-type: none"> Note: Include in Mitigation Action Item 17 and make less specific to include all floodway properties
Keep	Mitigation Action Item 18 - Wildfire fuel reduction
Keep	Mitigation Action Item 19 – Remove logjams in lower Sabine River east of Deweyville near Ruliff and Kansas City Southern Railroad trestle, and downstream from Indian Lake Subdivision.
	<ul style="list-style-type: none"> Per Don Isles – possibly reword to include “remove logjams in Sabine River including tributaries and drains”
Follow Up	Mitigation Action Item 20 – Relocation of flood prone properties
Delete	Mitigation Action Item 21 – Identify and pursue mitigation solutions for Kansas City Southern Railroad trestle south of Deweyville, to prevent accident and hazardous material spill due to deteriorating condition of structural cross members.
Keep	Mitigation Action Item 22 – Elevate flood prone/repetitive loss homes
Follow Up	Mitigation Action Item 23 – Install frangible (breakaway) linkage systems for vulnerable sections of power lines
Delete	Mitigation Action Item 24 – Establish maintenance program to prevent trees/limbs from falling on power lines and buildings
Follow Up	Mitigation Action Item 25 – Develop water rationing plan
Follow Up	Mitigation Action Item 26 – Develop a database of county residents vulnerable to excessive heat and winter storm related problems
	<ul style="list-style-type: none"> ? ISTAT – not probable

	<ul style="list-style-type: none"> • Contact Holly Anderson with DETCOG
	<ul style="list-style-type: none"> • Low Income / Poverty Stricken
Follow Up	Mitigation Action Item 27 – Retrofit and equip locations to serve as a cooling or heating center for vulnerable populations.
Delete	Mitigation Action Item 28 – Update building code and inspect to ensure standard tie-down and anchoring devices for mobile homes
Keep	Mitigation Action Item 29 – Institute a defensible space program to reduce fuels surrounding homes in the urban-wildlands interface
Delete	Mitigation Action Item 30 – Install covers/protection over all outdoor utility systems and components
Delete	Mitigation Action Item 31 – Install shutters on all county facility windows
Delete	Mitigation Action Item 32 – Install lightning rods and ground systems on all critical facilities

• City of Newton – Current Mitigation Items

Keep	Mitigation Action Item 1-A – Inventory of pipelines that are buried too shallow for safety and that do not meet modern standards.
Delete	Mitigation Action Item I-B – Build community safe room
Delete	Mitigation Action Item I-C- Storm-harden retrofit Shady Acres nursing home and provide backup generator
	<ul style="list-style-type: none"> • Not covered because it is a privately owned facility
Keep	Mitigation Action Item 2 – Retrofit/storm harden critical facilities
Keep	Mitigation Action Item 3 – Implement necessary actions to continue, implement and expand the City of Newton’s participation in the NFIP
Keep	Mitigation Action Item 4 – Acquire and demolish flood prone properties
Keep	Mitigation Action Item 5 – Wildfire fuel reduction
Keep	Mitigation Action Item 6 – Increase culvert size and elevate roads that flood
Keep	Mitigation Action Item 7 - Install back-up power generators for existing and future critical facilities
Keep	Mitigation Action Item 8 – Public education on creating defensible space around property and building with fire resistant material
Keep	Mitigation Action Item 9 – Develop and implement wildfire protection plan
Delete	Mitigation Action 10 – Retrofit and equip locations serve as a cooling or heating unit
Delete	Mitigation Action 11 – Install lightning rods and grounding systems on all facilities
Keep	Mitigation Action 12 - Educate residents about water conservation and landscape planting practices
Keep	Mitigation Action 13 - Install flow systems and appliances in all current and future city facilities.
Keep	Mitigation Action 14 - Install covers/protection over all outdoor utility systems and components.
Delete	Mitigation Action 15 - Install shutters on all city facility windows

• Newton County – New Action Items

Space debris falling from the sky
Fuel Storage Tanks (Jon Clingaman to check for eligibility)
<ul style="list-style-type: none"> • For First Responders
<ul style="list-style-type: none"> • Benefit Supply Chain Hazard
<ul style="list-style-type: none"> • Jon to email Mark & Olen
Animal Shelter – Livestock & Small Animal
Evacuation Route – 87 access down to 2 lanes causes bottlenecking
Portable Emergency Information Platforms
<ul style="list-style-type: none"> • Barricades
<ul style="list-style-type: none"> • Electronic Message Boards
<ul style="list-style-type: none"> • Portable Stop Signs
Airport Expansion
<ul style="list-style-type: none"> • Expand runway to allow cargo planes to land
<ul style="list-style-type: none"> • Storage facility for supplies
<ul style="list-style-type: none"> • CR 1011 Road improvement from Hwy 87 to widen & increase gross weight ($\frac{1}{2}$ of road is County and $\frac{1}{2}$ is City)
High Water Vehicles – equipped with lift gates & ladders
Cyber Security – new switches
Storm Warning from one end of Sabine to the other
Pandemic
<ul style="list-style-type: none"> • Storage facilities for supplies
<ul style="list-style-type: none"> • Drive through for testing & shots
Wi-Fi (Back-Up Servers)
Outreach & Education on property ownership to assist homeowners in cleaning up clouded deed issues
Storm harden Civic Center Windows
Communication
<ul style="list-style-type: none"> • Satellite phones
<ul style="list-style-type: none"> • Portable radios for each officer
Connect all rural water systems together

. City of Newton – New Action Items

Structure Demolition focusing on localized flood areas
<ul style="list-style-type: none">• Abandoned buildings
<ul style="list-style-type: none">• Funding to condemn and tear down
Underground power lines
Implement & strengthen building codes

- Hazard Mitigation Citizen Surveys were passed out. (See Attachment C)
 - Mark explained:
 - The QR Code on the Eligible Activities by Program form could be used for Team Members to submit responses.
 - The survey can be opened up to community members at a later date for additional input.
- Mark asked if anyone had any additional questions.
- Meeting adjourned at 3:43 pm



POSTED

FEB 24 2022

TIME 9:00am
BY: Michelle Mackley
SANDRA K. DUCKWORTH, COUNTY CLERK

Kenneth Weeks
Newton County Judge
Courthouse Square * P. O. Drawer 1380 * 110 East Court Street
Newton, Texas 75966
Telephone: (409) 379-5691
Email: newtoncountyjudge@co.newton.tx.us

No. 7870

NOTICE

Is hereby given that a Team Meeting for the Newton County Hazard Mitigation Action Plan Update will be held on the following dates:

Thursday, March 3, 2022 @ 2:00 p.m. – 4:00 p.m.

Monday, March 14, 2022 @ 2:00 p.m. – 4:00 p.m.

and

Thursday, March 31, 2022 @ 2:00 p.m. – 4:00 p.m.

At the Iris and Anne Howard Civic Center, 213 East Court Street, Newton, Texas 75966.

Executed this 24th day of March, 2022.

A handwritten signature in blue ink, appearing to be "KW", written over a horizontal line.

Kenneth Weeks, Newton County Judge

Newton County Multi-Jurisdiction Hazard Mitigation Action Plan (2022 Update)

Committee Meeting #3

March 31, 2022



Name	Representing	Phone	Email
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Liz Holloway	Newton County Grants	409-527-5050	liz.holloway@co.newton.tx.us
Kenneth Weeks	Newton County Judge	409-379-5691	NewtonCountyJudge@co.newton.tx.us
Olen Bean	Newton County Emerg. Mgmt	409-527-5026	Olen.Bean@co.newton.tx.us
Joe Davis	Jasper-newton EC	409-672-9013	jdavis@jnc.com
Andrew Mills	SRATX	409-565-2273	amills@sratx.org
Will Jackson	Newton PD	409-489-6626	will@newton-texas.org
Cathy Pearson	AgriLife Extension	409-379-4831	cathy.pearson@ag.tamu.edu
Luke Alfaro	Texas A&M Forest SVC	936-545-7747	Luke.Alfaro@TFS.tamu.edu
Jessie Morgan	DETEL	936-229-4000	jessie.m@deepeast.com
Donnie Meek	City of Newton	409-379-5061	donnie@newton-texas.org
Darrell Myers - virtual	Burkeville ISD	409-565-2201	dmyers@burkevilleisd.org
Lajuan Addison - Virtual	Deweyville ISD	409-746-2681	laddison@deweyvilleisd.com



Newton County

Hazard Mitigation Plan

Update

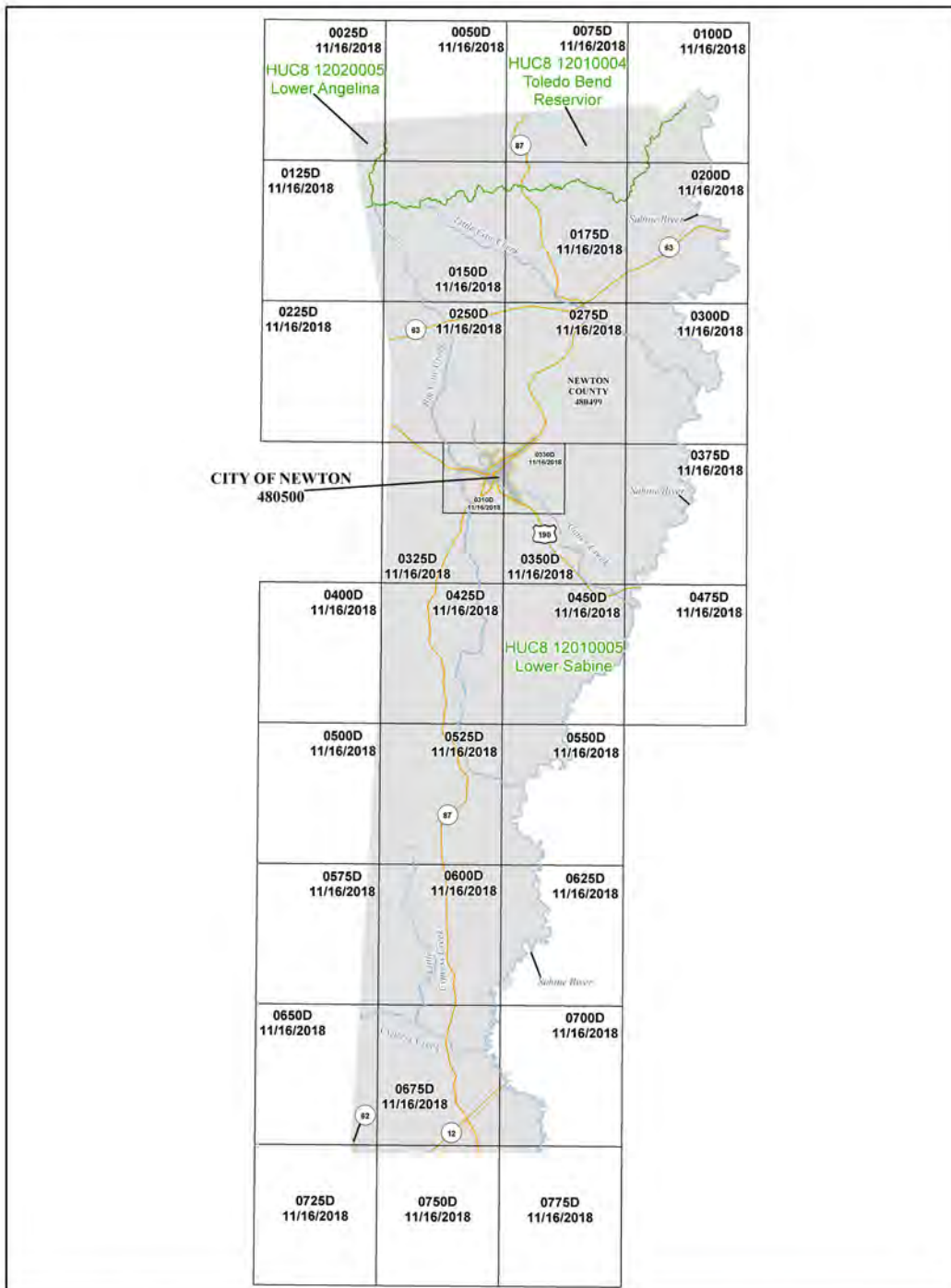
Meeting #3

March 31, 2022

- Sign-In Sheet for Attendance (See Attachment A)
- Meeting started at 2:05 pm
- Judge Kenneth Weeks opened the meeting welcoming everyone. He thanked everyone for their attending. Judge Weeks added he hopes all Team Members were learning as much about the Newton County Hazard Mitigation Plan as he continues to do. He then turned the meeting over to Mark Taylor with Gary R Traylor & Associates.
- Mark welcomed everyone thanking them for their time and again stressing the importance of their role as a Team Member for the Hazard Mitigation Plan Update.
- Mark asked everyone to introduce themselves stating, Traylor and Associates had a new Team Member in attendance. Mr. Taylor also welcomed two virtual attendees, Darrell Myers, Burkeville ISD Superintendent, and LaJuan Addison, Deweyville ISD Superintendent.
- Hazard Mitigation Citizen Survey
 - The "Hazard Mitigation Citizen Survey" that was presented at the March 14th meeting. He explained that the survey had been placed on the Newton County website and the City of Newton website along with a QR code allowing residents easy access directly from their cell phones. Mr. Taylor also informed Team Members the survey information was ran in the March 30, 2022 (Vol. 53 number 31) edition of the Newton County News. He stated some residents should even be able to access the survey by taking a photo of the QR code in the newspaper directly from the cell phones.
 - The information had been posted on social media
- A copy of the survey results as of March 31 at 8:30 am were passed out (See Attachment B)
 - Only 24 responses had been received.
 - Results will be shared
- A copy of the Hazard Mitigation Action Plan Items for Newton County and the City of Newton as discussed in the March 14, 2022, meeting were passed out. Mark Taylor & Katlin Brown went over the items and requested everyone provide their opinion of Action Item Priority. Options were High, Moderate and Low.
 - Mark reminded everyone:
 - There was no right or wrong answer
 - Even "Low" Action Items could be left in the plan.
 - Katlin Brown to forward a result of the survey conducted (See Attachment C)
- Mark asked if anyone had any questions.

- Meeting adjourned at 3:28 pm

APPENDIX E – FLOOD INSURANCE STUDY AND FLOOD INSURANCE RATE MAPS



1 inch = 30,833 feet
 0 8,750 17,500 35,000 52,500 70,000 feet

Map Projection:
 Universal Transverse Mercator (UTM) Zone 15N;
 North American Datum 1983; Vertical Datum: NAVD 88

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
 DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION



NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP INDEX

NEWTON COUNTY, TEXAS and Incorporated Areas

PANELS PRINTED: 0025, 0050, 0075, 0100, 0125, 0150, 0175, 0200,
 0225, 0250, 0275, 0300, 0310, 0325, 0330, 0350, 0375, 0400, 0425,
 0450, 0475, 0500, 0525, 0550, 0575, 0600, 0625, 0650, 0675, 0700,
 0725, 0750, 0775



FEMA

MAP NUMBER
 48351CIND0A

MAP REVISED
 NOVEMBER 16, 2018

FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY



NEWTON COUNTY, TEXAS AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
NEWTON, CITY OF	480500
NEWTON COUNTY, UNINCORPORATED AREAS	480499



FEMA

REVISED:

November 16, 2018

FLOOD INSURANCE STUDY NUMBER
48351CV000A

Version Number 2.3.3.2

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Exhibits

Flood Profiles	<u>Panel</u>
Big Cow Creek	01-05 P
Caney Creek	06-09 P
Sabine River	10-20 P

Published Separately

Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT NEWTON COUNTY, TEXAS

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60.3, *Criteria for Land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as "Post-FIRM" buildings.

1.2 Purpose of this Flood Insurance Study Report

This Flood Insurance Study (FIS) Report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community's regulations.

1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of Newton County, Texas.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the 8-digit Hydrologic Unit Codes (HUC-8) sub-basins affecting each, are shown in Table 1. The Flood Insurance Rate Map (FIRM) panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Newton, City of	480500	12010005	48351C0275D, 48351C0310D, 48351C0330D, 48351C0350D	
Newton County, Unincorporated Areas	480499	12010004, 12010005, 12020005	48351C0025D, 48351C0050D, 48351C0075D, 48351C0100D, 48351C0125D, 48351C0150D, 48351C0175D, 48351C0200D, 48351C0225D, 48351C0250D, 48351C0275D, 48351C0300D, 48351C0310D, 48351C0325D, 48351C0330D, 48351C0350D, 48351C0375D, 48351C0400D, 48351C0425D, 48351C0450D, 48351C0475D, 48351C0500D, 48351C0525D, 48351C0550D, 48351C0575D, 48351C0600D, 48351C0625D, 48351C0650D, 48351C0675D, 48351C0700D, 48351C0725D, 48351C0750D, 48351C0775D	

1.4 Considerations for using this Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1% annual chance flood elevation is also referred to as the Base Flood Elevation

(BFE)); delineations of the 1% annual chance and 0.2% annual chance floodplains; and 1% annual chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 31, “Map Repositories,” within this FIS Report.

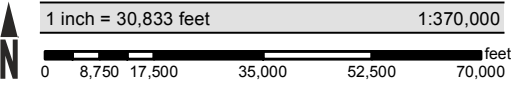
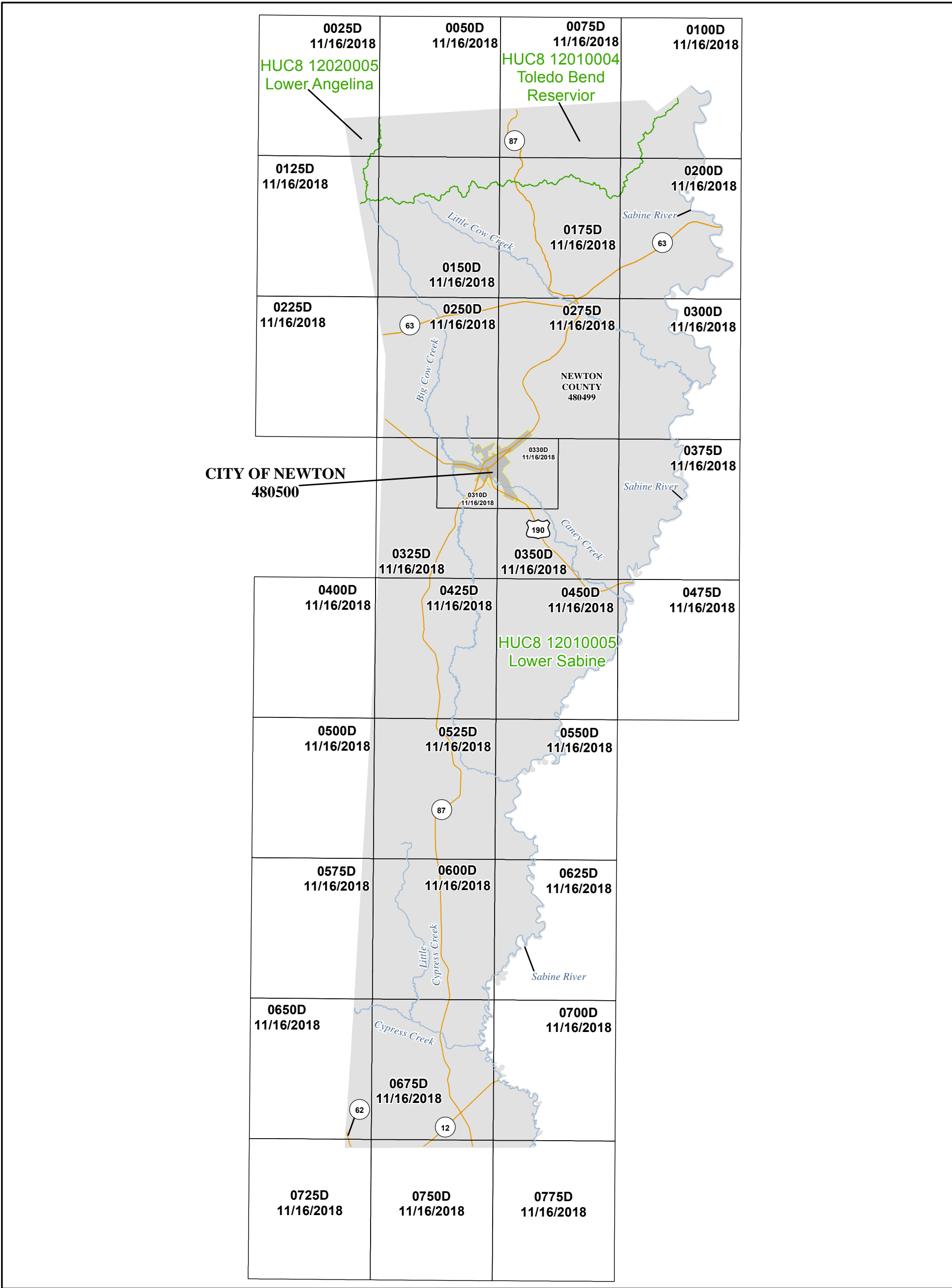
- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

The initial Countywide FIS Report for Newton County became effective on September 21, 1998. Refer to Table 28 for information about subsequent revisions to the FIRMs.

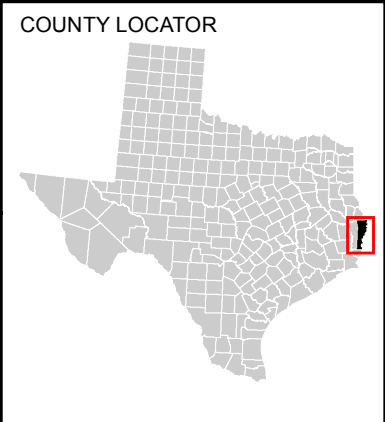
- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at www.fema.gov/online-tutorials.

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Newton County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, flooding sources, watershed boundaries, and United States Geological Survey (USGS) Hydrologic Unit Code – 8 (HUC-8) codes.

Figure 1: FIRM Panel Index



Map Projection:
Universal Transverse Mercator (UTM) Zone 15N;
North American Datum 1983; Vertical Datum: NAVD 88
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)
SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX

NEWTON COUNTY, TEXAS and Incorporated Areas

PANELS PRINTED: 0025, 0050, 0075, 0100, 0125, 0150, 0175, 0200, 0225, 0250, 0275, 0300, 0310, 0325, 0330, 0350, 0375, 0400, 0425, 0450, 0475, 0500, 0525, 0550, 0575, 0600, 0625, 0650, 0675, 0700, 0725, 0750, 0775



FEMA

MAP NUMBER
48351CIND0A
MAP REVISED
NOVEMBER 16, 2018

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

Figure 2: FIRM Notes to Users

<p style="text-align: center;">NOTES TO USERS</p> <p>For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Flood Map Service Center website or by calling the FEMA Map Information eXchange.</p> <p>Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.</p> <p>For community and countywide map dates, refer to Table 28 in this FIS Report.</p> <p>To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.</p>
<p>The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.</p> <p>BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Non-Coastal Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.</p> <p>FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.</p>
<p>FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.</p> <p>PROJECTION INFORMATION: The projection used in the preparation of the map was Universal Transverse Mercator (UTM) Zone 15N. The horizontal datum was NAD83. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.</p>

Figure 2: FIRM Notes to Users

ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

*NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242*

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 31 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided in digital format from the US Census Bureau dated 2006 and 2015; and from the U.S. Department of Agriculture Orthoimagery dated 2015. For information about base maps, refer to Section 6.2 “Base Map” in this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Newton County, Texas, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 28 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Newton County, Texas, effective November 16, 2018.

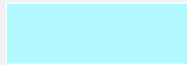
Figure 2: FIRM Notes to Users

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Newton County.

Figure 3: Map Legend for FIRM

SPECIAL FLOOD HAZARD AREAS: *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*



Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)

- Zone A The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
- Zone AE The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone.
- Zone AH The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
- Zone AO The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
- Zone AR The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- Zone A99 The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
- Zone V The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
- Zone VE Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.



Regulatory Floodway determined in Zone AE.

Figure 3: FIRM Notes to Users













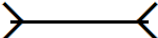
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood.
OTHER AREAS	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.
	Unshaded Zone X: Areas of minimal flood hazard.
FLOOD HAZARD AND OTHER BOUNDARY LINES	
 (ortho) (vector)	Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet
GENERAL STRUCTURES	
 <i>Aqueduct Channel Culvert Storm Sewer</i>	Channel, Culvert, Aqueduct, or Storm Sewer
 <i>Dam Jetty Weir</i>	Dam, Jetty, Weir
	Levee, Dike, or Floodwall
 <i>Bridge</i>	Bridge

Figure 3: FIRM Notes to Users


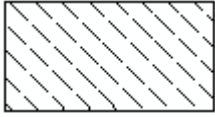

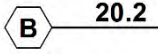
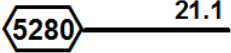
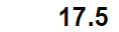
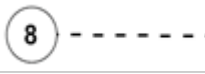


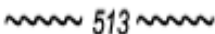










COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): <i>CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.</i>	
 CBRS AREA 09/30/2009	Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.
 OTHERWISE PROTECTED AREA 09/30/2009	Otherwise Protected Area
REFERENCE MARKERS	
	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Coastal Transect
 	<p>Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.</p> <p>Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.</p>
	Base Flood Elevation Line
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)
ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity

Figure 3: FIRM Notes to Users

BASE MAP FEATURES	
 <i>Missouri Creek</i>	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway
	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
⁴² 76 ^{000m} E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1% annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2% annual chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Newton County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1% annual chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 23), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1% and 0.2% annual chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1% annual chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary is shown on the FIRM.

Table 2, “Flooding Sources Included in this FIS Report,” lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 13. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1% annual chance floodplain corresponds to the SFHAs. The 0.2% annual chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

Table 2: Flooding Sources Included in this FIS Report

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Big Cow Creek	Newton County, Unincorporated Areas	Approximately 1.8 miles downstream of FM 2460	Approximately 1.8 miles upstream of State Highway 363	12010005	11.8		N	AE	2014
Big Cow Creek and Zone A Tributaries	Newton County, Unincorporated Areas	Confluence with Sabine River	1 square mile drainage area of all Zone A streams / Newton County Boundary	12010005	182.1		N	A	2014
Caney Creek	Newton, City of; Newton County, Unincorporated Areas	Approximately 3.3 miles upstream of confluence with Caney Creek Tributary N1	Approximately 3.2 miles upstream of State Highway 87	12010005	7.9		N	AE	2014
Caney Creek and Zone A Tributaries	Newton County, Unincorporated Areas	Confluence with Sabine River	1 square mile drainage area of all Zone A streams	12010005	55.3		N	A	2014
Cypress Creek	Newton County, Unincorporated Areas	State Highway 87	Newton County Boundary	12010005	6.9		N	A	2015
Sabine River	Newton County, Unincorporated Areas	Newton / Orange County, Texas Boundary	Toledo Bend Reservoir	12010005	126.7		Y	AE	1998
All other Zone A Streams in Newton County	Newton County, Unincorporated Areas	Confluence with Sabine River or Newton County Boundary	1 square mile drainage area of all Zone A streams	12010004, 12010005	514.5		N	A	2015

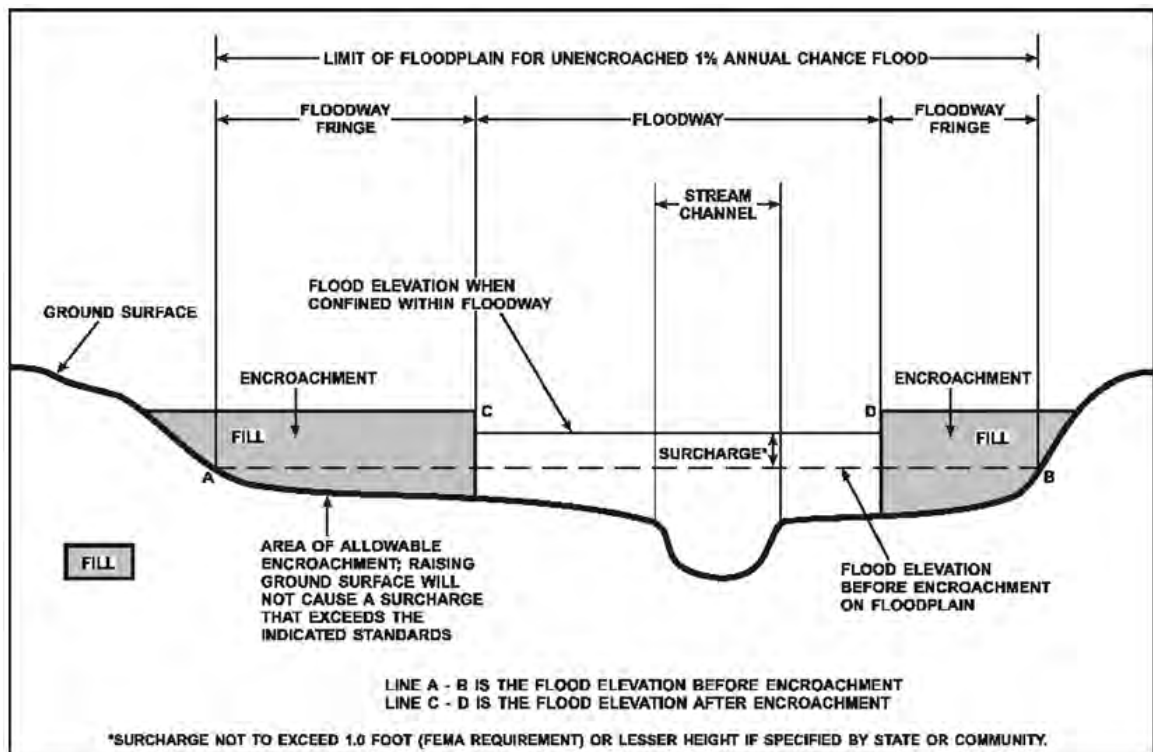
2.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

For purposes of the NFIP, a floodway is used as a tool to assist local communities in balancing floodplain development against increasing flood hazard. With this approach, the area of the 1% annual chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1% annual chance flood. The floodway fringe is the area between the floodway and the 1% annual chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1% annual chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, Federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

Figure 4: Floodway Schematic



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 24, “Floodway Data.”

All floodways that were developed for this Flood Risk Project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1% annual chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1% annual chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. BFEs are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM.

2.4 Non-Encroachment Zones

This section is not applicable to this Flood Risk Project.

2.5 Coastal Flood Hazard Areas

This section is not applicable to this Flood Risk Project.

2.5.1 Water Elevations and the Effects of Waves

This section is not applicable to this Flood Risk Project.

Figure 5: Wave Runup Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

This section is not applicable to this Flood Risk Project.

2.5.3 Coastal High Hazard Areas

This section is not applicable to this Flood Risk Project.

Figure 6: Coastal Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.4 Limit of Moderate Wave Action

This section is not applicable to this Flood Risk Project.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as described in Figure 3. Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in Newton County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Newton, City of	A, AE, X
Newton County, Unincorporated Areas	A, AE, X

3.2 Coastal Barrier Resources System

This section is not applicable to this Flood Risk Project.

Table 4: Coastal Barrier Resources System Information

[Not Applicable to this Flood Risk Project]

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 5 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

Table 5: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Toledo Bend Reservoir	12010004	Sabine River / Toledo Bend Reservoir	Approximately northern eighth of county (roughly north of State Highway 255). These streams flow north and east into Sabine County and Toledo Bend Reservoir.	2,368
Lower Sabine	12010005	Sabine River	Largest Watershed in County, Sabine River is the eastern boundary of Newton County and Texas. Most streams in Newton County generally flow south and east into Sabine River.	2,641
Lower Angelina	12020005	Angelina River	A small portion of northwest Newton County, west of County Road 1118. Includes Dinkhorse Branch and East Prong McKim Creek. Streams flow northwest into Jasper County, TX.	1,947

4.2 Principal Flood Problems

Table 6 contains a description of the principal flood problems that have been noted for Newton County by flooding source.

Table 6: Principal Flood Problems

Flooding Source	Description of Flood Problems
Sabine River	<p>Low lying areas adjacent to the Sabine River are subject to periodic flooding. Official records of past floods show that damaging floods occurred during 1884, 1913, 1945, 1953, 1989, 1991, 1999, 2001 and 2016.</p> <p>Flooding in the spring of 2016 is one of the highest events on record (WEATHER, 2016).</p>

Table 7 contains information about historic flood elevations in the communities within Newton County. Please note this table does not include information from the record flooding that occurred in 2016, as this data had not yet been collected or published when this study was issued preliminary.

Table 7: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (Feet NGVD29)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Big Cow Creek	State Highway 87, 2.5 Miles southwest of Newton	153.2	1953	*	Texas Water Commission Bulletin 6311
Big Cow Creek	State Highway 87, 2.5 Miles southwest of Newton	150.9	1961	*	Texas Water Commission Bulletin 6311
Sabine River	County Road 2147	118.5	1999	*	Sabine River Authority
Sabine River	State Highway 190, 2.1 miles northeast of Bon Wier	69.2	1932	*	Texas Water Commission Bulletin 6311
Sabine River	State Highway 12, just east of Camp House Road	17.2	2005	*	FEMA Hurricane Rita Rapid Response-1606-Dr-TX
Sabine River	State Highway 12, Just north of Deweyville on Texas/Louisiana border	20.4	1944	*	Texas Water Commission Bulletin 6311
Sabine River	State Highway 12, Just north of Deweyville on Texas/Louisiana border	20.4	1957	*	Texas Water Commission Bulletin 6311
Sabine River	State Highway 12, Just north of Deweyville on Texas/Louisiana border	21.4	1950	*	Texas Water Commission Bulletin 6311
Sabine River	State Highway 12, Just north of Deweyville on Texas/Louisiana border	19.9	1950	*	Texas Water Commission Bulletin 6311
Sabine River	Railroad, 2.4 miles southeast of Deweyville	21.6	1913	*	Texas Water Commission Bulletin 6311
Sabine River	Railroad, 2.4 miles southeast of Deweyville	15.9	1922	*	Texas Water Commission Bulletin 6311

Flooding Source	Location	Historic Peak (Feet NGVD29)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Sabine River	Railroad, 2.4 miles southeast of Deweyville	17.2	1932	*	Texas Water Commission Bulletin 6311
Sabine River	Railroad, 2.4 miles southeast of Deweyville	16.4	1938	*	Texas Water Commission Bulletin 6311

* Data not calculated

4.3 Non-Levee Flood Protection Measures

Table 8 contains information about non-levee flood protection measures within Newton County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

Table 8: Non-Levee Flood Protection Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Sabine River	Toledo Bend Reservoir	Dam	At the head of the watershed on the Sabine River	Reservoir provides some degree of protection against lower flows, but does not mitigate major floods such as the 1% annual chance and larger.

4.4 Levees

This section is not applicable to this Flood Risk Project.

Table 9: Levees

[Not Applicable to this Flood Risk Project]

SECTION 5.0 – ENGINEERING METHODS

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2% annual chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of

annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

5.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 13. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges on all detailed study streams and some approximate streams is provided in Table 10. Please refer to the hydrologic TSDN for additional information on discharges for streams not listed in Table 10. Stream gage information is provided in Table 12.

Table 10: Summary of Discharges

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Big Cow Creek	750 meters downstream of confluence with Big Cow Creek Trib 1	345	15,649	21,943	27,419	33,845	*	51,651
Big Cow Creek	At Confluence of Big Cow Creek Trib 1	336	15,373	21,584	26,993	33,347	*	50,986
Big Cow Creek	At confluence of Big Cow Creek Trib 2	333	15,373	21,584	26,993	33,347	*	50,986
Big Cow Creek	At confluence of Trout Creek (N)	252	13,143	18,467	23,100	28,549	*	43,697
Big Cow Creek	At approximately 5 kilometers downstream of FM 2460	247	12,906	18,160	22,736	28,125	*	43,134
Big Cow Creek	Zone Break	247	13,143	18,467	23,100	28,549	*	43,697
Big Cow Creek	At approximately 1.5 kilometers upstream of FM 2460	153	9,437	14,257	18,688	23,867	*	39,232
Big Cow Creek	At approximately 3 kilometers upstream of FM 246	152	9,349	14,257	18,688	23,867	*	39,232
Big Cow Creek	At confluence of White Oak Creek	152	9,437	14,257	18,688	23,867	*	39,232
Big Cow Creek	At confluence of George Lewis Branch	145	9,339	14,257	18,688	23,867	*	39,232

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Big Cow Creek	At approximately 2.6 kilometers downstream of FM 363	142	9,339	14,257	18,688	23,867	*	39,232
Big Cow Creek	Zone Break	141	9,339	14,257	18,688	23,867	*	39,232
Big Cow Creek	At approximately 2 kilometers upstream of FM 363	141	9,339	14,257	18,688	23,867	*	39,232
Big Cow Creek	At approximately 1 kilometer upstream of FM 363	141	9,339	14,257	18,688	23,867	*	39,232
Big Cow Creek	At confluence of Walkers Lake Creek	133	9,338	14,257	18,688	23,867	*	29,232
Big Cow Creek	At confluence of Melhones Creek	66	6,377	9,053	11,390	14,168	*	22,015
Big Cow Creek	At confluence of Hunter Creek	37	4,409	6,209	7,769	9,623	*	14,830
Big Cow Creek	At confluence of Lewis Gully	35	4,353	6,140	7,690	9,536	*	14,731
Big Cow Creek	At confluence of Dry Creek (Near Farrsville)	22	3,721	5,322	6,724	8,407	*	13,168
Big Cow Creek	At confluence of Crenshaw Branch	12	3,721	5,322	6,724	8,407	*	13,168
Caney Creek	At downstream side of US Highway 190	47	3,502	4,737	5,763	6,933	*	10,072

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Caney Creek	At approximately 2.5 kilometers upstream of FM 2626	29	2,529	3,396	4,109	4,920	*	7,085
Caney Creek	At confluence of Caney Creek Tributary N1	22	2,121	2,836	3,424	4,308	*	5,865
Caney Creek	At approximately 2 miles downstream of US Hwy 190 (Rusk Street)	21	2,137	2,866	3,465	4,308	*	5,968
Caney Creek	At approximately 800 meters downstream of US Hwy 190 (Rusk Street)	20	2,083	2,795	3,381	4,049	*	5,835
Caney Creek	Downstream of Court Street	19	2,018	2,708	3,277	3,925	*	5,660
Caney Creek	At approximately 2 miles upstream of Court Street	16	1,869	2,505	3,028	3,625	*	5,222
Caney Creek	At approximately 2 miles upstream of State Highway 87	15	1,749	2,341	2,827	3,382	*	4,863
Caney Creek	At confluence of Martin Creek	4.2	846	1,112	1,326	1,572	*	2,219
Caney Creek	At approximately 500 meters upstream of Private Road 5006	0.92	341	433	504	587	*	796

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Cypress Creek	At confluence of Blacks Marsh Creek	110	5,851	7,916	9,638	11,593	*	16,817
Cypress Creek	Upstream of State Highway 87	110	5,993	8,107	9,871	11,872	*	17,218
Cypress Creek	At confluence of Little Cypress Creek	94	5,308	7,171	8,721	10,479	*	15,172
Little Cow Creek	At approximately 7.5 kilometers downstream of confluence of Little Cow Creek Trib 1	130	10,017	14,313	18,101	22,934	*	35,511
Little Cow Creek	At approximately 600 meters downstream of FM 1414	120	10,051	14,420	18,286	22,934	*	36,190
Little Cow Creek	At confluence of Swindler Creek	110	9,685	13,898	17,626	22,110	*	34,906
Little Cow Creek	At confluence of Plum Creek	110	9,471	13,589	17,234	21,617	*	34,125
Little Cow Creek	At confluence of Yellow Bayou	69	7,081	10,112	12,778	15,977	*	25,073
Little Cow Creek	At confluence of McGraw Creek	38	4,667	6,603	8,288	12,723	*	15,983
Little Cow Creek	At approximately 1.4 kilometers upstream of Little Cow Creek	34	4,570	6,488	8,163	12,723	*	15,863
Little Cow Creek	At confluence of Wiergate Creek	30	4,290	6,088	7,658	12,723	*	14,880

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Little Cow Creek	At approximately 800 meters upstream of FM 1415	27	5,612	8,044	10,178	12,723	*	19,916
Little Cow Creek	At confluence of Bear Branch	20	4,722	6,754	8,535	10,661	*	16,663
Little Cow Creek	At confluence of Deep Creek	12	3,502	4,973	6,252	7,777	*	12,058
Little Cow Creek	Upstream of County Road 1090	5.6	2,188	3,071	3,832	4,739	*	7,261
Little Cypress Creek	At confluence with Cypress Creek	14	1,616	2,128	2,542	3,007	*	4,225
Sabine River	At State Highway 12	9,329	66,100	*	98,700	113,800	*	150,000
Sabine River	At U.S. Highway 190	8,229	61,000	*	94,000	110,000	*	148,000
Sabine River	At State Highway 63	7,482	57,000	*	90,000	105,000	*	144,000
Sabine River	At Toledo Bend Dam ¹	7,178	39,000	*	72,000	87,000	*	126,000

* Not calculated for this Flood Risk Project

¹ Adjusted for discharges from hydropower tailrace

Figure 7: Frequency Discharge-Drainage Area Curves

[Not Applicable to this Flood Risk Project]

Table 11: Summary of Non-Coastal Stillwater Elevations

[Not Applicable to this Flood Risk Project]

Table 12: Stream Gage Information used to Determine Discharges

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Big Cow Creek	08029500	USGS	Big Cow Creek near Newton, TX	128	4/1/1922	3/21/2012
Cypress Creek	08030000	USGS	Cypress Creek near Buna, TX	83.3	4/1/1952	10/5/1984
Sabine River	08025360	USGS	Sabine River at Toledo Bend near Burkeville, TX	7,178	1/6/1972	11/2/2009
Sabine River	08026000	USGS	Sabine River near Burkeville, TX	7,482	5/1/1884	11/3/2009
Sabine River	08030500	USGS	Sabine River near Bon Wier, TX	8,229	5/1/1884	11/4/2009
Sabine River	08028500	USGS	Sabine River near Ruliff, TX	9,329	5/1/1884	11/8/2009

5.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Base flood elevations on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The

hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 6.3), selected cross sections are also listed on Table 24, "Floodway Data."

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 13. Roughness coefficients are provided in Table 14. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

Table 13: Summary of Hydrologic and Hydraulic Analyses

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Big Cow Creek	Approximately 1.8 miles downstream of FM 2460	Approximately 1.8 miles upstream of FM 363	PeakFQ	HEC-RAS 4.1	8/29/2014	AE	
Big Cow Creek	Approximately 1.8 miles upstream of FM 363	Approximately 1.8 miles upstream of State Highway 255	PeakFQ	HEC-RAS 4.1	2/27/2015	A	Effects of hydraulic structures were not considered in the model.
Big Cow Creek	Approximately 0.5 miles downstream of confluence of Big Cow Creek Tributary 1	Approximately 1.8 miles downstream of FM 2460	PeakFQ	HEC-RAS 4.1	2/27/2015	A	Effects of hydraulic structures were not considered in the model.
Big Cow Creek Zone A Tributaries	Confluence with Sabine River	1 square mile drainage area of all Zone A streams / Newton County Boundary	2009 USGS Texas State Regression Equations	HEC-RAS 4.1	2/27/2015	A	Effects of hydraulic structures were not considered in the model.
Caney Creek	Approximately 3.3 miles upstream of confluence with Caney Creek Tributary N1	Approximately 3.2 miles upstream of State Highway 87	2009 USGS Texas State Regression Equations	HEC-RAS 4.1	8/29/2014	AE	
Caney Creek and Zone A Tributaries	Confluence with Sabine River	1 square mile drainage area of all Zone A streams	2009 USGS Texas State Regression Equations	HEC-RAS 4.1	8/29/2014	A	Effects of hydraulic structures were not considered in the model.
Cypress Creek	State Highway 87	Newton County Boundary	PeakFQ	HEC-RAS 4.1	2/27/2015	A	Effects of hydraulic structures were not considered in the model.
Sabine River	Newton / Orange County, Texas Boundary	Toledo Bend Reservoir	Log Pearson Type III Frequency Analysis	HEC-2	9/21/1998	AE w/ Floodway	

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
All other Zone A Streams in Newton County	Confluence with Sabine River or Newton County Boundary	1 square mile drainage area of all Zone A streams	2009 USGS Texas State Regression Equations	HEC-RAS 4.1	2/27/2015	A	Effects of hydraulic structures were not considered in the model.

Table 14: Roughness Coefficients

Flooding Source	Channel “n”	Overbank “n”
Sabine River	0.025-0.035	0.050-0.140
All Other Streams in Newton County	0.03-0.045	0.045-0.1

5.3 Coastal Analyses

This section is not applicable to this Flood Risk Project.

Table 15: Summary of Coastal Analyses

[Not Applicable to this Flood Risk Project]

5.3.1 Total Stillwater Elevations

This section is not applicable to this Flood Risk Project.

Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas

[Not Applicable to this Flood Risk Project]

Table 16: Tide Gage Analysis Specifics

[Not Applicable to this Flood Risk Project]

5.3.2 Waves

This section is not applicable to this Flood Risk Project.

5.3.3 Coastal Erosion

This section is not applicable to this Flood Risk Project.

5.3.4 Wave Hazard Analyses

This section is not applicable to this Flood Risk Project.

Table 17: Coastal Transect Parameters

[Not Applicable to this Flood Risk Project]

Figure 9: Transect Location Map

[Not Applicable to this Flood Risk Project]

5.4 Alluvial Fan Analyses

This section is not applicable to this Flood Risk Project.

Table 18: Summary of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

Table 19: Results of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

SECTION 6.0 – MAPPING METHODS

6.1 Vertical and Horizontal Control

All FIS Reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS Reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS Reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey (NGS) at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov.

The datum conversion locations and values that were calculated for Newton County are provided in Table 20.

Table 20: Countywide Vertical Datum Conversion

[Not Applicable to this Flood Risk Project]

A countywide conversion factor was not generated for Newton County. Instead the vertical datum conversion factor for the Sabine River was taken from the FIS for Vernon Parish, Louisiana. Calculations for the vertical offsets on a stream by stream basis are depicted in Table 21.

Table 21: Stream-Based Vertical Datum Conversion

Flooding Source	Average Vertical Datum Conversion Factor (feet)
Sabine River	-0.27

6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA's FIRM database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA's *Guidelines and Standards for Flood Risk Analysis and Mapping*, www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping.

Base map information shown on the FIRM was derived from the sources described in Table 22.

Table 22: Base Map Sources

Data Type	Data Provider	Data Date	Data Scale	Data Description
Digital Orthophoto	USDA	2015	1:12,000	Color orthoimagery was provided for the county
Political boundaries	U.S. Census Bureau	2006	1:12,000	TIGER Municipal and county boundaries
Transportation Features	U.S. Census Bureau	2015	1:12,000	TIGER Roads and railroads

6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 23.

In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

The floodway widths presented in this FIS Report and on the FIRM were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. Table 23 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 24, "Floodway Data."

Table 23: Summary of Topographic Elevation Data used in Mapping

Community	Flooding Source	Source for Topographic Elevation Data					
		Description	Scale	Contour Interval	RMSE _z	Accuracy _z	Citation
Newton County	All within HUC 12010004 and most within HUC 12010005	Light Detection and Ranging data (LiDAR)	N/A	N/A	7.4 cm	12.2 cm	Harden 2011
Newton County	Rest of Newton County	USGS 10 meter DEM	N/A	N/A	N/A	N/A	USGS 2013

BFEs shown at cross sections on the FIRM represent the 1% annual chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in areas of ponding, and other areas with static base flood elevations.

Table 24: Floodway Data

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	172,010	16,400	124,040	0.9	18.2	18.2	19.0	0.8
B	201,590	11,688	89,011	1.3	22.8	22.8	23.7	0.9
C	216,638	16,133	127,750	0.9	24.0	24.0	24.9	0.9
D	228,488	12,843	124,052	0.9	24.8	24.8	25.8	1.0
E	251,038	10,029	81,172	1.0	26.8	26.8	27.7	0.9
F	273,838	12,400	108,133	1.1	32.3	32.3	33.2	0.9
G	306,438	12,635	120,096	0.9	36.7	36.7	37.4	0.7
H	339,488	8,388	101,090	1.1	42.5	42.5	43.3	0.8
I	377,438	12,699	126,882	0.9	46.2	46.2	47.1	0.9
J	406,238	8,952	77,974	1.5	51.9	51.9	52.6	0.7
K	428,238	11,285	95,337	1.2	55.9	55.9	56.8	0.9
L	459,738	16,794	151,302	0.8	60.2	60.2	61.0	0.8
M	478,238	13,650	116,361	1.0	63.1	63.1	63.7	0.6
N	497,038	16,660	92,950	1.2	66.2	66.2	67.0	0.8
O	512,748	16,200	28,321	3.9	71.6	71.6	72.1	0.5
P	521,248	15,076	106,989	1.0	73.0	73.0	73.7	0.7
Q	534,898	8,673	33,714	3.3	74.3	74.3	75.1	0.8
R	559,088	10,875	122,241	0.9	79.9	79.9	80.9	1.0
S	593,608	15,200	112,839	1.0	85.5	85.5	86.4	0.9
T	617,288	8,300	83,741	1.3	88.5	88.5	89.5	1.0
U	641,668	7,986	42,303	2.6	91.7	91.7	92.6	0.9

¹ Feet above mouth

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY
NEWTON COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: SABINE RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
V	670,108	7,487	67,682	16.0	96.4	96.4	97.3	0.9
W	699,238	8,785	91,745	1.2	99.9	99.9	100.9	1.0
X	718,208	8,625	82,251	1.3	104.9	104.9	105.6	0.7
Y	736,606	2,300	26,746	3.9	106.9	106.9	107.5	0.6
Z	768,126	7,286	68,868	1.5	111.1	111.1	111.9	0.8
AA	783,886	7,885	69,479	1.3	112.9	112.9	113.7	0.8
AB	804,286	3,192	24,486	3.6	115.2	115.2	116.2	1.0
AC	816,500	*	*	*	119.7	*	*	*

¹ Feet above mouth

* Data unavailable

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, TEXAS

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: SABINE RIVER

Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams

[Not Applicable to this Flood Risk Project]

6.4 Coastal Flood Hazard Mapping

This section is not applicable to this Flood Risk Project.

Table 26: Summary of Coastal Transect Mapping Considerations

[Not Applicable to this Flood Risk Project]

6.5 FIRM Revisions

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 31, “Map Repositories”).

6.5.1 Letters of Map Amendment

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA.

To obtain an application for a LOMA, visit www.fema.gov/floodplain-management/letter-map-amendment-loma and download the form “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill”. Visit the “Flood Map-Related Fees” section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at www.fema.gov/online-tutorials.

For more information about how to apply for a LOMA, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

6.5.2 Letters of Map Revision Based on Fill

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA’s determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same manner as that for a LOMA, by visiting www.fema.gov/floodplain-management/letter-map-amendment-loma for the “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill” or by calling the FEMA Map Information eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the “Flood Map-Related Fees” section.

A tutorial for LOMR-F is available at www.fema.gov/online-tutorials.

6.5.3 Letters of Map Revision

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/mt-2-application-forms-and-instructions and download the form “MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision”. Visit the “Flood Map-Related Fees” section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the Newton County FIRM are listed in Table 27.

Table 27: Incorporated Letters of Map Change

[Not Applicable to this Flood Risk Project]

6.5.4 Physical Map Revisions

A PMR is an official republication of a community’s NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community’s chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit www.fema.gov and visit the “Flood Map Revision Processes” section.

6.5.5 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA

to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit www.fema.gov to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

6.5.6 Community Map History

The current FIRM presents flooding information for the entire geographic area of Newton County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBM) and/or Flood Boundary and Floodway Maps (FBFM) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 28, “Community Map History.” A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.
- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or “pending” (for Preliminary FIS Reports) is shown. If the community is listed in Table 28 but not identified on the map, the community is treated as if it were unmapped.
- *Initial FHBM Effective Date* is the effective date of the first Flood Hazard Boundary Map (FHBM). This date may be the same date as the Initial NFIP Map Date.
- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.
- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community.
- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as Physical Map Revisions (PMR) of FIRM panels within the county are completed, the FIRM Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all the panels within that community.

The initial effective date for the Newton County FIRMs in countywide format was September 21, 1998.

Table 28: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Newton, City of ¹	6/7/1974	6/7/1974	6/4/1976	9/21/1998	11/16/2018
Newton County, Unincorporated Areas	7/5/1977	7/5/1977	None	4/1/1987	9/21/1998 11/16/2018

¹ This community did not have a FIRM prior to the first countywide FIRM for Newton County

SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

7.1 Contracted Studies

Table 29 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

Table 29: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Big Cow Creek (Zone AE)	11/16/2018	RAMPP	HSFEHQ-09-D-0369	August 2014	Newton County, Unincorporated Areas
Big Cow Creek and Zone A Tributaries	11/16/2018	RAMPP	HSFEHQ-09-D-0369	February 2015	City of Newton; Newton County, Unincorporated Areas
Caney Creek (Zone AE)	11/16/2018	RAMPP	HSFEHQ-09-D-0369	August 2014	City of Newton; Newton County, Unincorporated Areas
Caney Creek and Zone A Tributaries	11/16/2018	RAMPP	HSFEHQ-09-D-0369	August 2014	City of Newton; Newton County, Unincorporated Areas
Cypress Creek	11/16/2018	RAMPP	HSFEHQ-09-D-0369	February 2015	Newton County, Unincorporated Areas
Sabine River	9/21/1998	Turner Collie & Branden Inc.	EMW-93-C-4126	September 1998	Newton County, Unincorporated Areas
All other Zone A Streams in Newton County	11/16/2018	RAMPP	HSFEHQ-09-D-0369	February 2015	City of Newton; Newton County, Unincorporated Areas

7.2 Community Meetings

The dates of the community meetings held for this Flood Risk Project and previous Flood Risk Projects are shown in Table 30. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CCO), Scoping, Discovery, etc.), but all meetings represent opportunities for FEMA, community officials, study contractors, and other invited guests to discuss the planning for and results of the project.

Table 30: Community Meetings

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Newton, City of	9/21/1998	2/26/1996	CCO	FEMA, and the community
	3/16/2018	7/10/2012	Discovery	FEMA, the community, the study contractor, the Sabine River Authority (SRA) and the State NFIP office
		2/17/2017	CCO	FEMA, the community, and the study contractor
Newton County Unincorporated Areas	9/21/1998	2/26/1996	CCO	FEMA, the community, the study contractor, and USACE
	3/16/2018	7/10/2012	Discovery	FEMA, the community, the study contractor, SRA and the State NFIP office
		4/24/2013	Kick-Off	FEMA, the community, the study contractor, and SRA
		6/16/2015	Flood Risk Review	FEMA, the community, and the study contractor
		2/17/2017	CCO	FEMA, the community, and the study contractor

SECTION 8.0 – ADDITIONAL INFORMATION

Information concerning the pertinent data used in the preparation of this FIS Report can be obtained by submitting an order with any required payment to the FEMA Engineering Library. For more information on this process, see www.fema.gov.

The additional data that was used for this project includes the FIS Report and FIRM that were previously prepared for Newton County and Incorporated Areas, (FEMA 1998). Technical data for more recent FEMA flood studies in Newton County can be found in the Technical Data Support Notebooks (FEMA 2014 and FEMA 2015). In addition the National Weather Service prepared reports regarding flooding on the Sabine River in 1999 and 2001 (NWS 1999 and 2001).

Table 31 is a list of the locations where FIRMs for Newton County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

Table 31: Map Repositories

Community	Address	City	State	Zip Code
Newton, City of	City Hall, 101 West North Street	Newton	TX	75966
Newton County, Unincorporated Areas	County Court House 110 Court Street	Newton	TX	75966

The National Flood Hazard Layer (NFHL) dataset is a compilation of effective FIRM databases and LOMCs. Together they create a GIS data layer for a State or Territory. The NFHL is updated as studies become effective and extracts are made available to the public monthly. NFHL data can be viewed or ordered from the website shown in Table 32.

Table 32 contains useful contact information regarding the FIS Report, the FIRM, and other relevant flood hazard and GIS data. In addition, information about the State NFIP Coordinator and GIS Coordinator is shown in this table. At the request of FEMA, each Governor has designated an agency of State or territorial government to coordinate that State's or territory's NFIP activities. These agencies often assist communities in developing and adopting necessary floodplain management measures. State GIS Coordinators are knowledgeable about the availability and location of State and local GIS data in their state.

Table 32: Additional Information

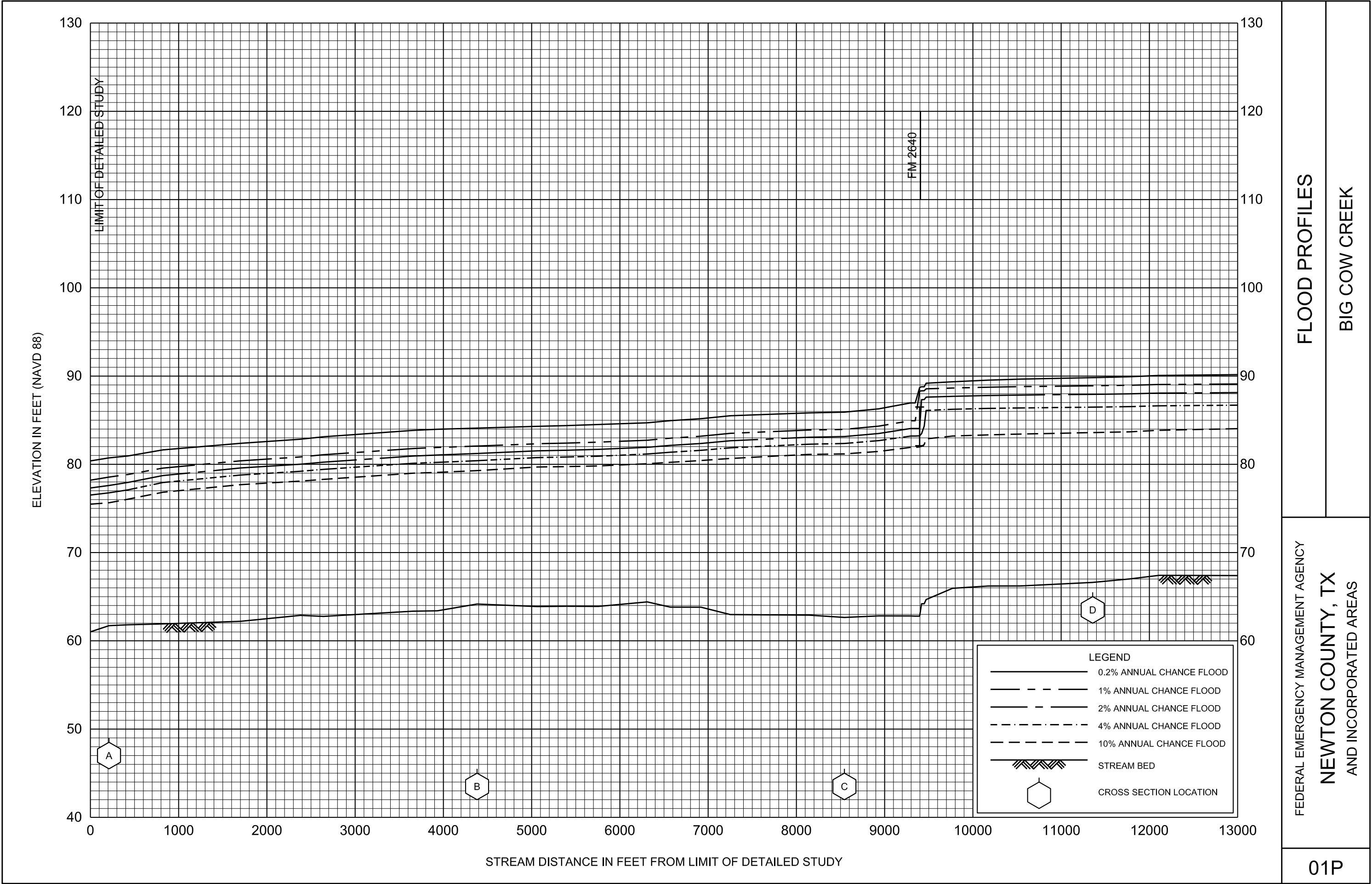
FEMA and the NFIP	
FEMA and FEMA Engineering Library website	www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/engineering-library
NFIP website	www.fema.gov/national-flood-insurance-program
NFHL Dataset	msc.fema.gov
FEMA Region VI	RAMPP Regional Support Center 6, 723 S. Interstate 35E, Suite 230, Denton, TX 76205 (940) 735-3334
Other Federal Agencies	
USGS website	www.usgs.gov
Hydraulic Engineering Center website	www.hec.usace.army.mil
State Agencies and Organizations	
State NFIP Coordinator	Michael Segner Texas Water Development Board 1700 North Congress Avenue P.O. Box 13231 Austin, TX 78711-3231 512-463-3509 michael.segner@twddb.state.tx.us
State GIS Coordinator	Mike Ouimet Texas Division of Emergency Management 300 West 15th Street P.O. Box 13564 Austin, Texas 78711-3564 512-305-9076 mike.ouimet@dir.state.tx.us Rob Aanstoos Texas Division of Emergency Management 300 West 15th Street P.O. Box 13564 Austin, Texas 78711-3564 512-463-7314 rob.aanstoos@dir.state.tx.us

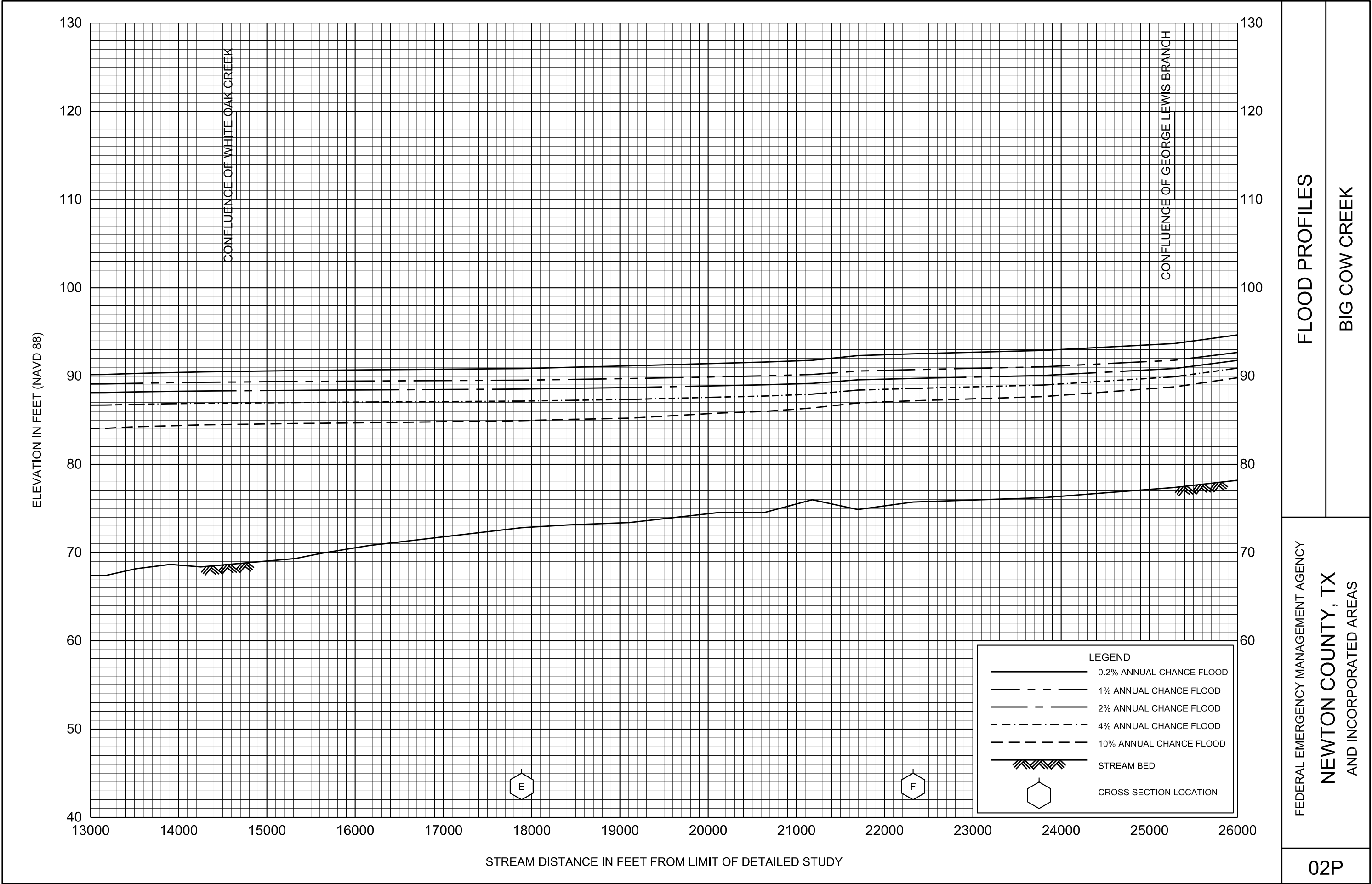
SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES

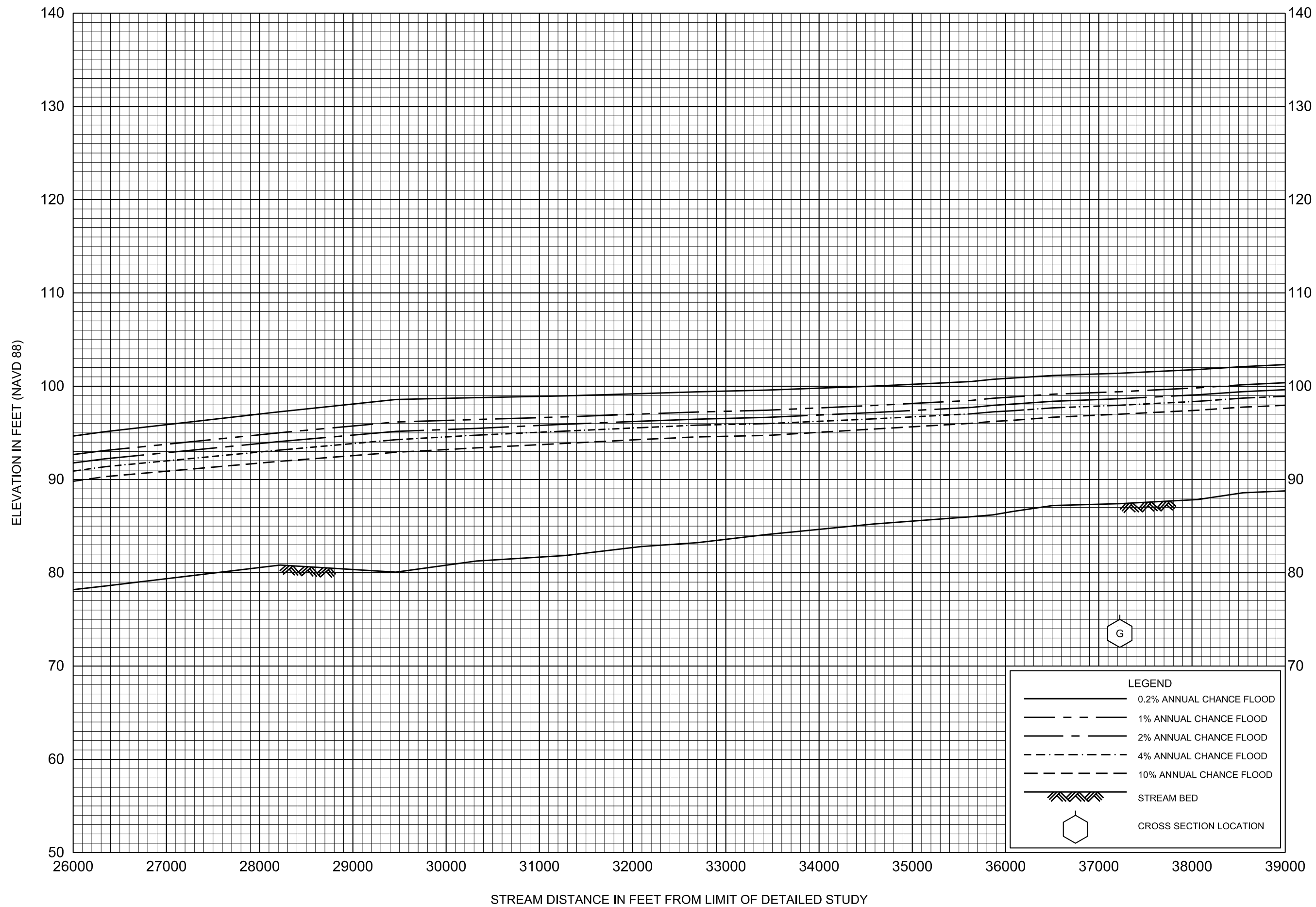
Table 33 includes sources used in the preparation of and cited in this FIS Report as well as additional studies that have been conducted in the study area.

Table 33: Bibliography and References

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FEMA 1998	Federal Emergency Management Agency	<i>Flood Insurance Study, Newton County, Texas, and Incorporated Areas</i>		Washington, D.C.	September 1998	FEMA Flood Map Service Center msc.fema.gov
FEMA 2014	Federal Emergency Management Agency	<i>Lower Sabine Watershed Floodplain Mapping TSDN, Phase 2A</i>		Washington, D.C.	August 2014	FEMA Engineering Library hazards.fema.gov
FEMA 2015	Federal Emergency Management Agency	<i>Lower Sabine Watershed Floodplain Mapping TSDN, Phase 2B</i>		Washington, D.C.	August 2014	FEMA Engineering Library hazards.fema.gov
HARDIN 2011	M.J. Harden Associates	<i>LiDAR Data for Newton, Sabine and Shelby Counties, TX</i>		Mission, KS	March 2011	
NWS, 1999	National Weather Service	<i>The February 1999 Sabine River Flood</i>		Lake Charles, LA	March 2001	srh.noaa.gov
NWS, 2001	National Weather Service	<i>Sabine River Flood, March 2001</i>		Lake Charles, LA	March 2001	srh.noaa.gov
USGS 2013	U.S. Department of Interior, Geological Survey	<i>National Elevation Dataset 1/3 Arc Second DEM</i>		Washington, D.C.	May 2013	nationalmap.gov/viewer.html
WEATHER 2016	The Weather Channel	<i>Sabine River Crests in Deweyville, Texas, But Problems Remain</i>		Atlanta, GE	March 2016	weather.com







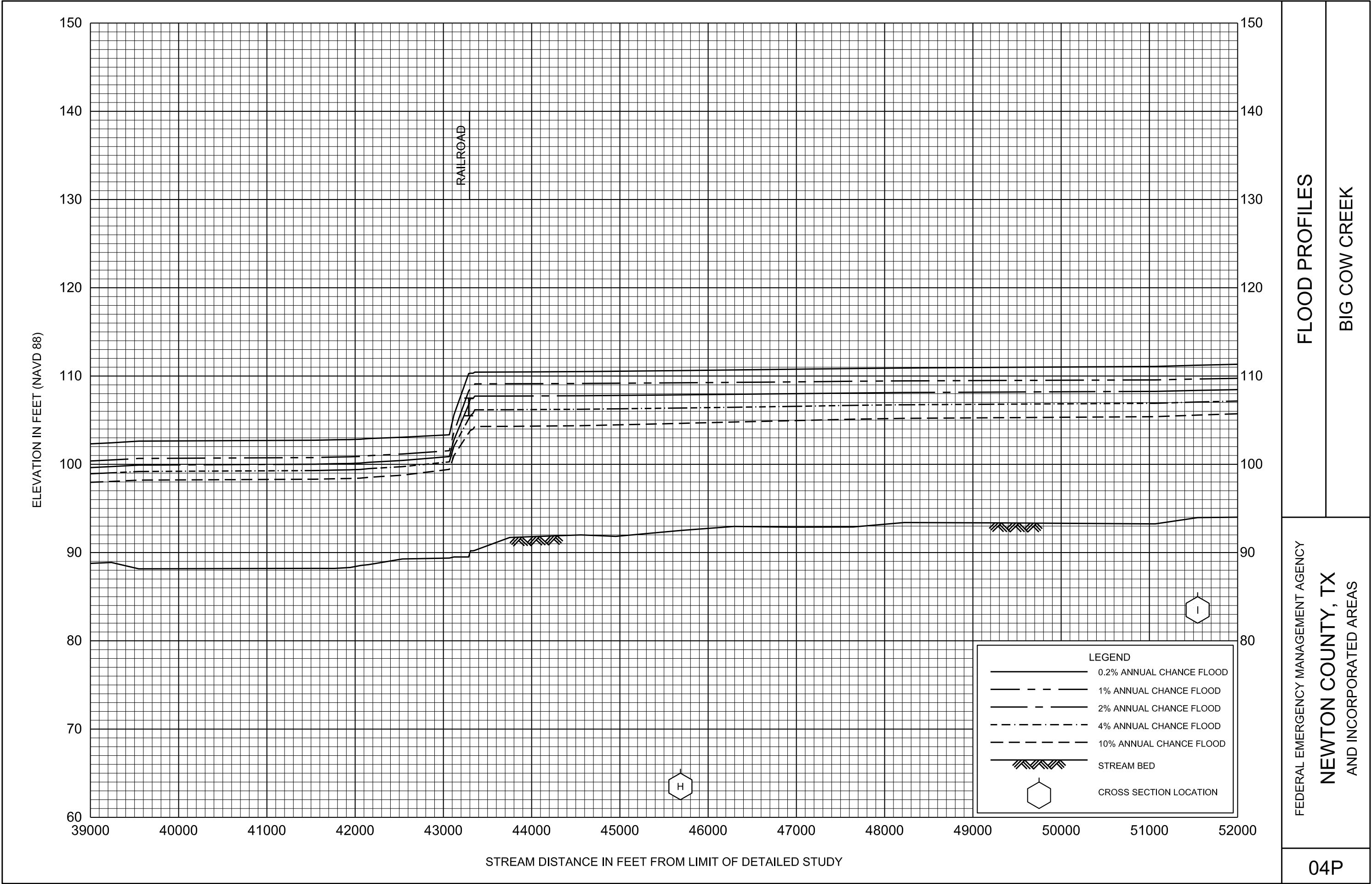
FLOOD PROFILES

BIG COW CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, TX
AND INCORPORATED AREAS

03P

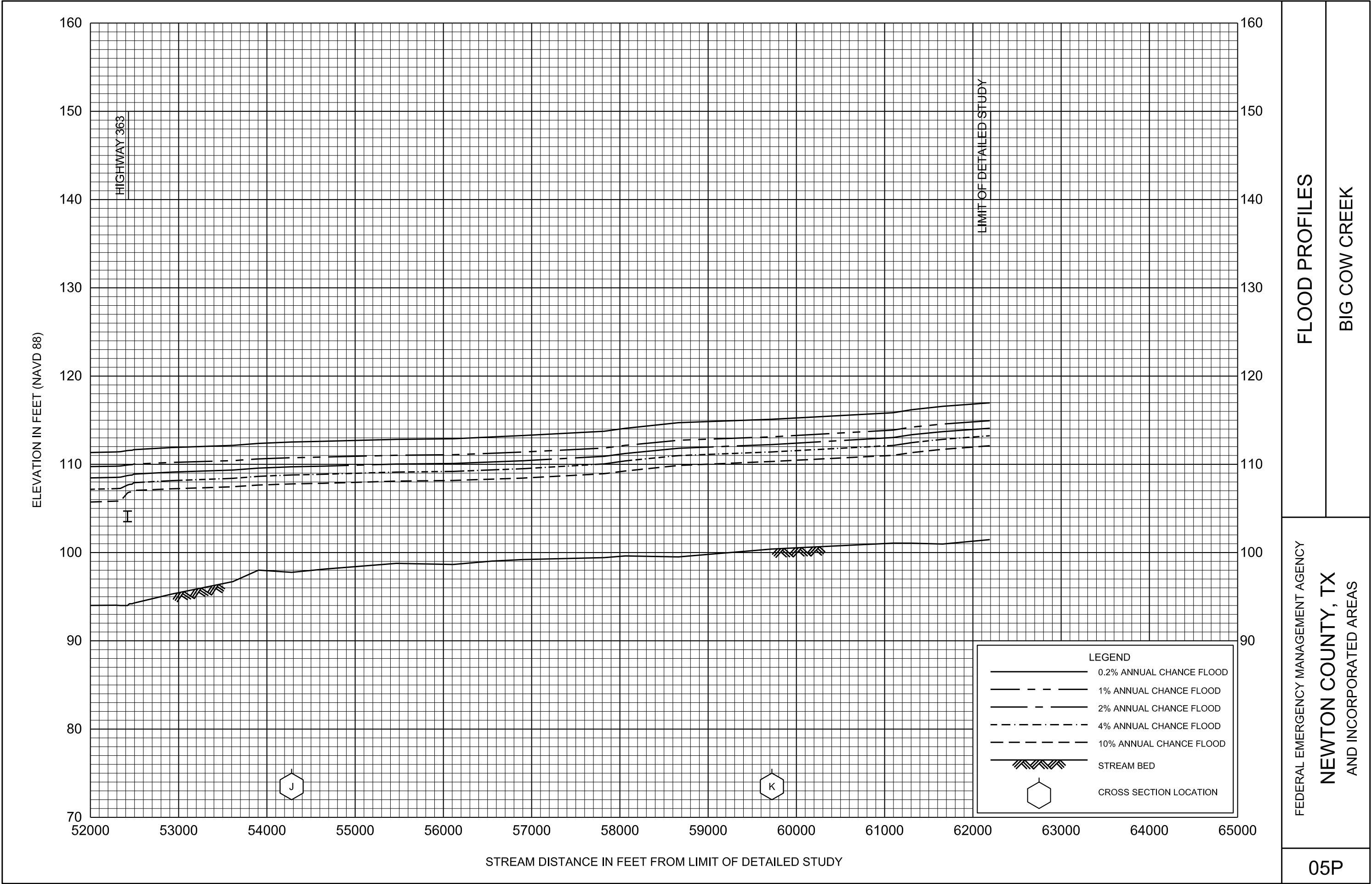


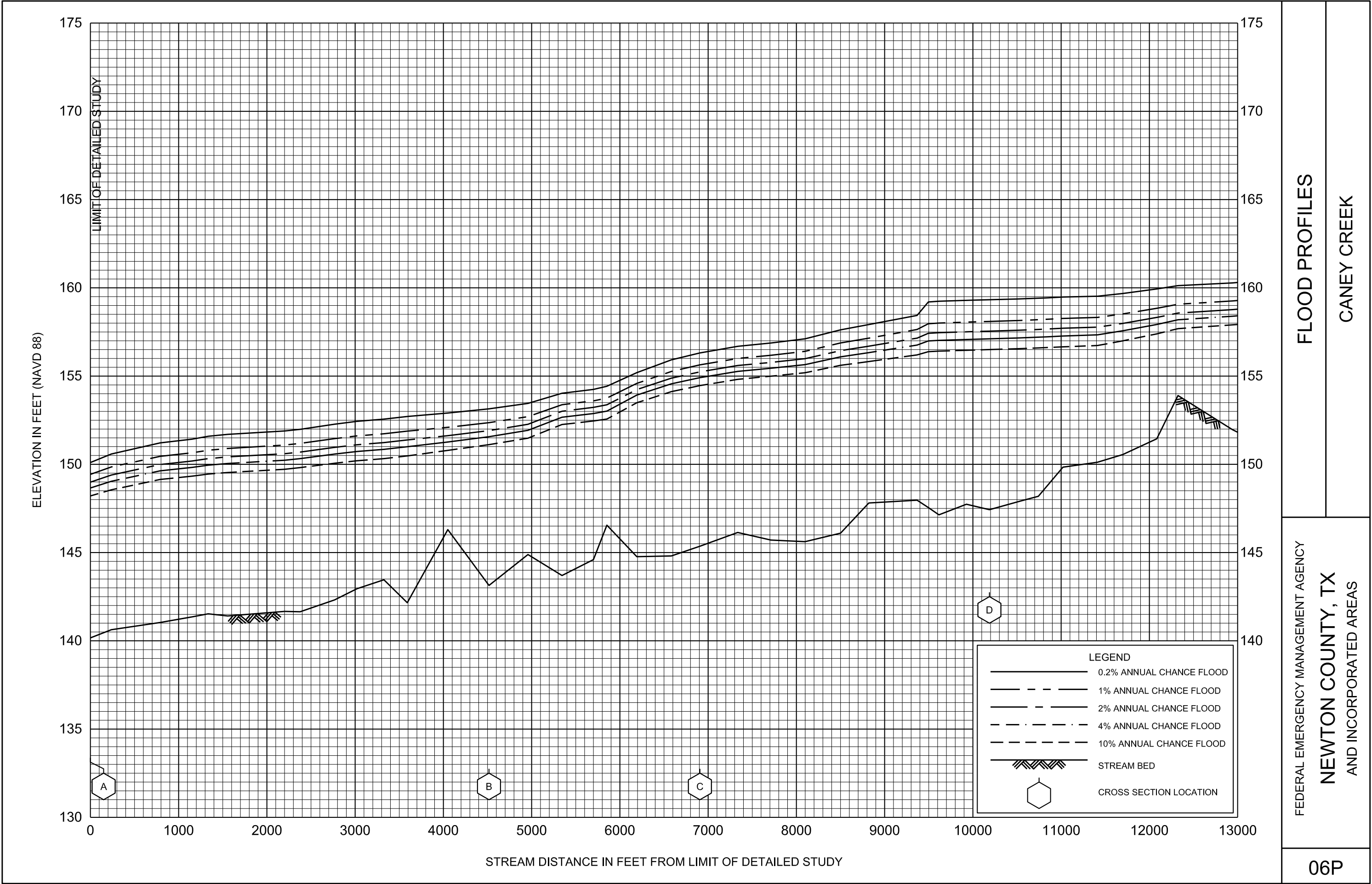
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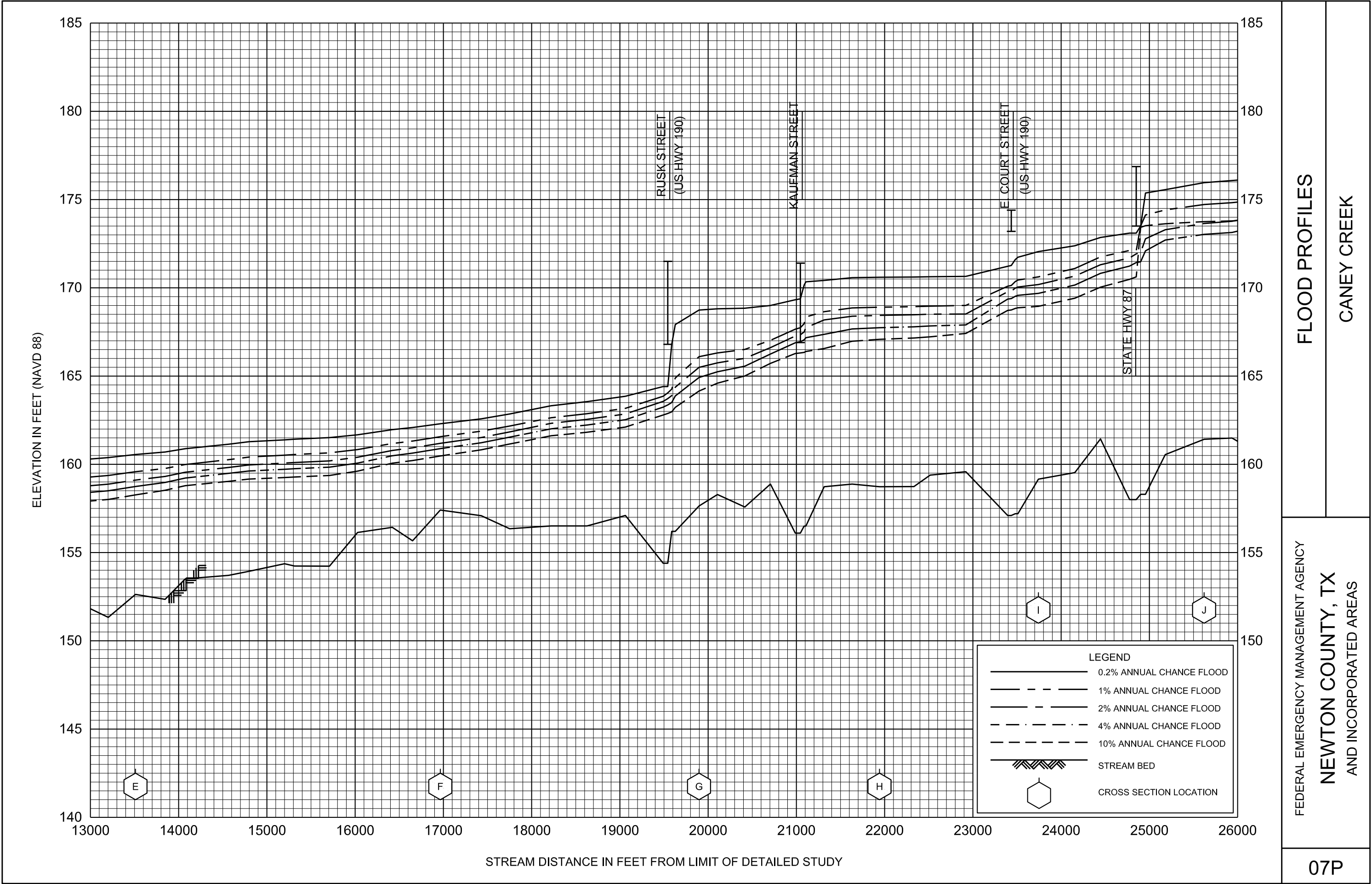
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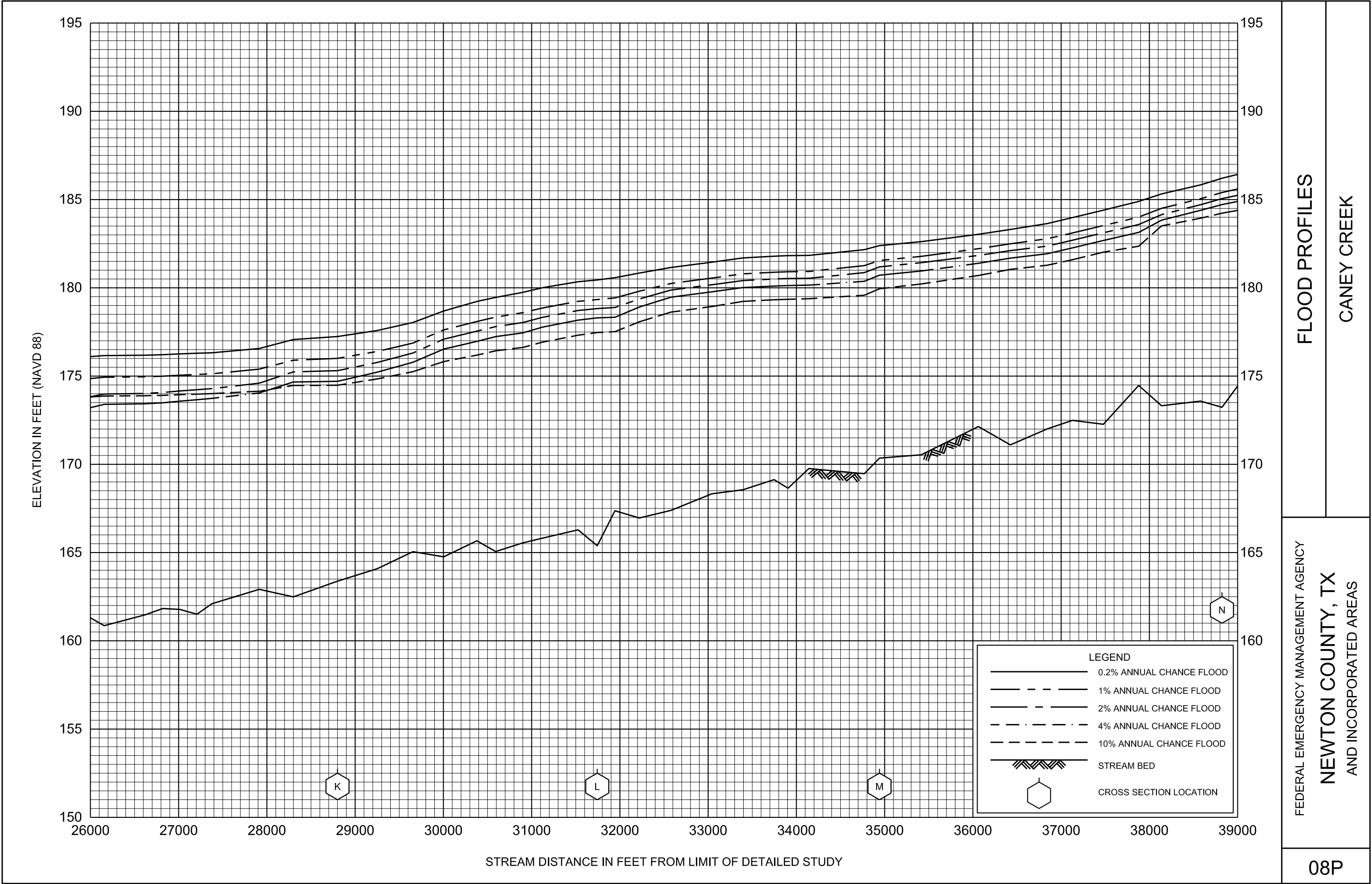
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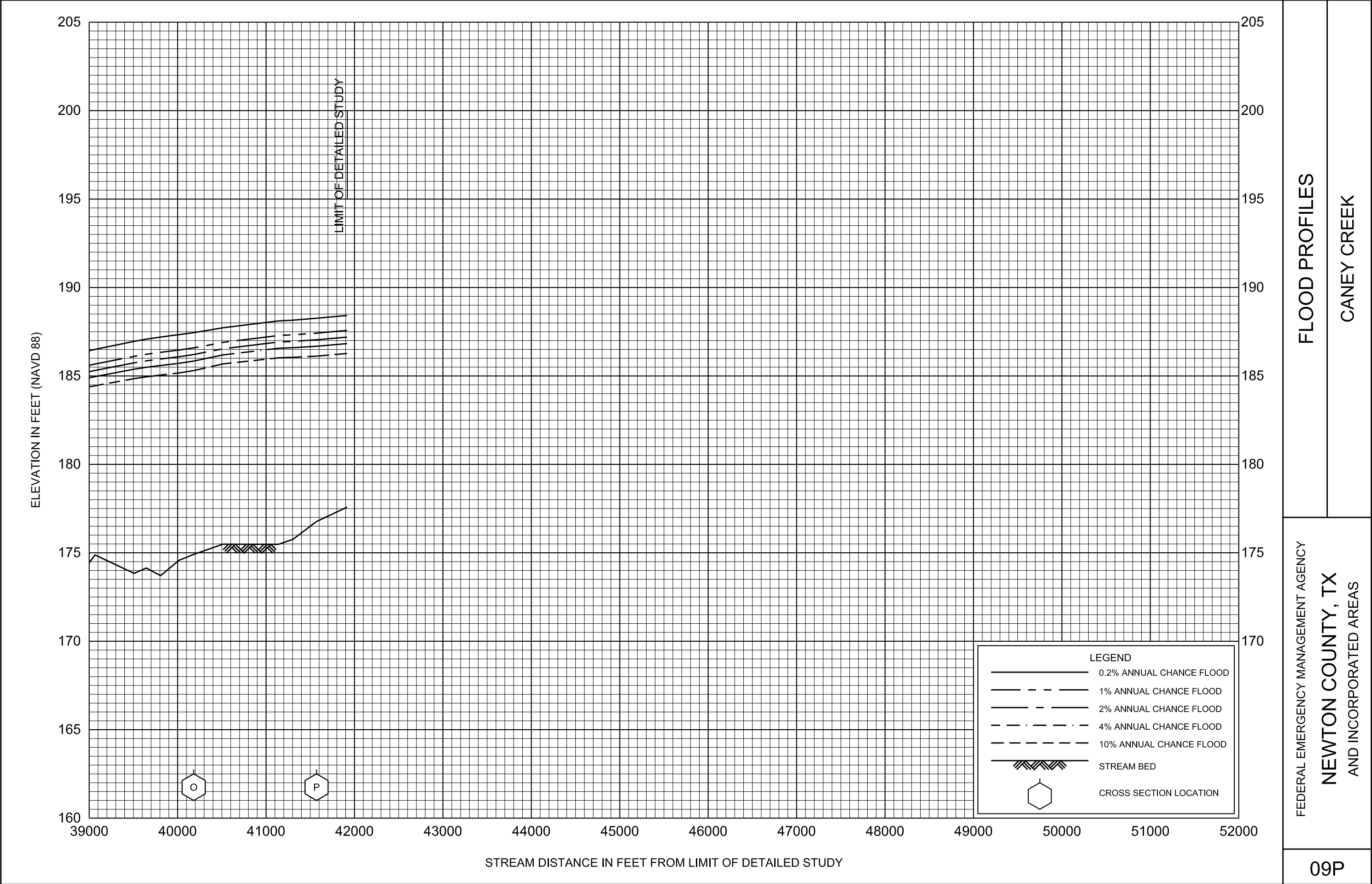
NEWTON COUNTY, TX
AND INCORPORATED AREAS









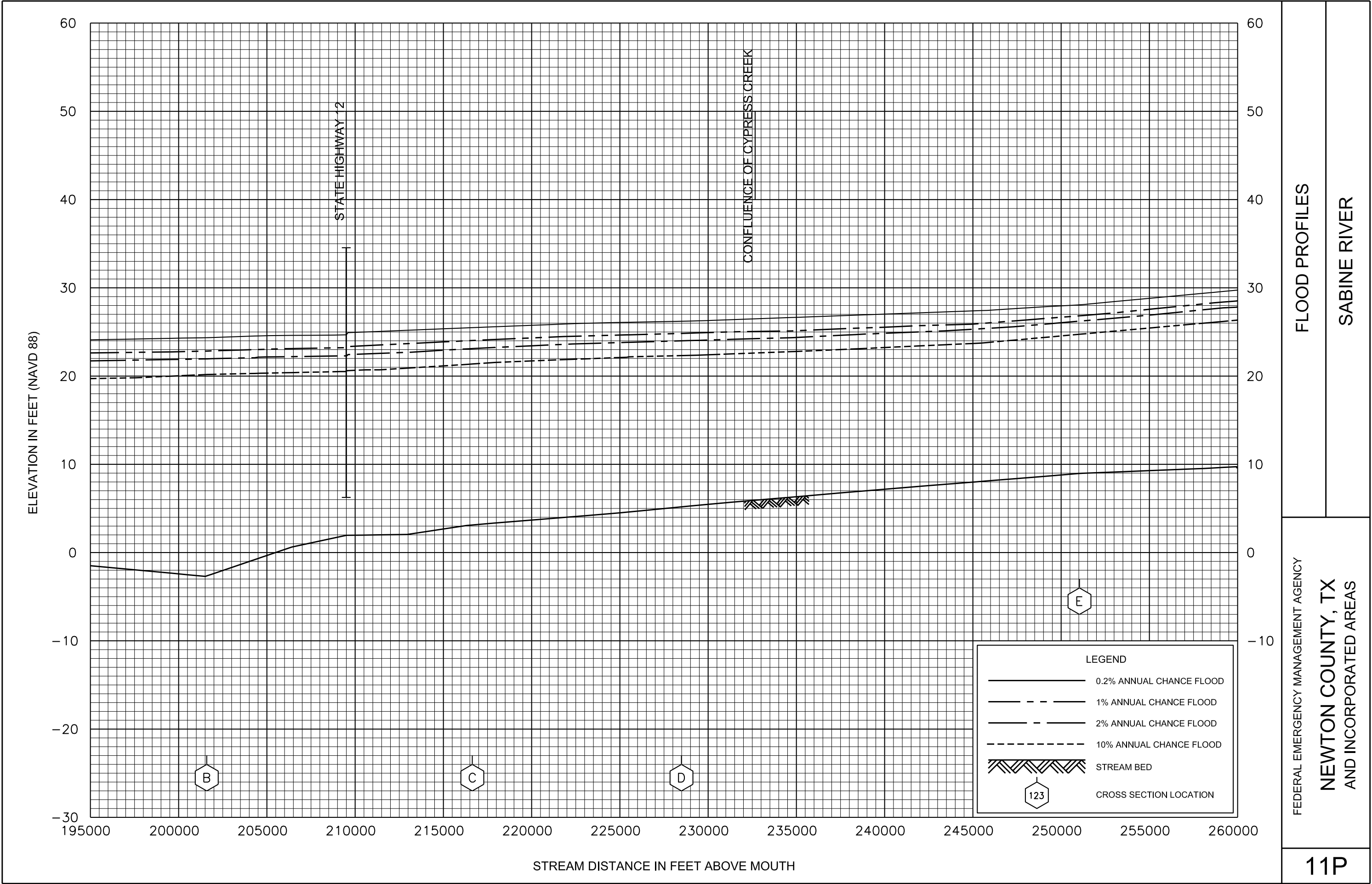


FLOOD PROFILES

CANEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, TX
AND INCORPORATED AREAS

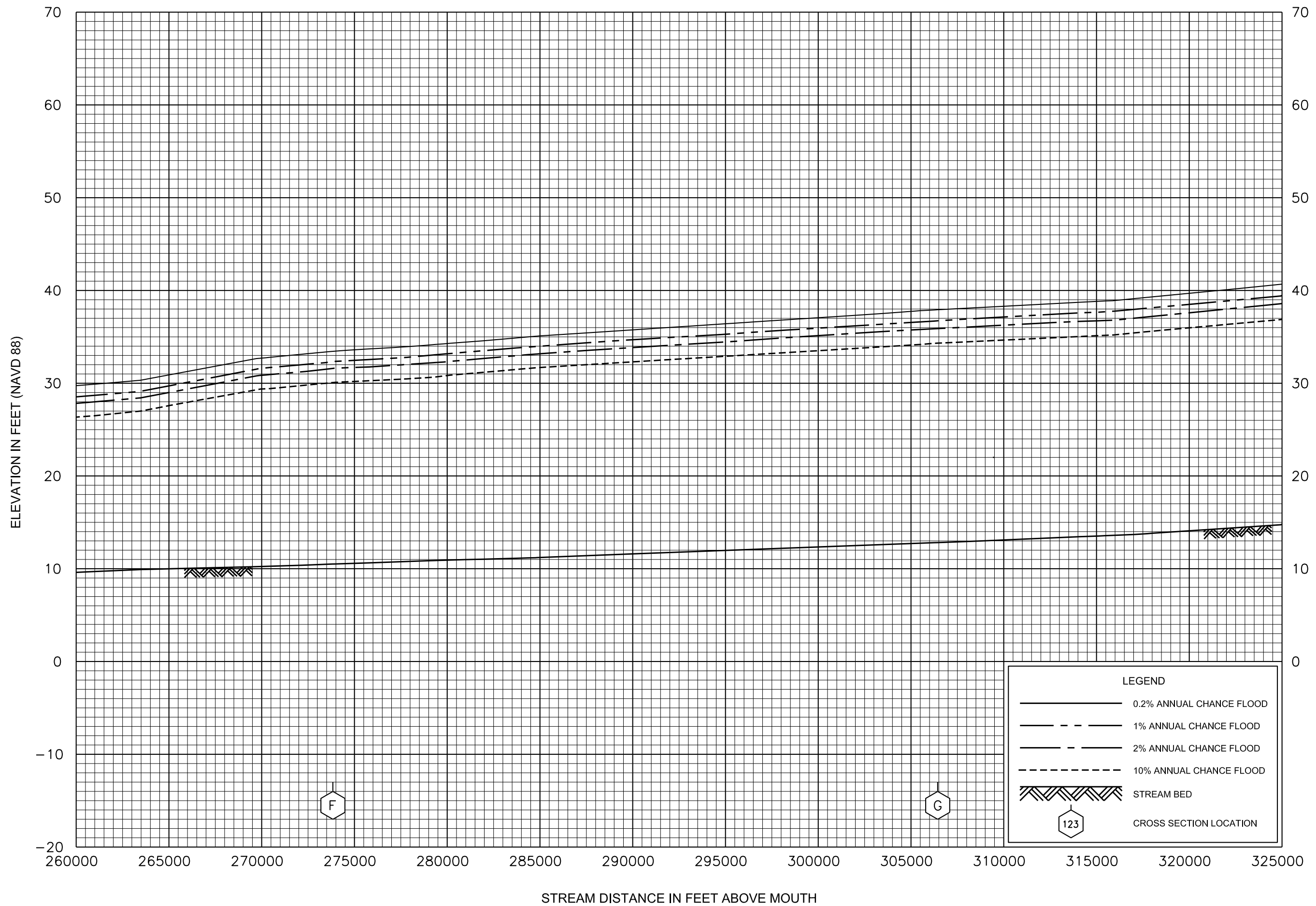


FLOOD PROFILES

SABINE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, TX
AND INCORPORATED AREAS



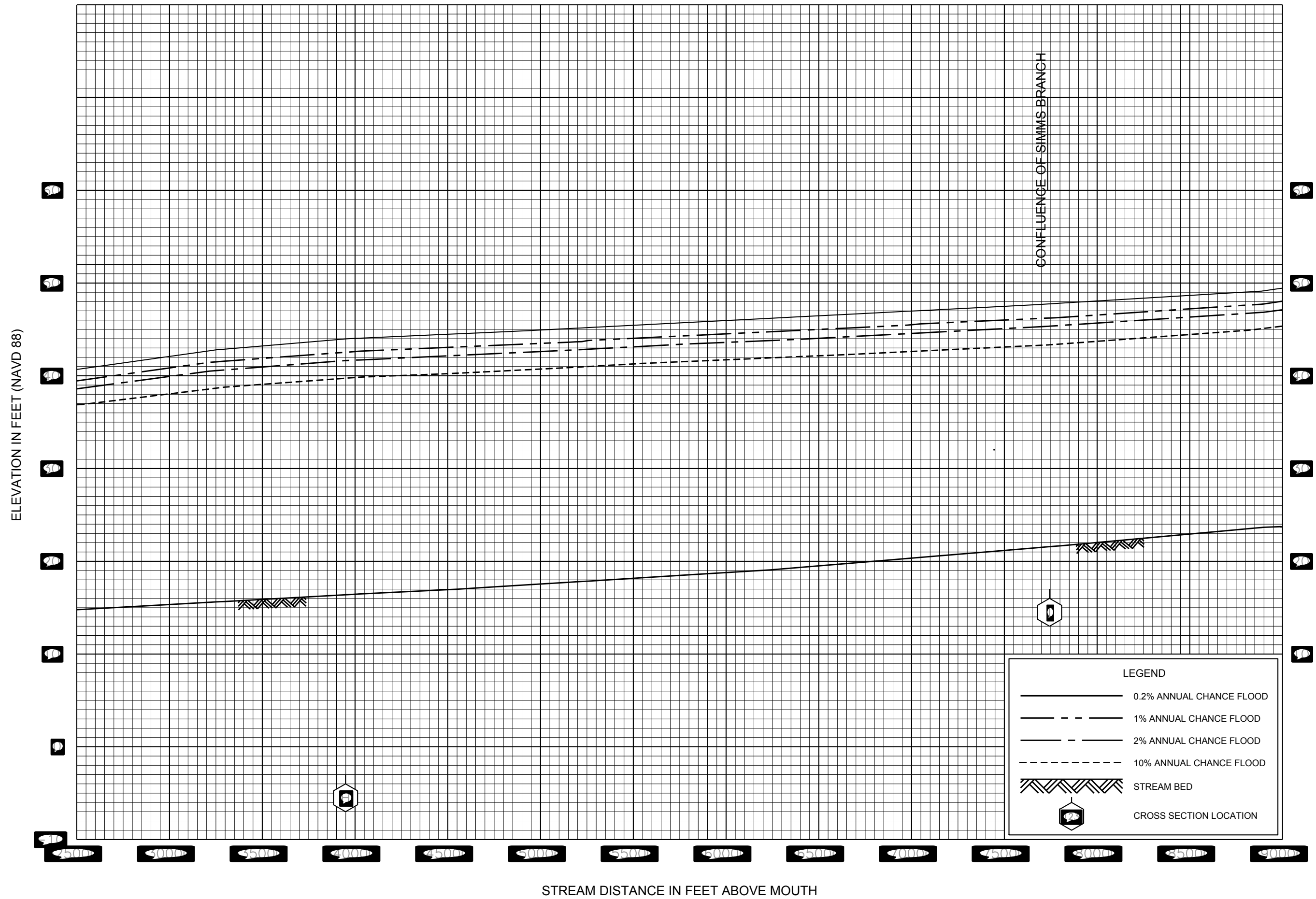
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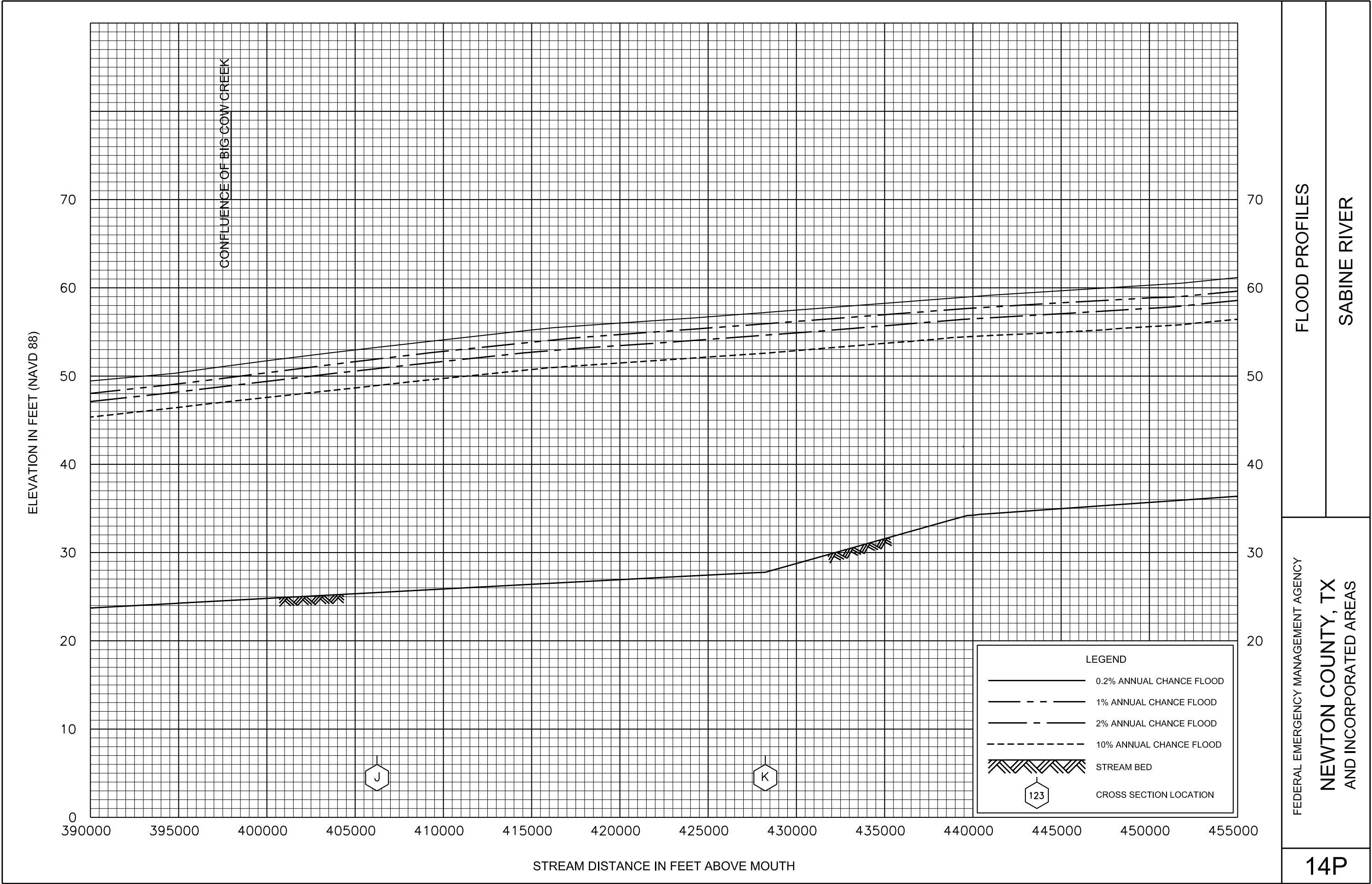
NEWTON COUNTY, TX
AND INCORPORATED AREAS

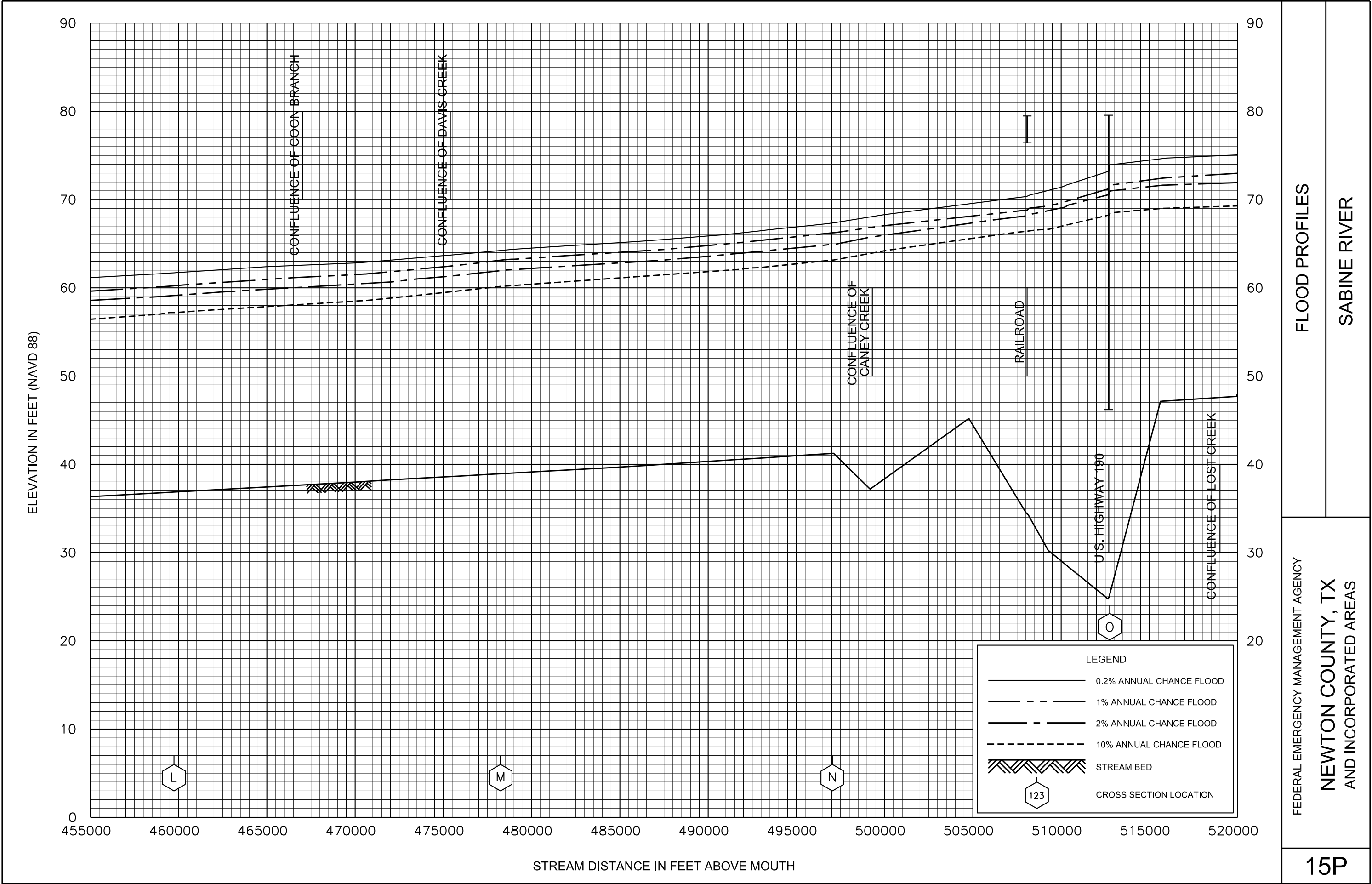
FLOOD PROFILES

SABINE RIVER

12P





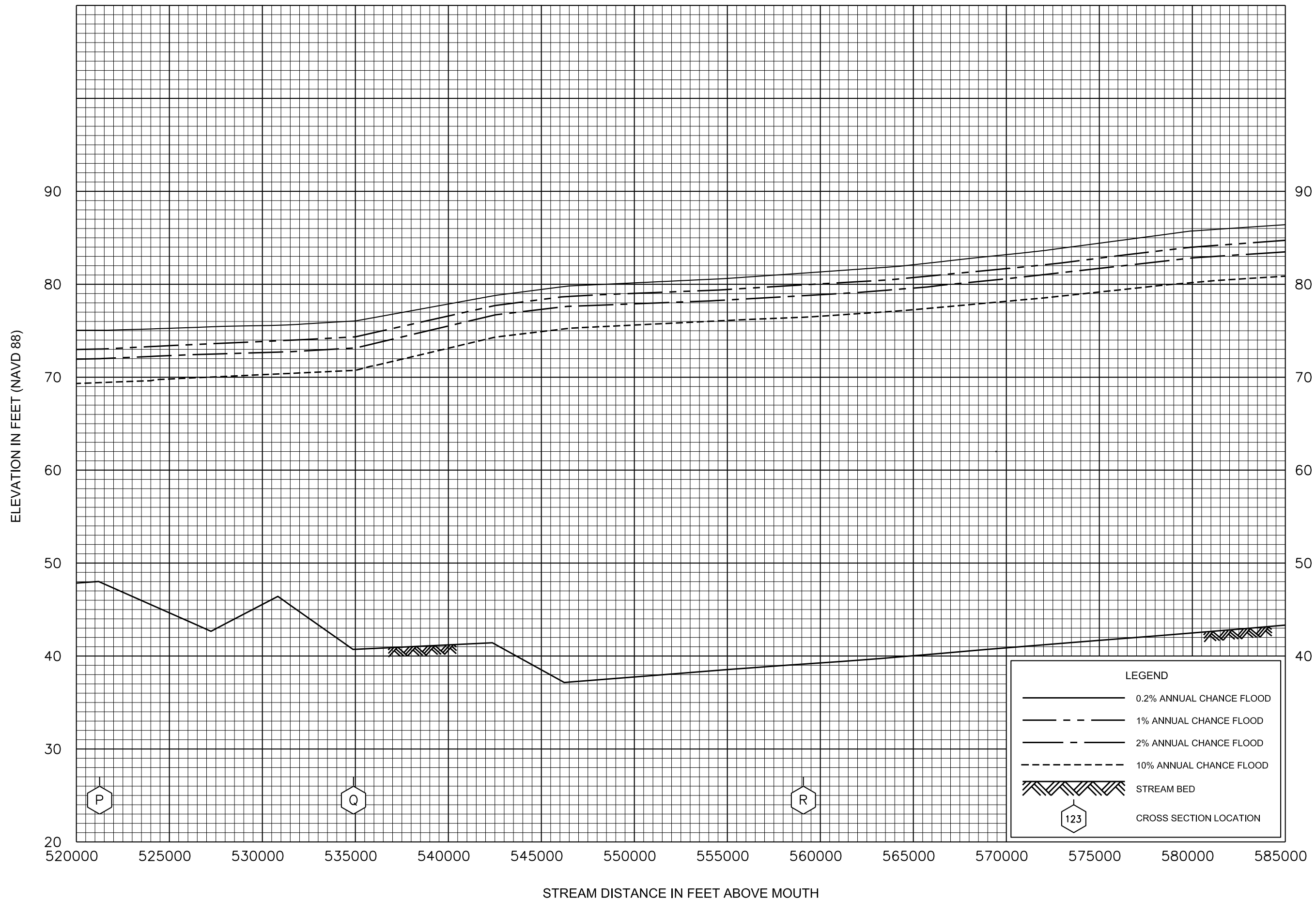


FLOOD PROFILES

SABINE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, TX
AND INCORPORATED AREAS



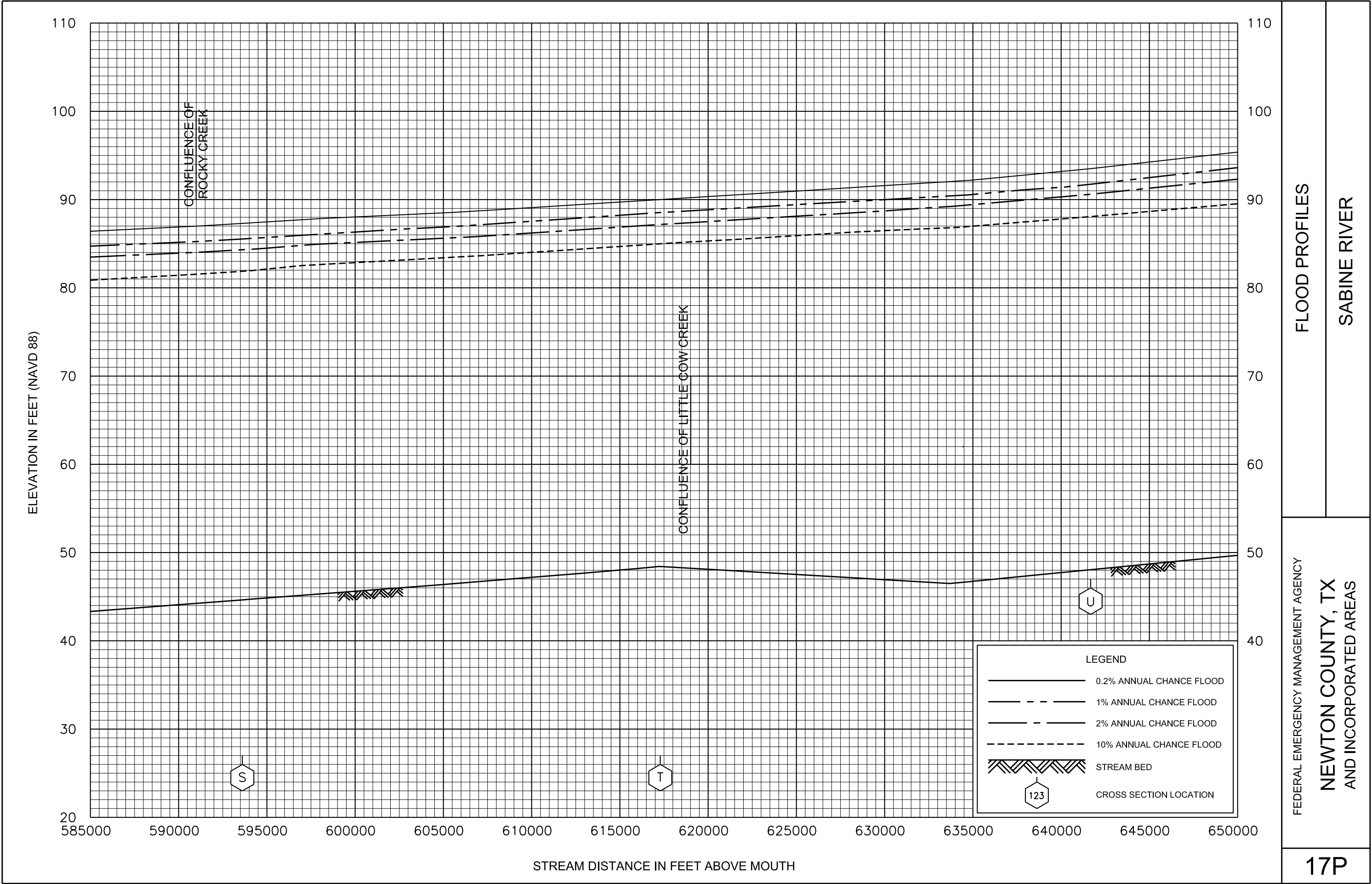
FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, TX AND INCORPORATED AREAS

FLOOD PROFILES

SABINE RIVER

16P

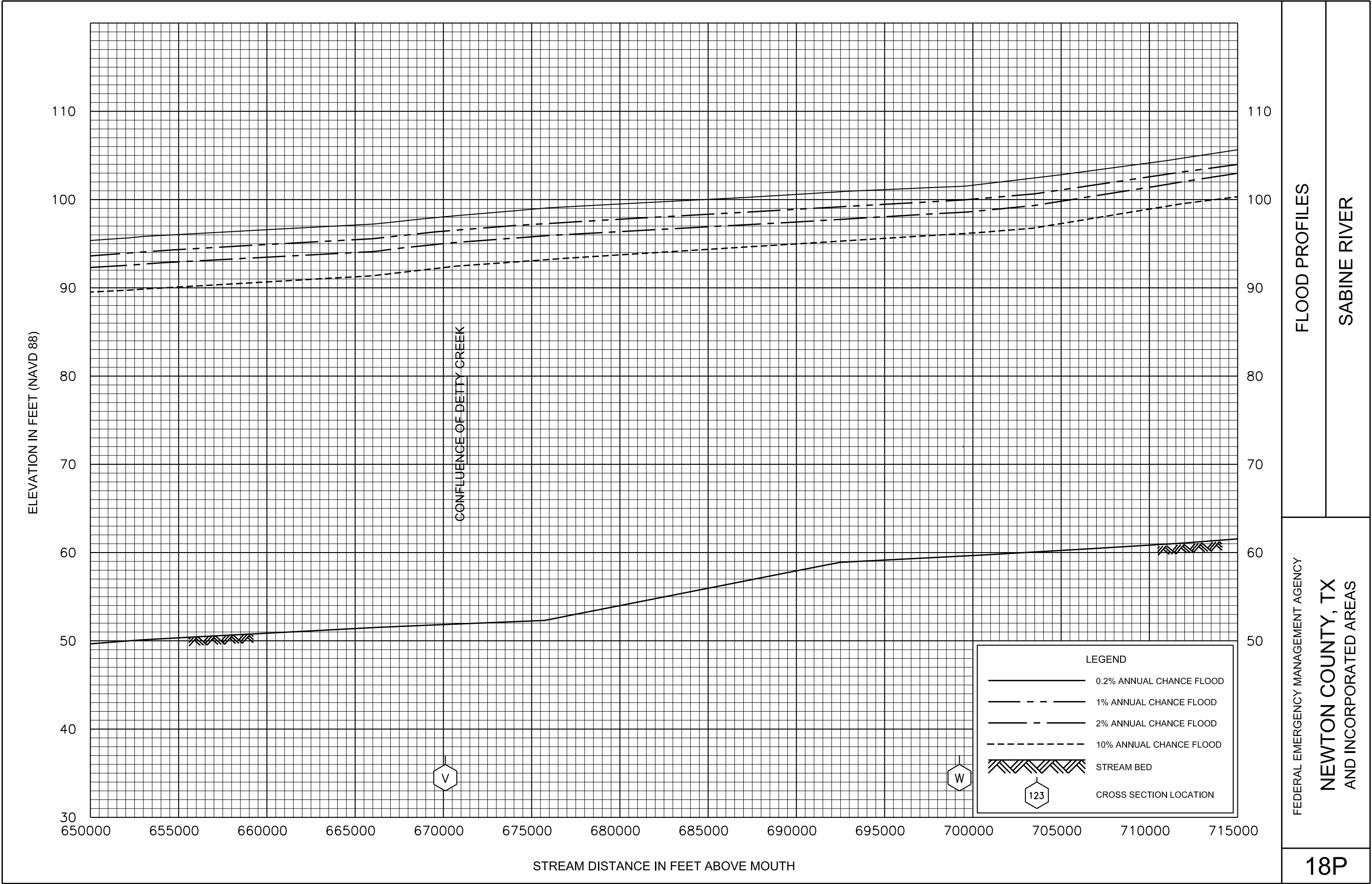


FLOOD PROFILES

SABINE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, TX
AND INCORPORATED AREAS

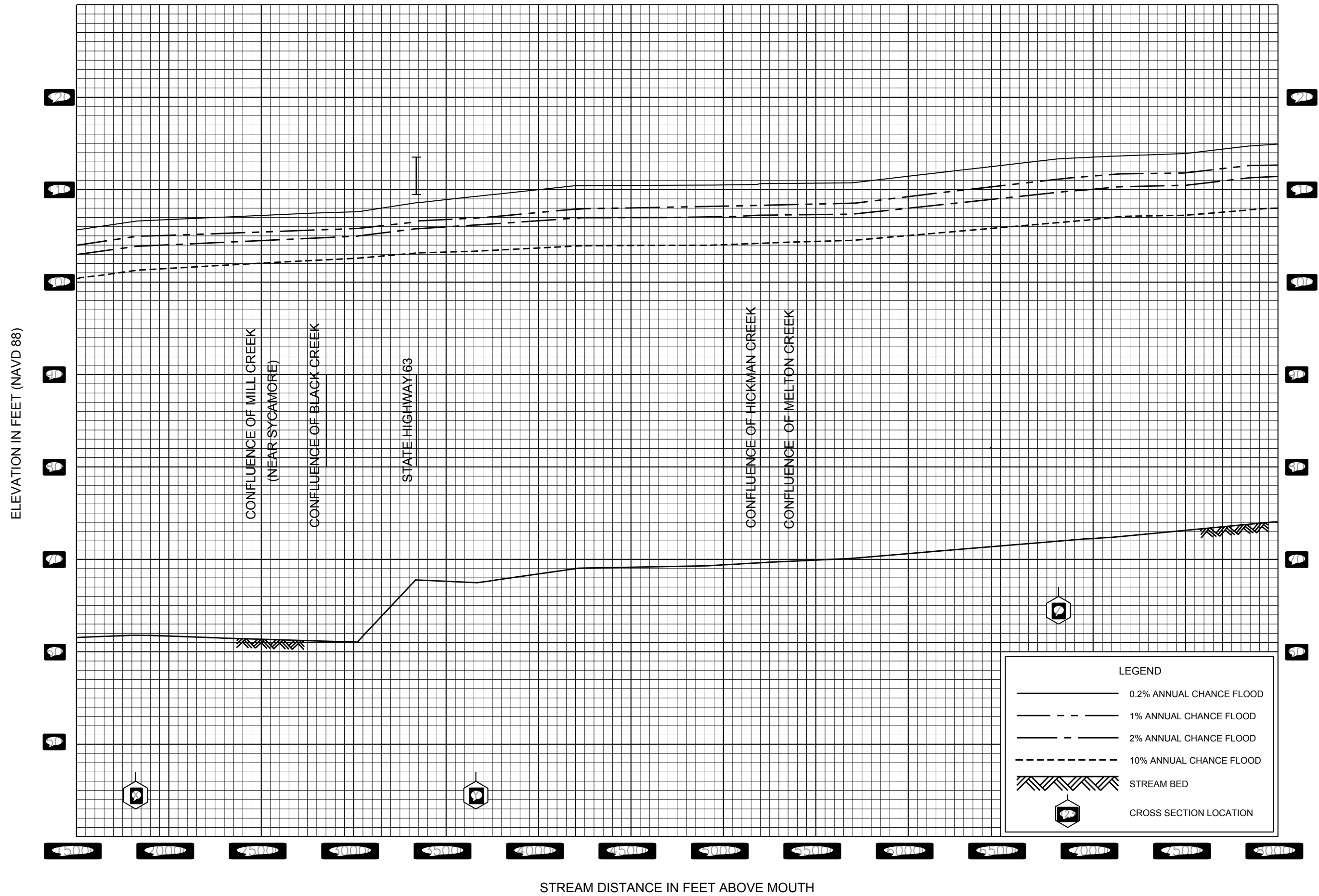


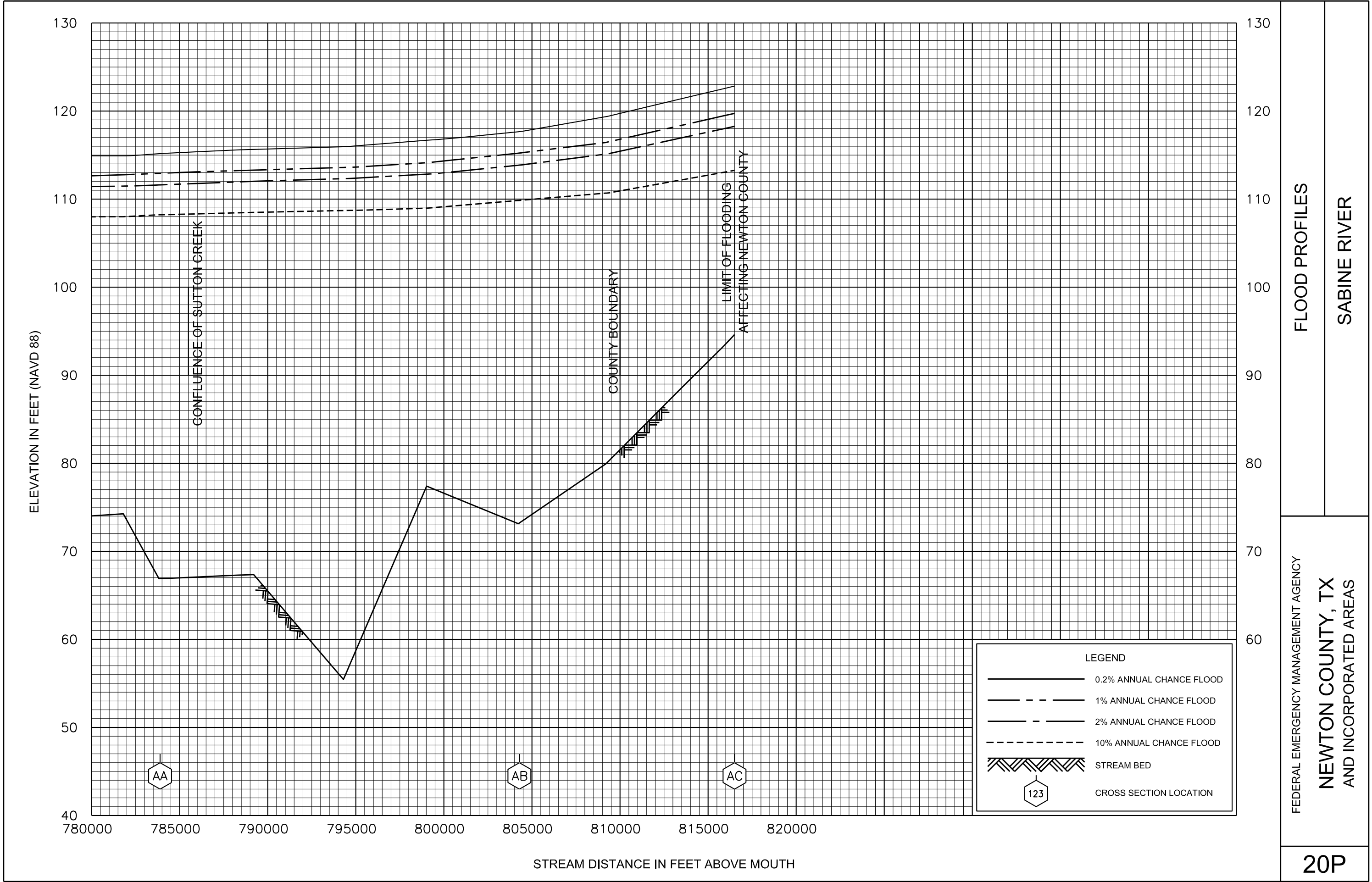
FLOOD PROFILES

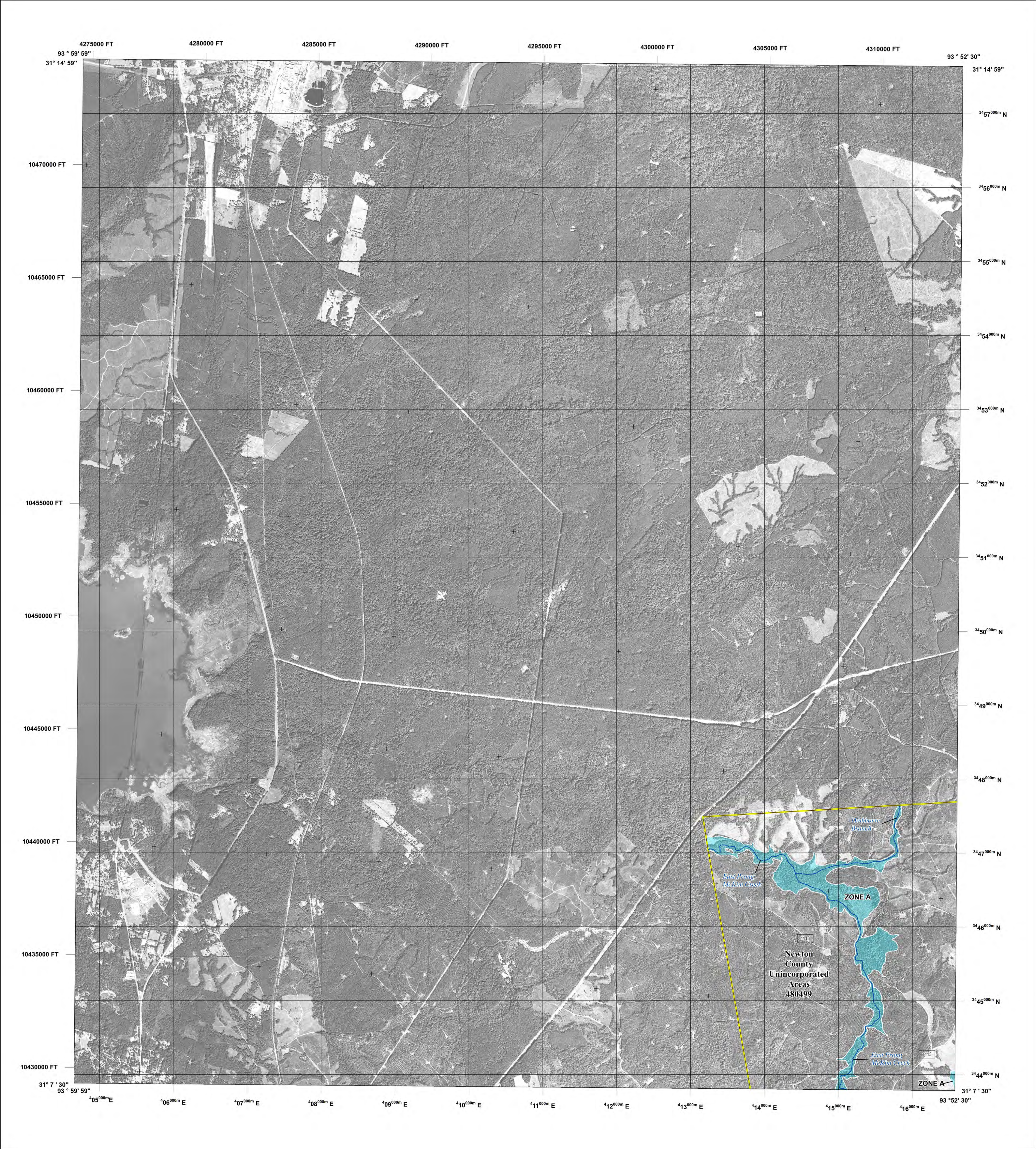
SABINE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEWTON COUNTY, TX
AND INCORPORATED AREAS

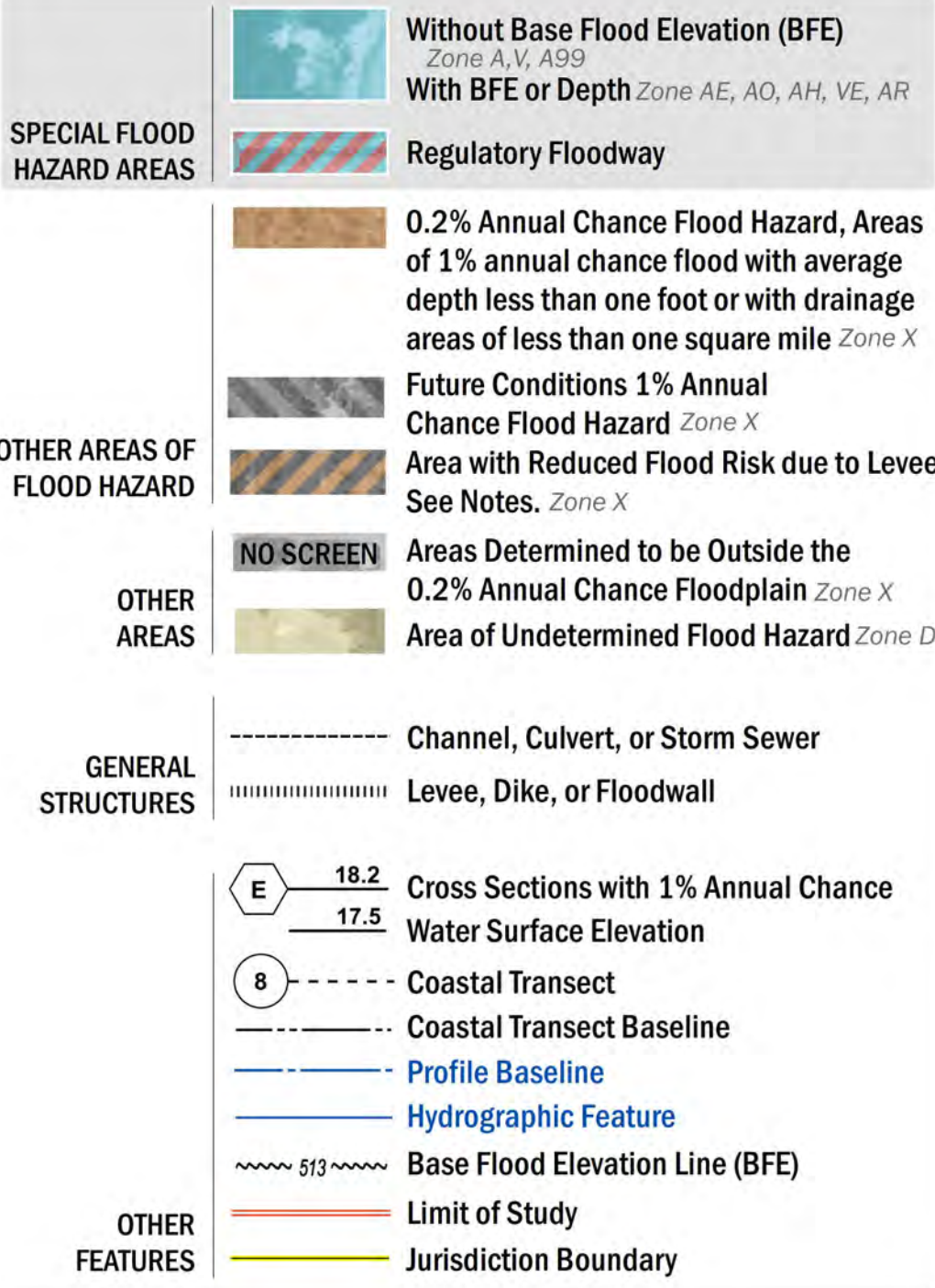






FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)



NOTES TO USERS

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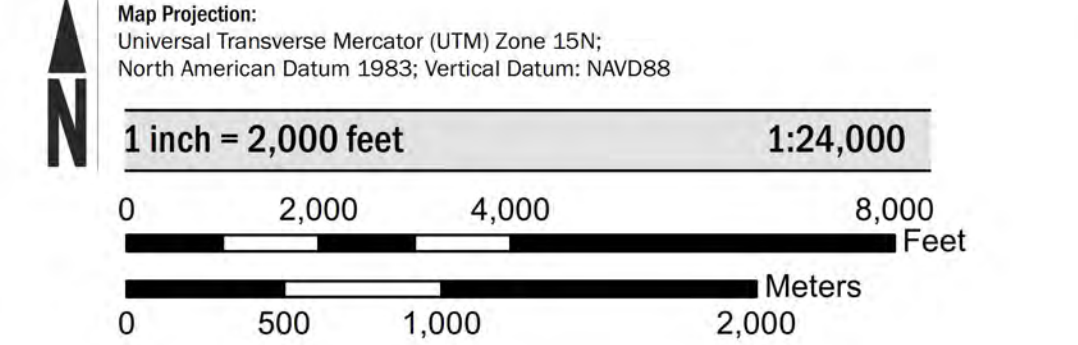
Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be ordered directly from the Flood Map Service Center at the number listed above.

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Base map information shown on this FIRM was provided in digital format from the US Census Bureau dated 2006 and 2015; and from US Department of Agriculture Orthorectified Imagery dated 2015.

SCALE



PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 25 of 775

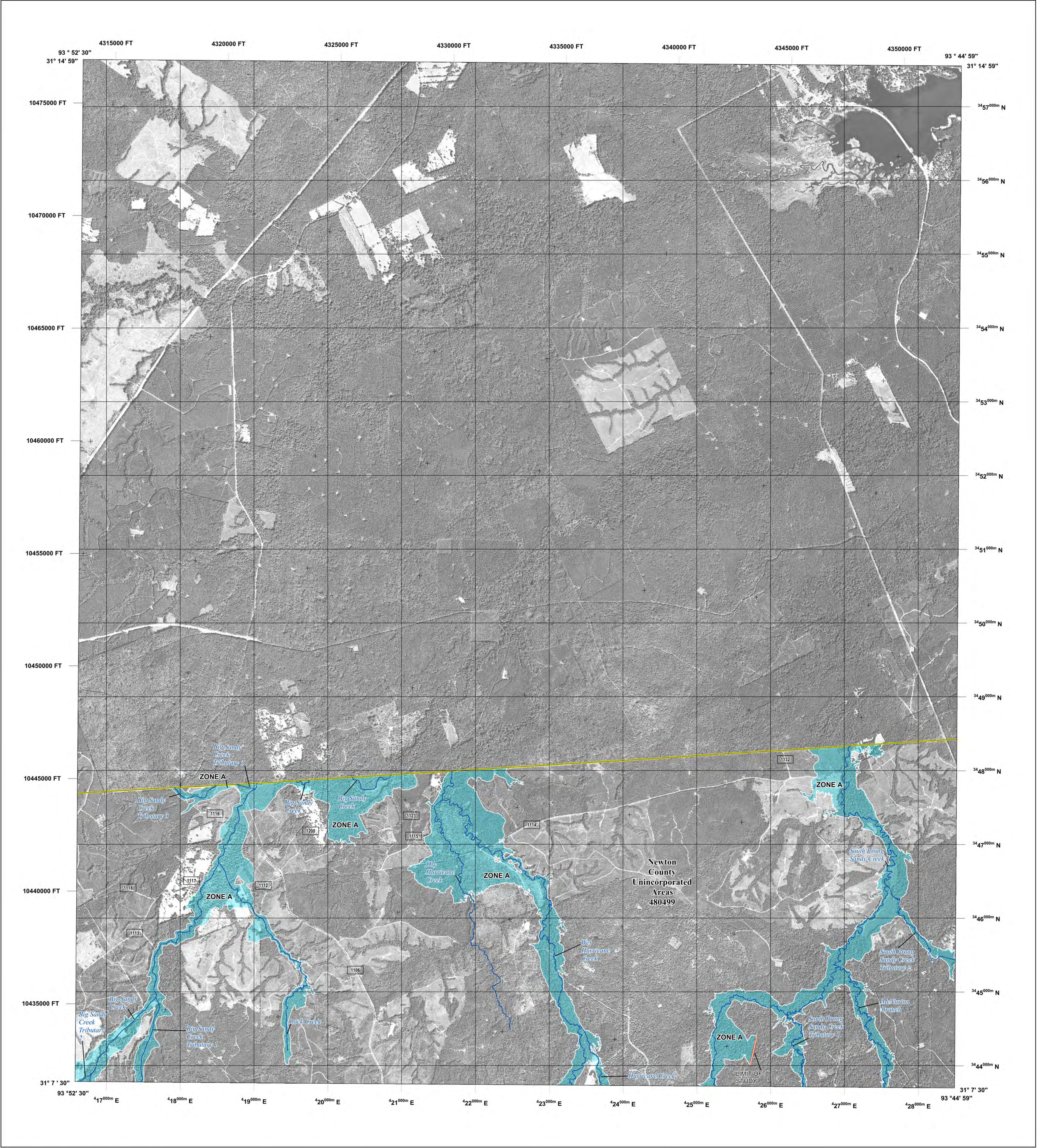
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0025	D

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0025D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

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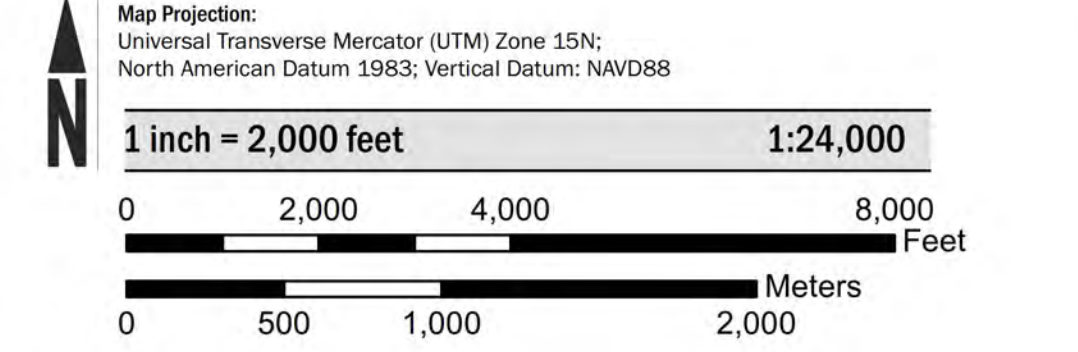
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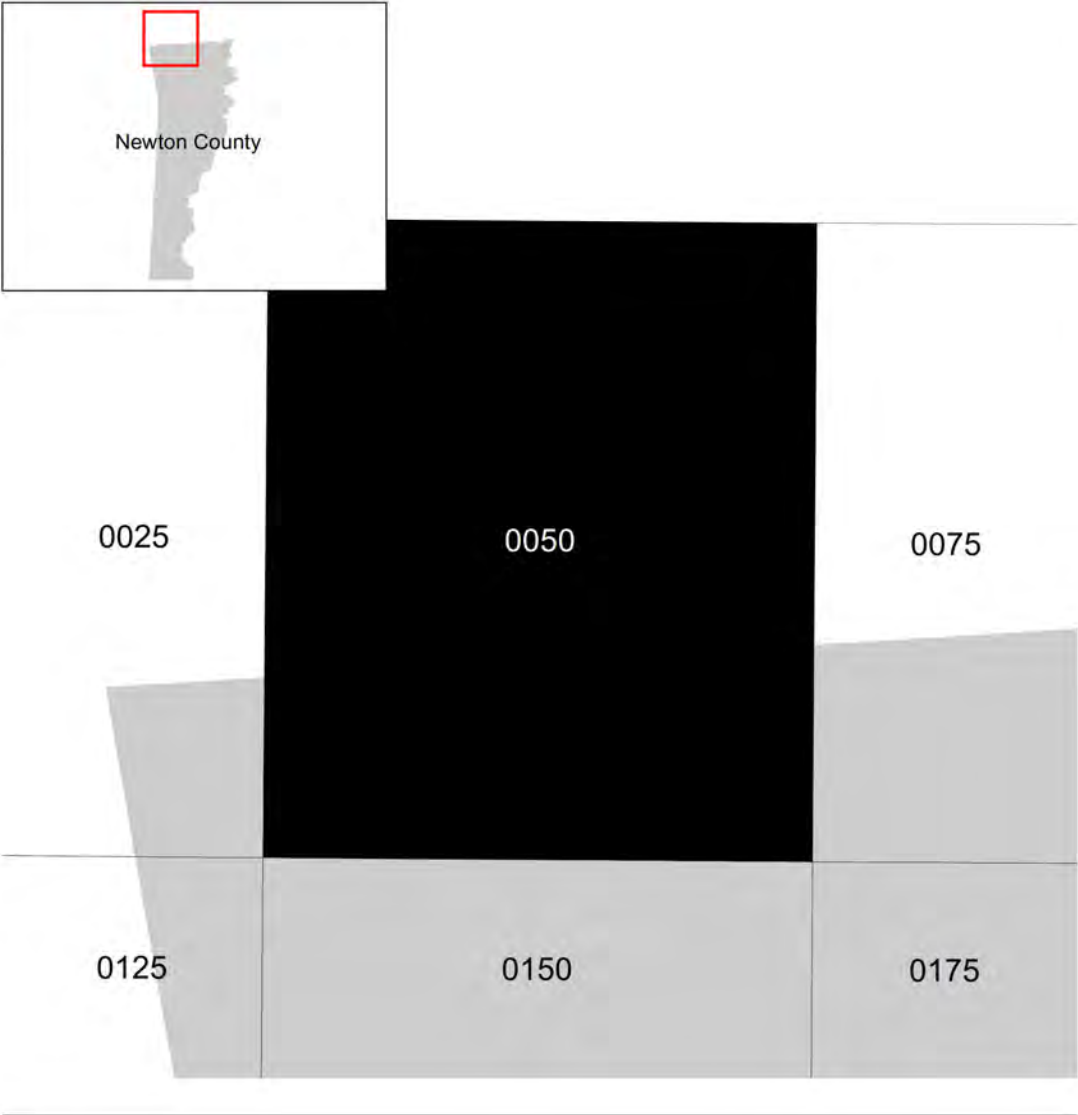
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 50 of 775

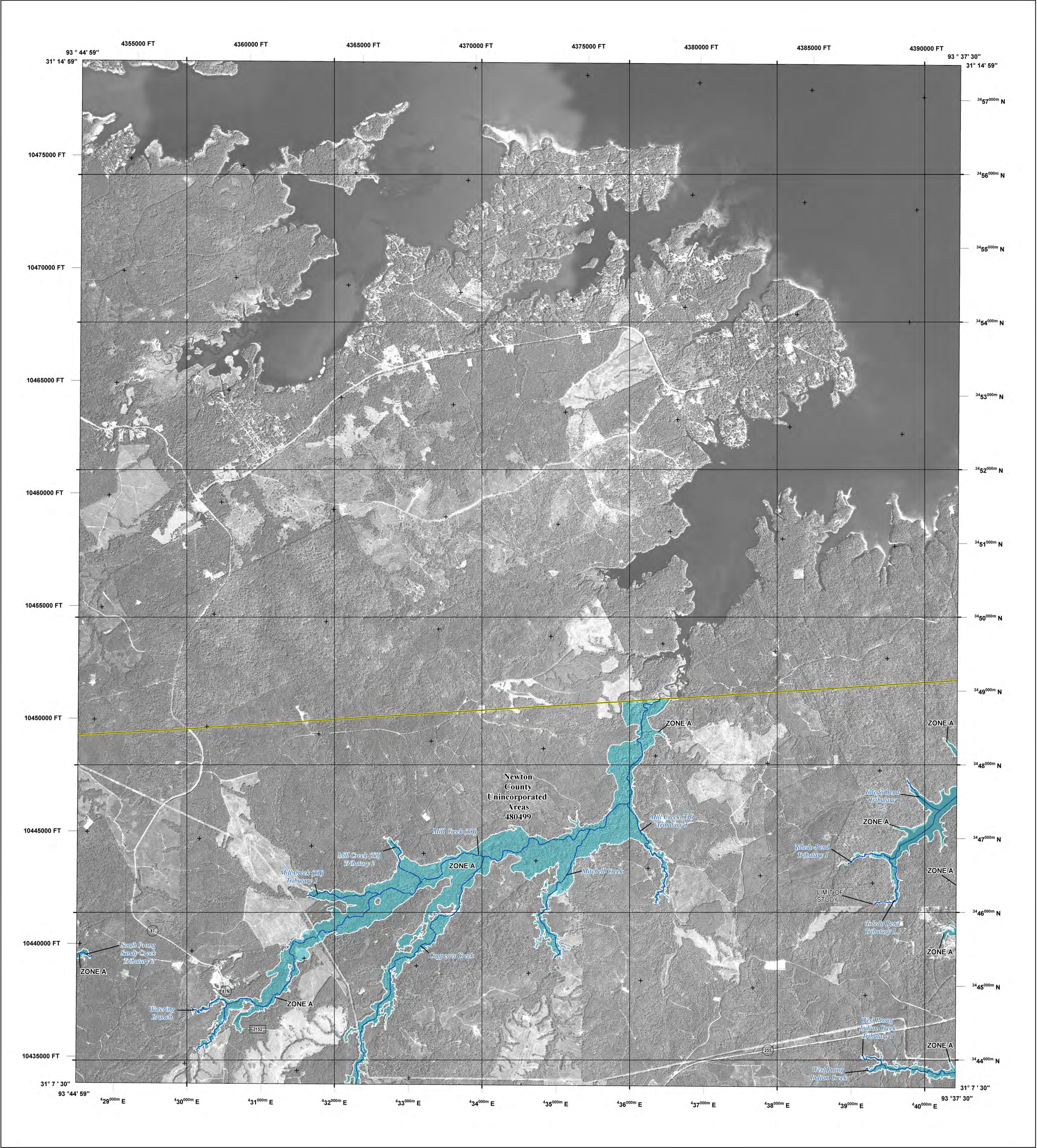
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0050	D

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0050D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		18.2
		17.5
		8
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

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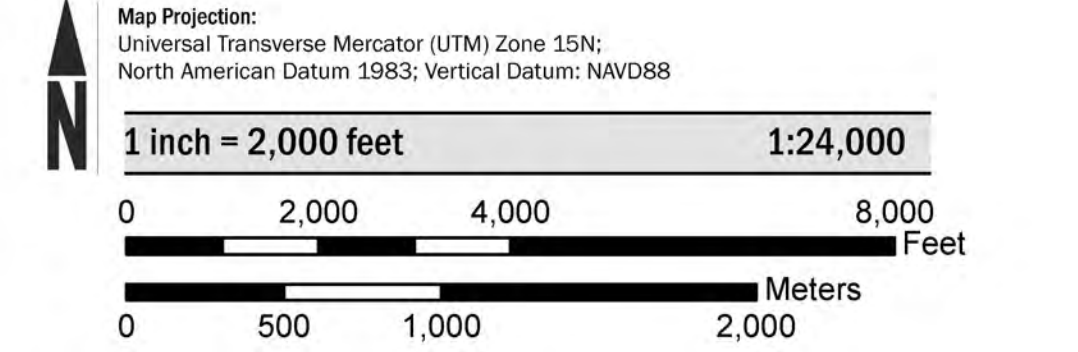
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For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

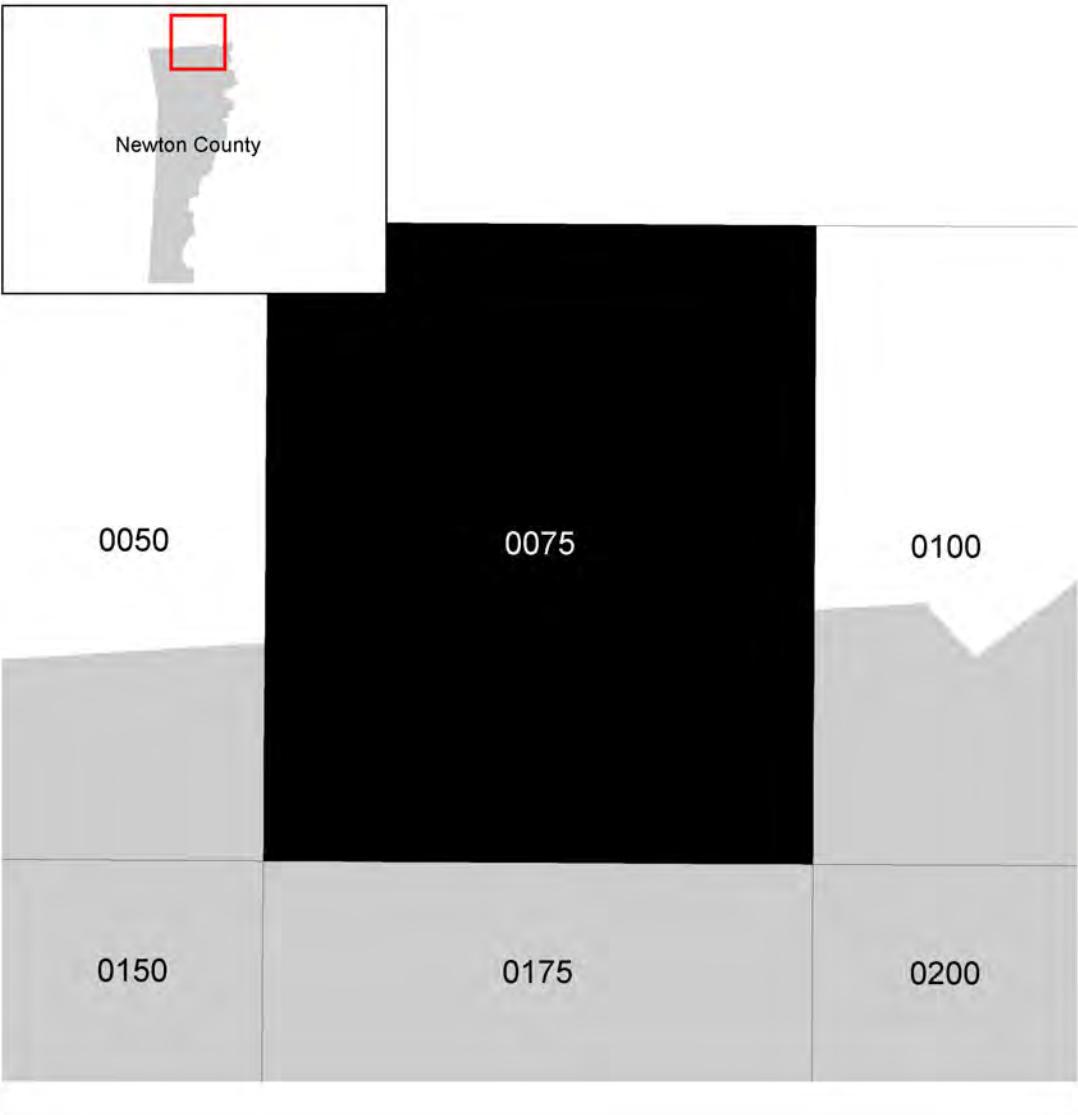
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SCALE



PANEL LOCATOR



National Flood Insurance Program

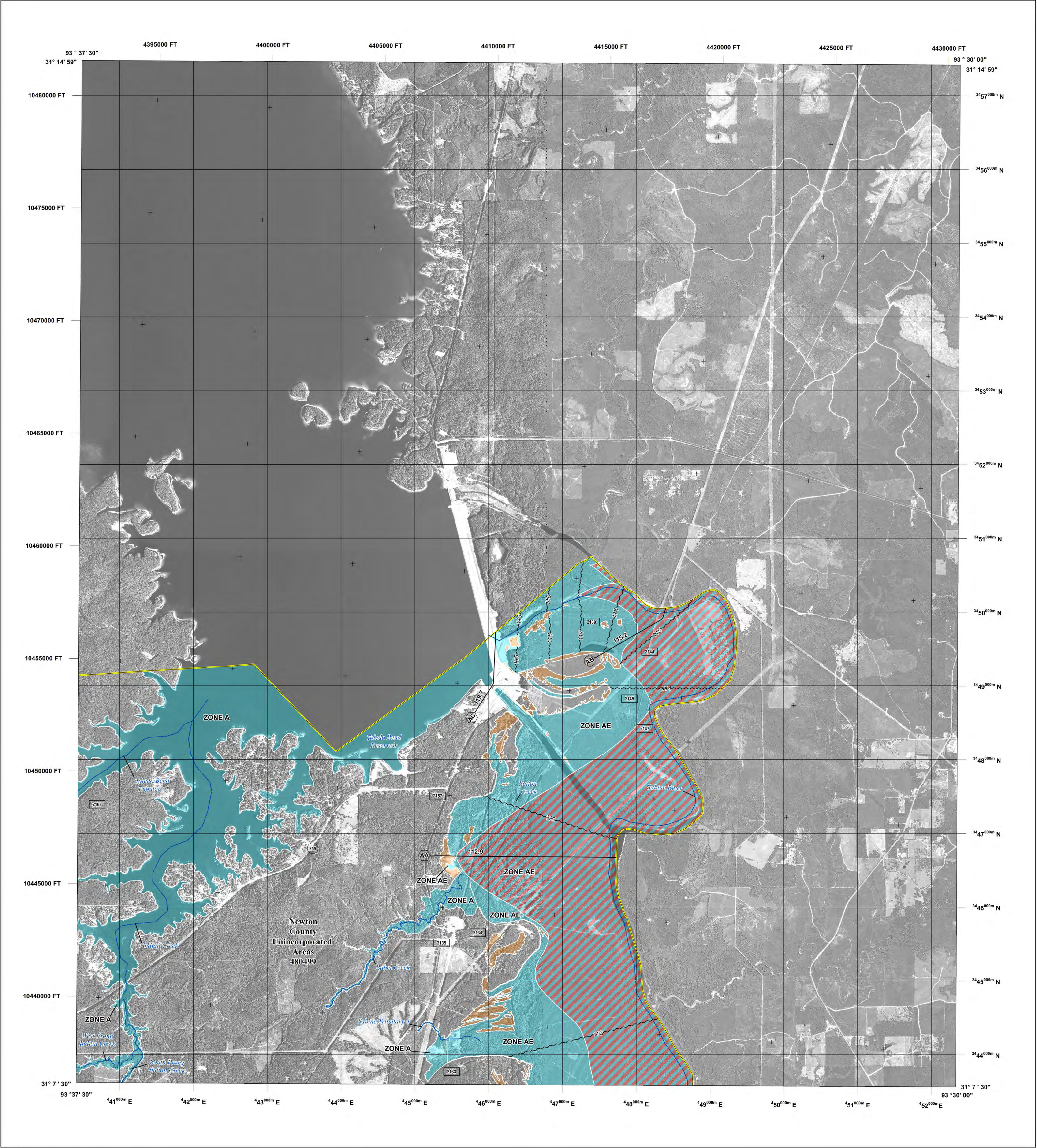
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 75 of 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0075	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0075D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		8 Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		513 Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

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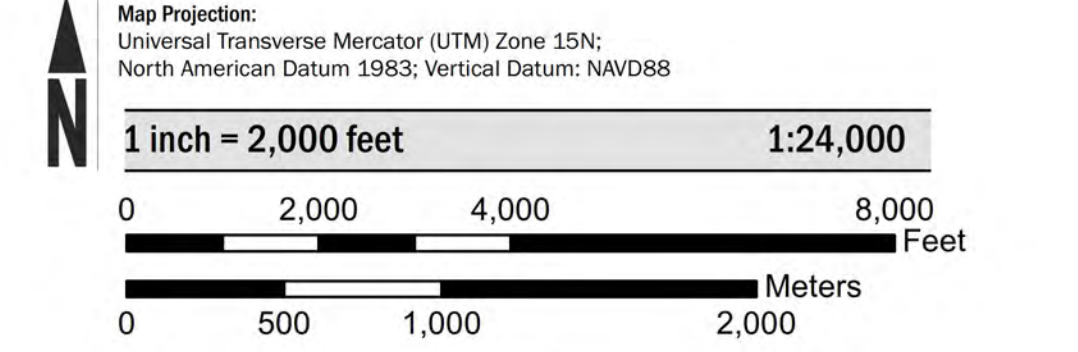
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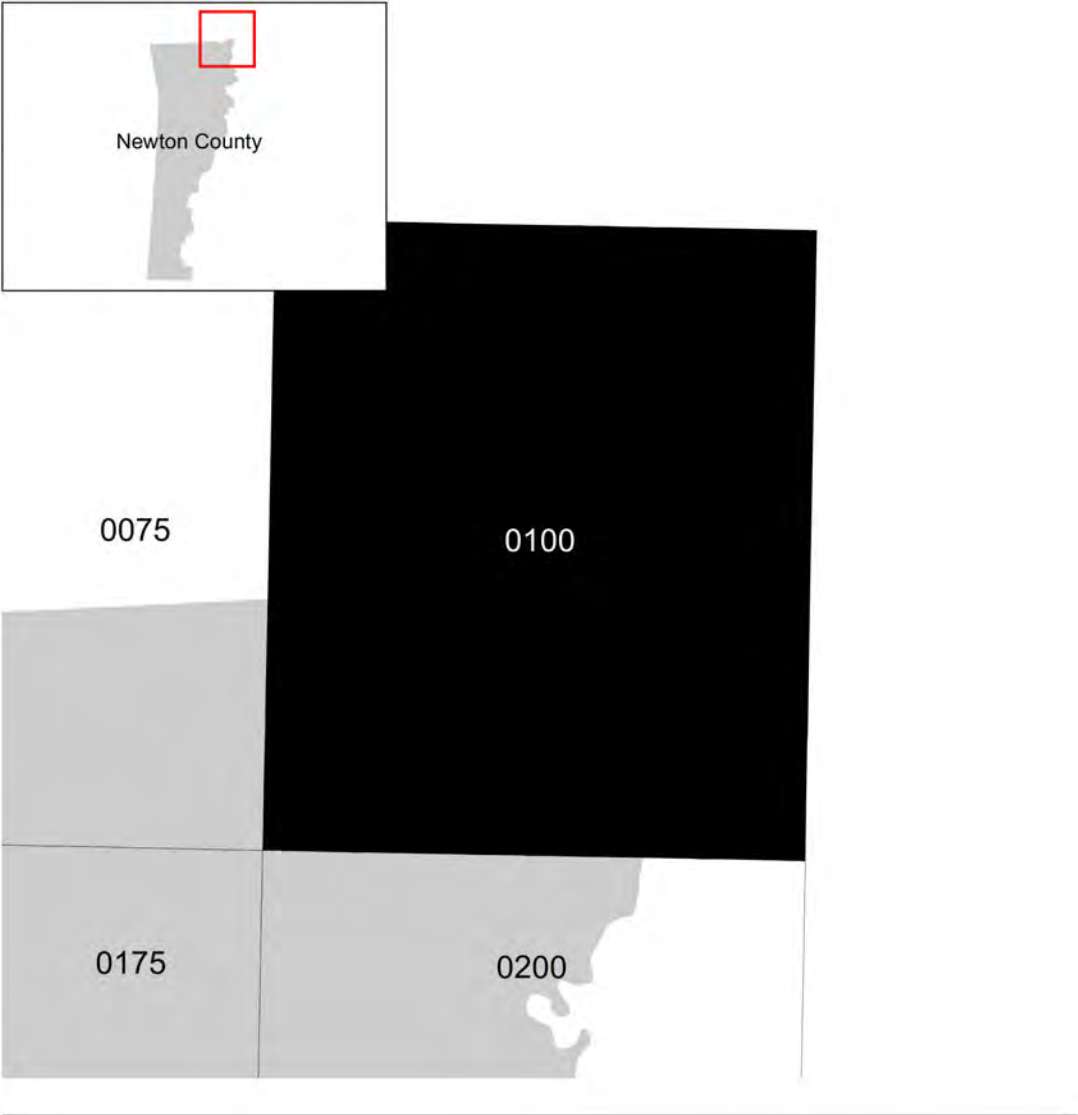
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SCALE



PANEL LOCATOR



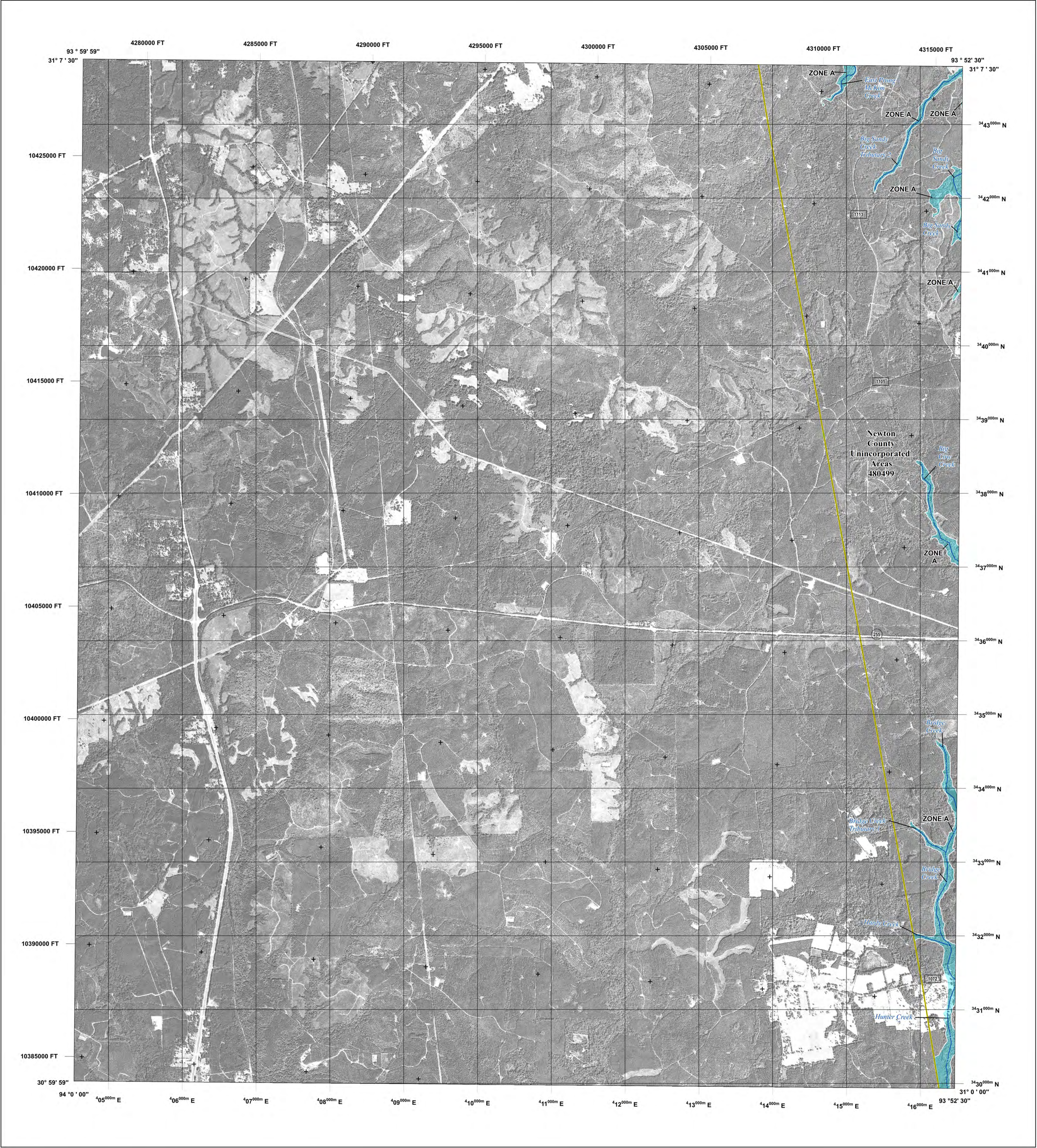
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 100 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0100	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0100D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
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[HTTP://MSC.FEMA.GOV](http://msc.fema.gov)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		8 Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		513 Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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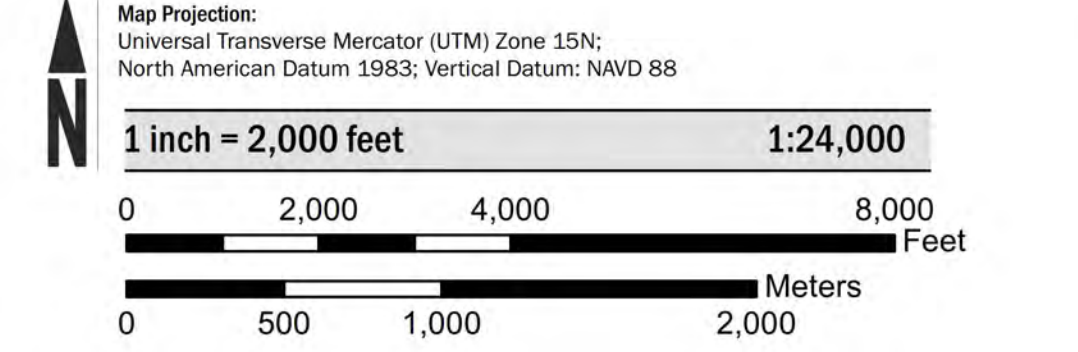
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SCALE



PANEL LOCATOR



National Flood Insurance Program

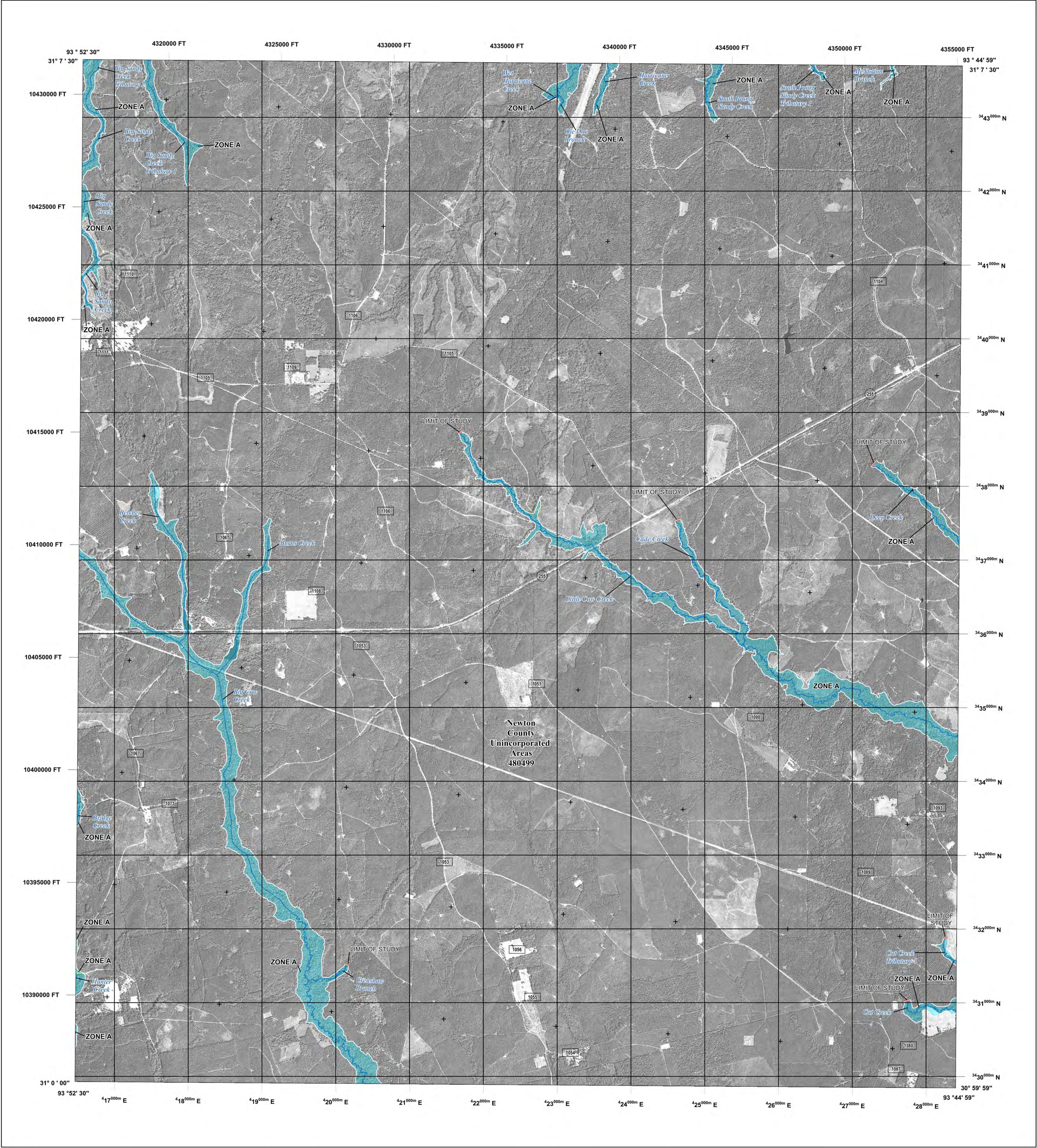
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 125 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0125	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0125D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		18.2
		17.5
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		513
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

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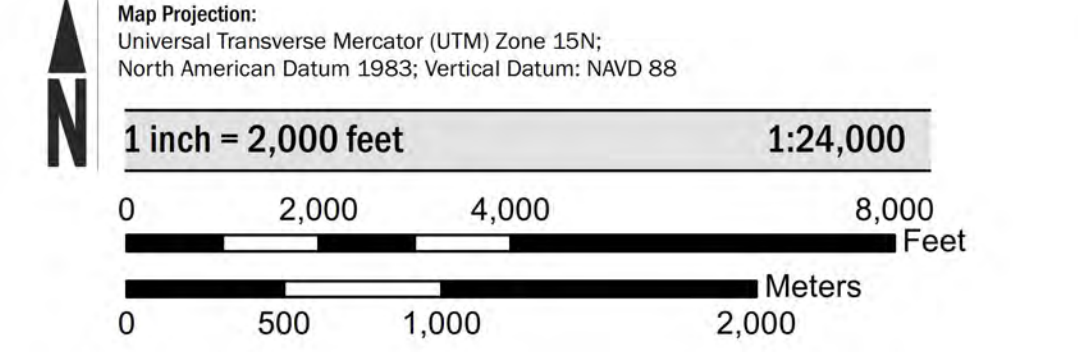
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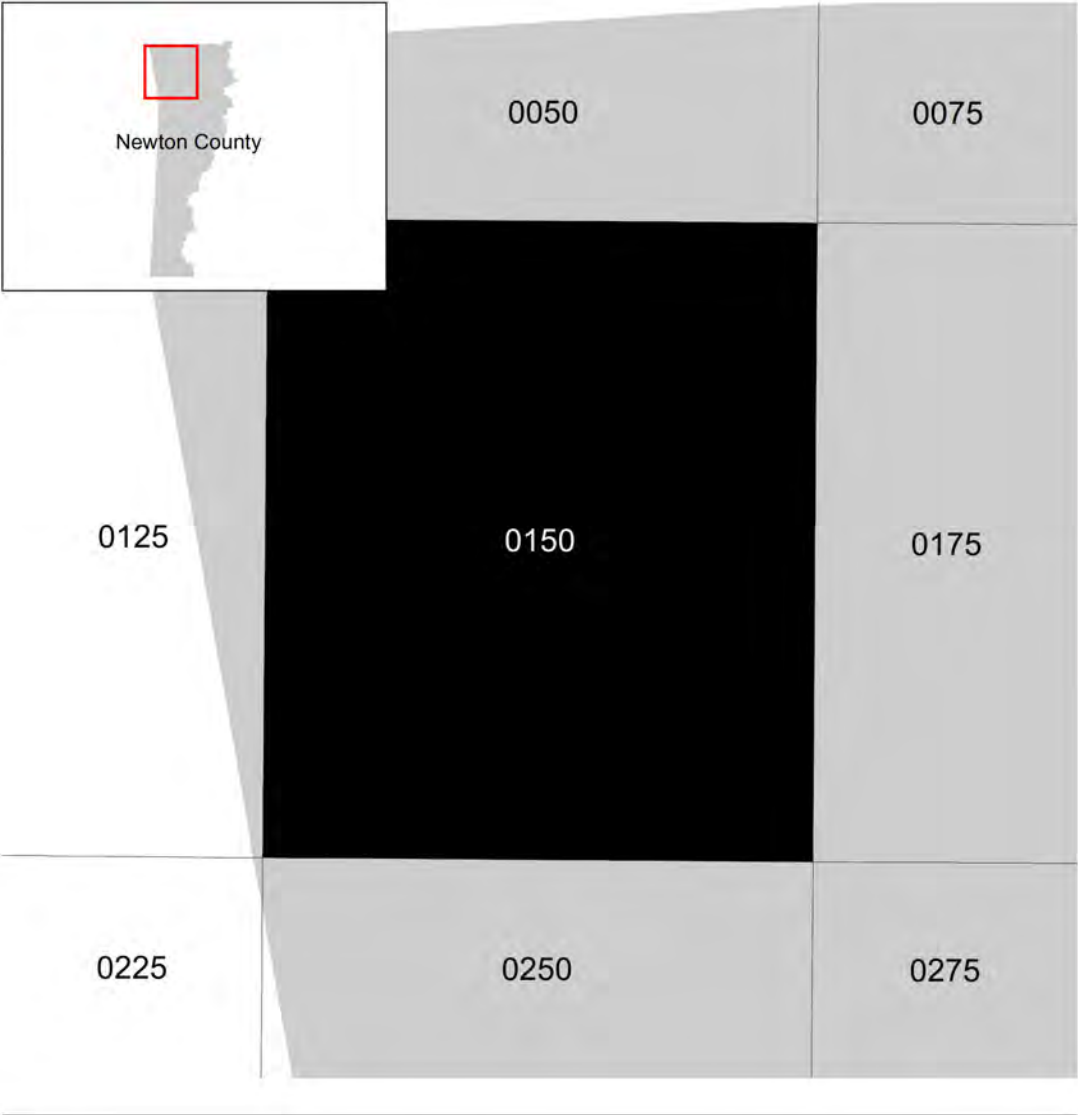
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SCALE



PANEL LOCATOR



National Flood Insurance Program

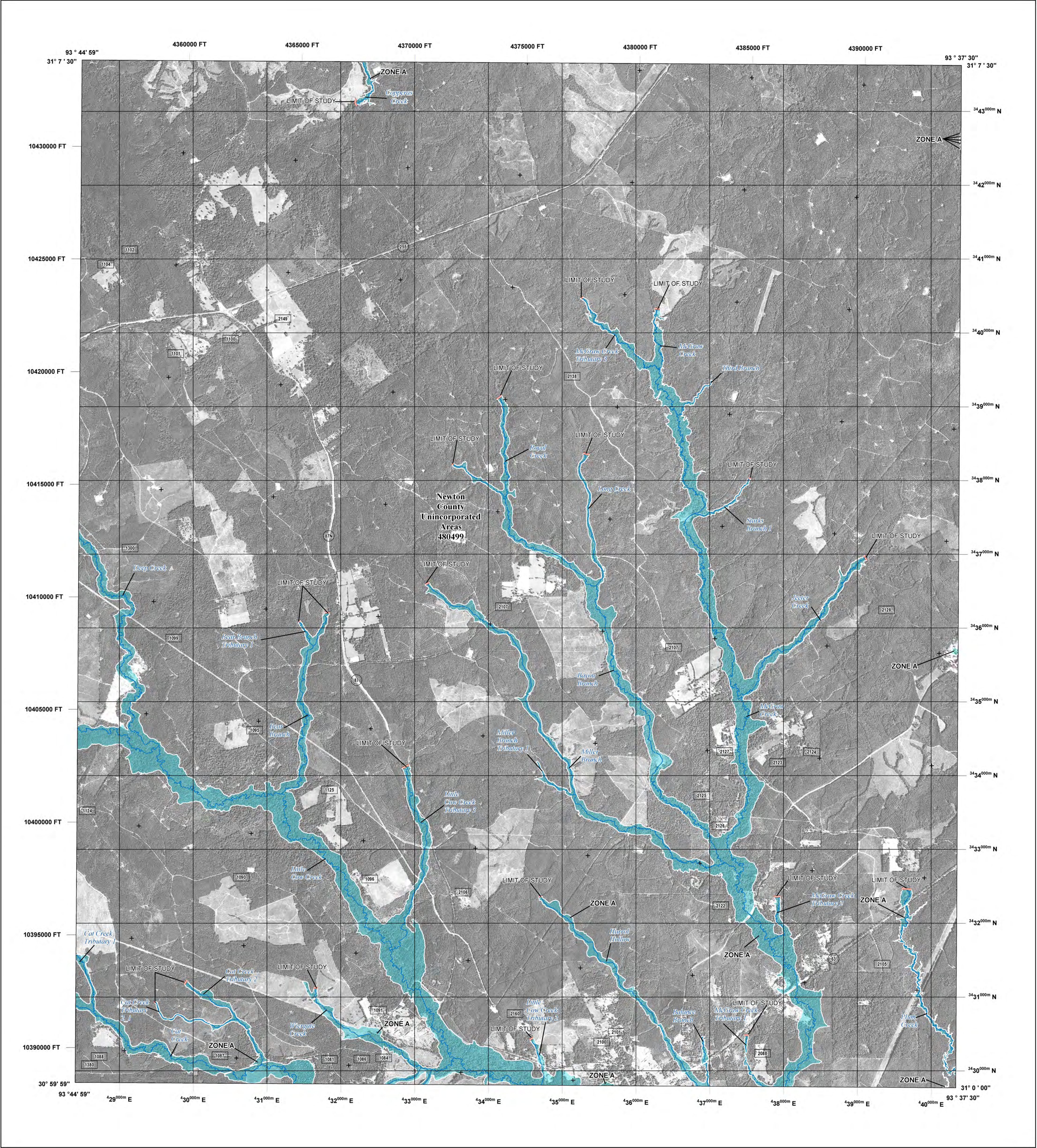
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 150 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0150	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0150D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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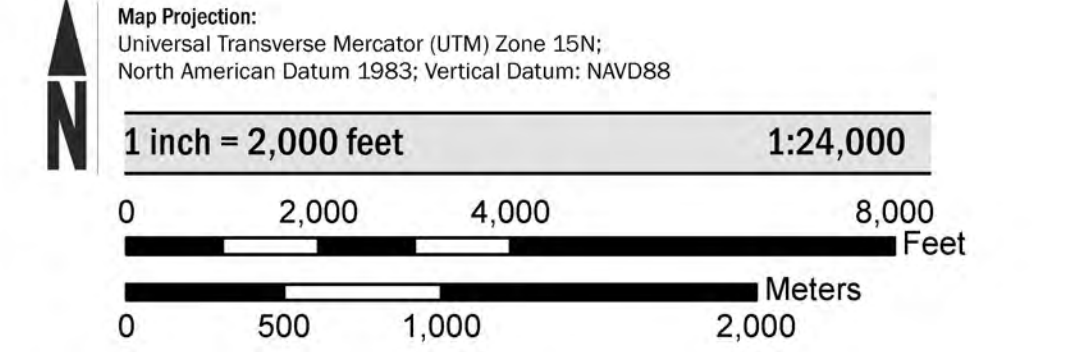
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SCALE



PANEL LOCATOR



National Flood Insurance Program

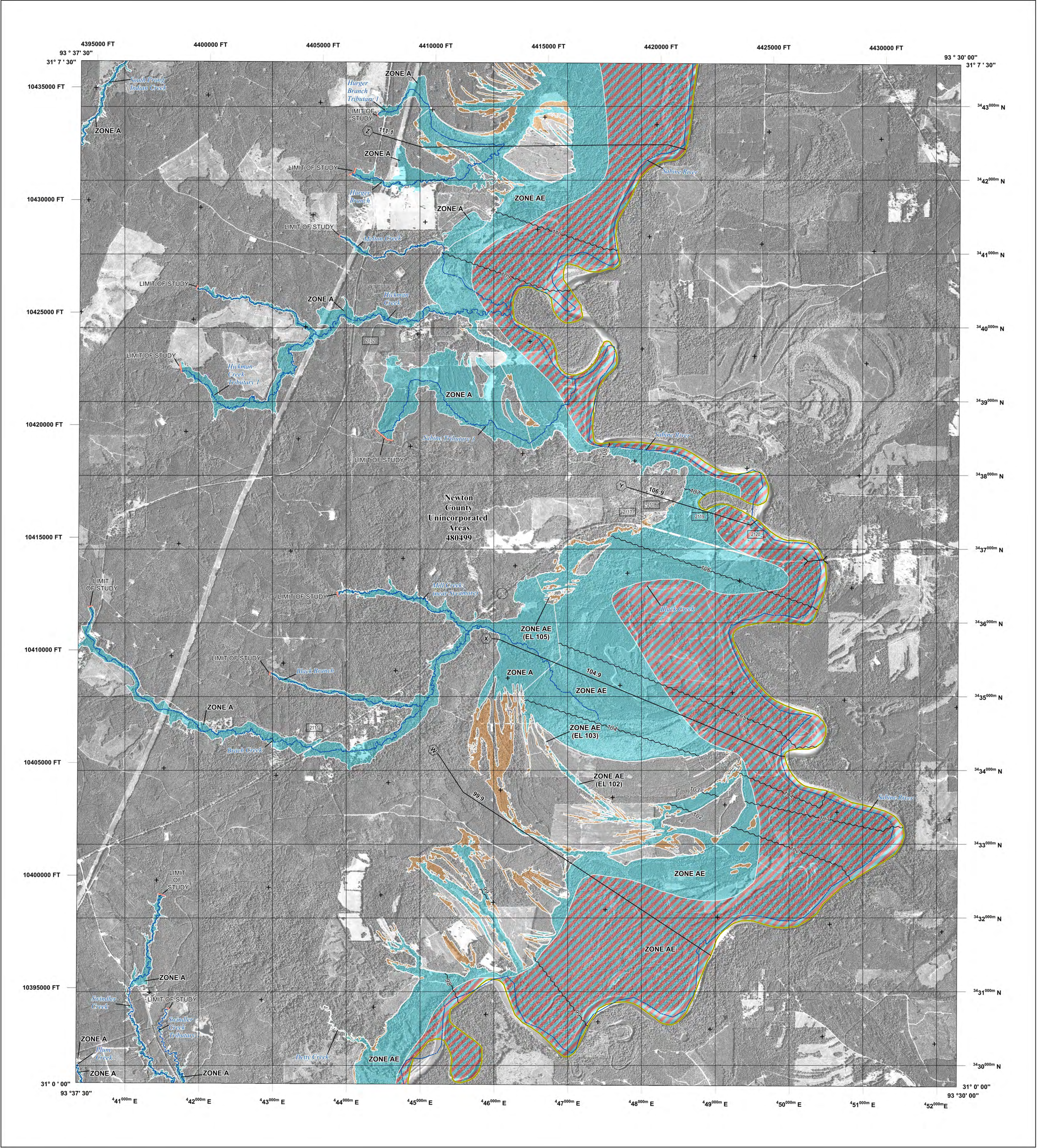
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 175 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0175	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0175D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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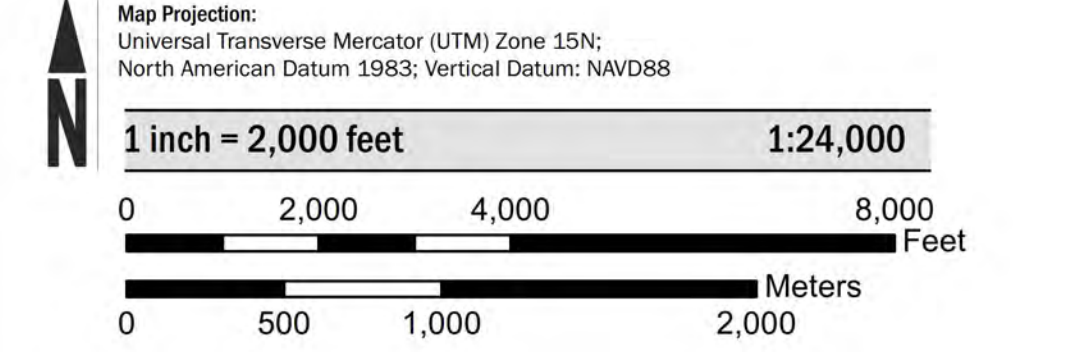
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SCALE



PANEL LOCATOR



National Flood Insurance Program

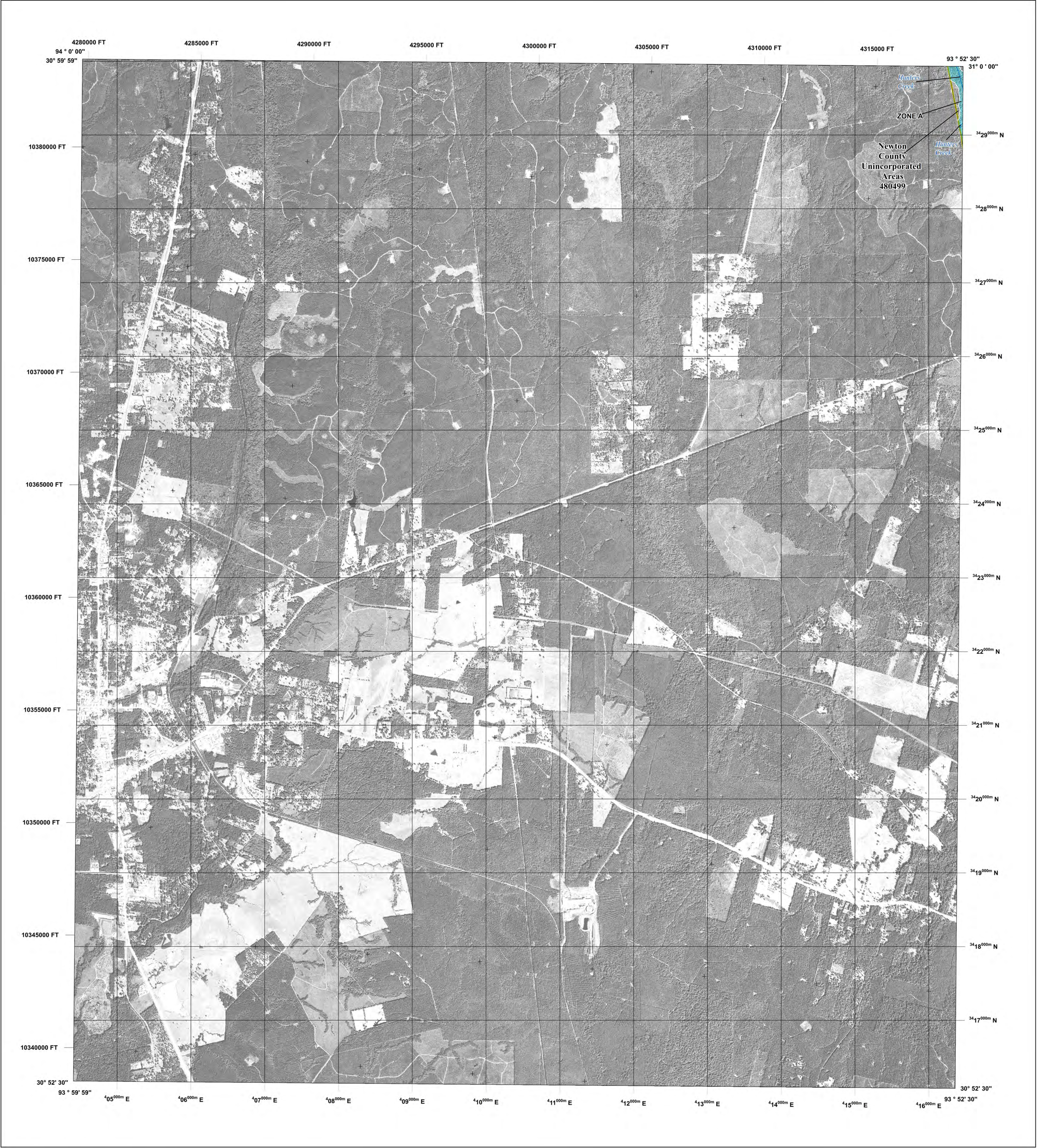
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 200 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0200	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0200D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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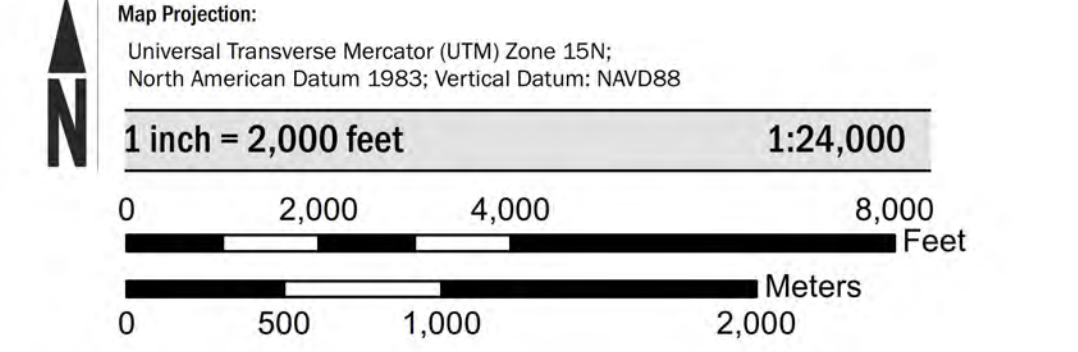
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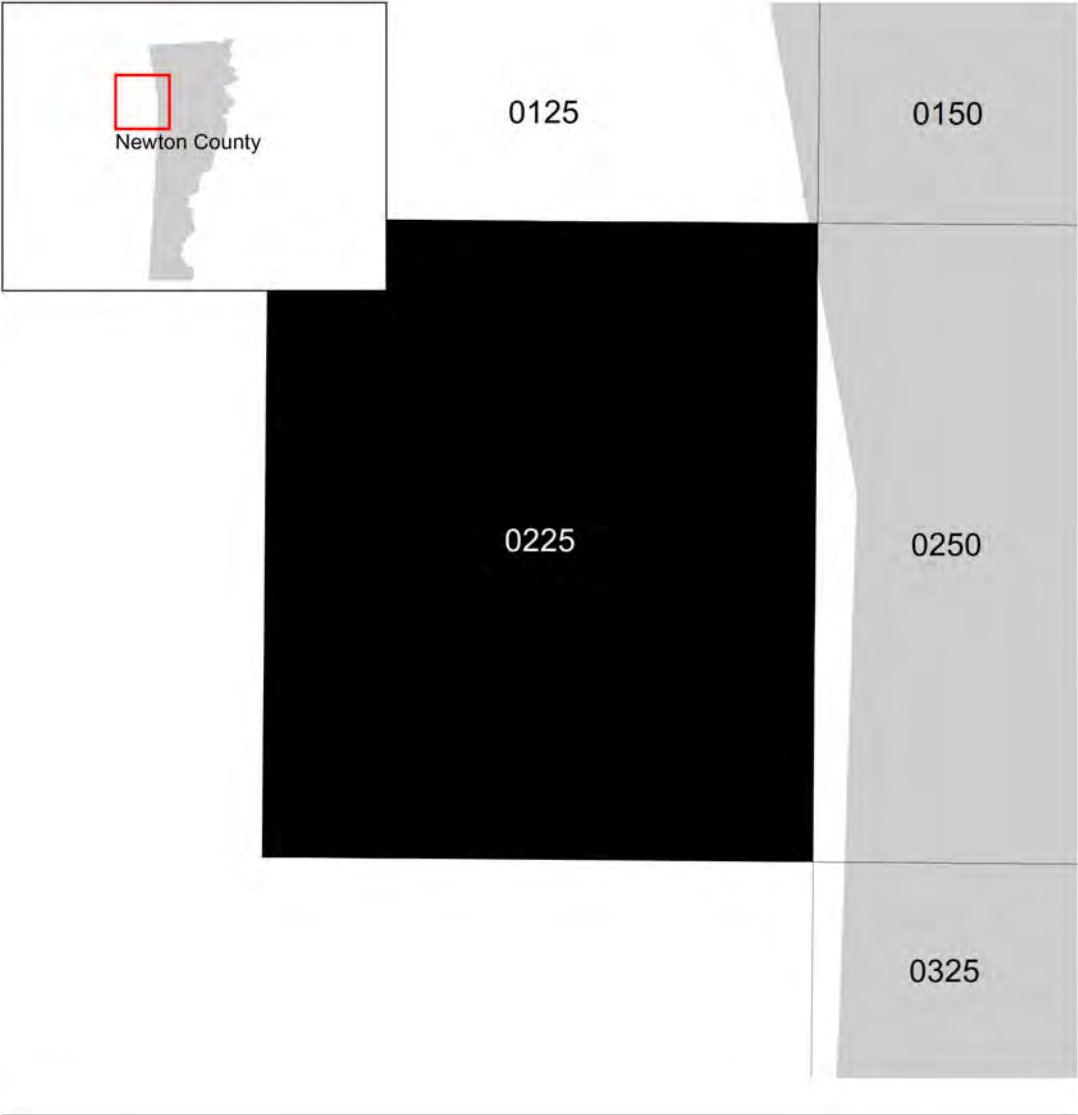
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SCALE



PANEL LOCATOR



National Flood Insurance Program

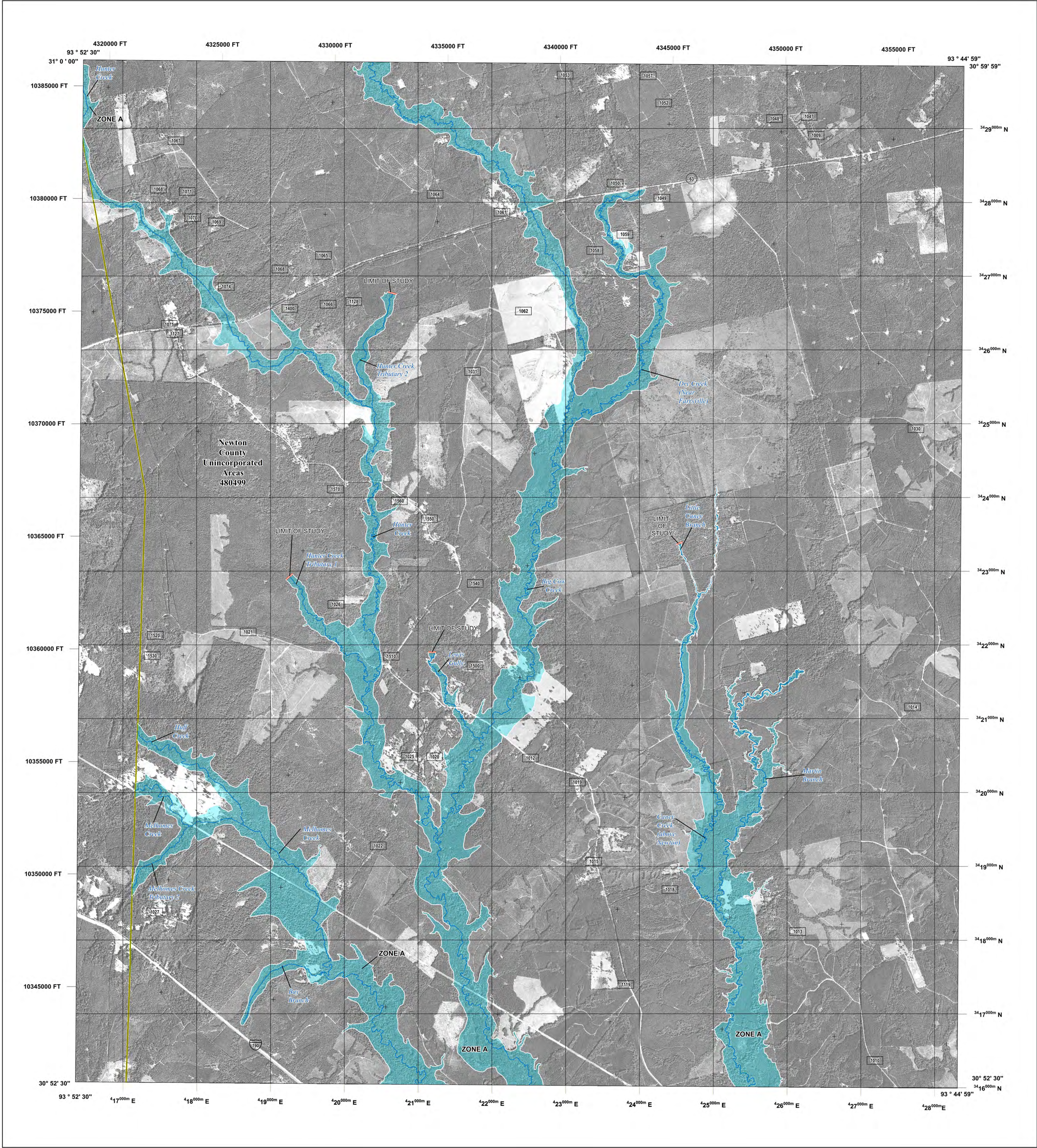
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 225 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0225	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0225D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
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DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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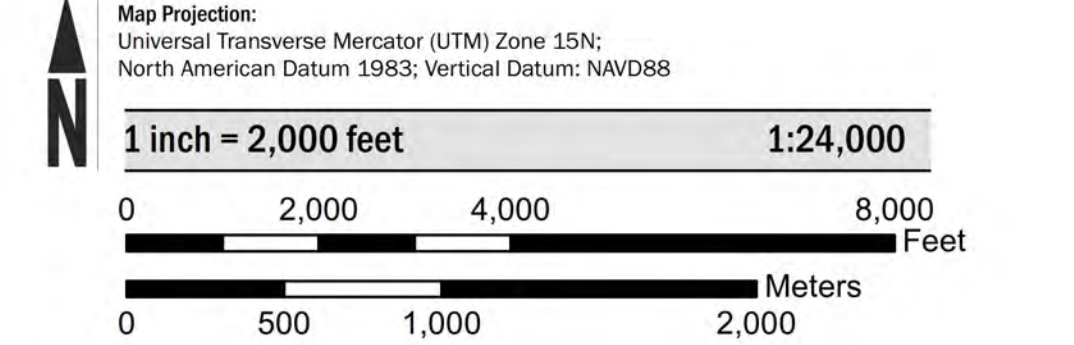
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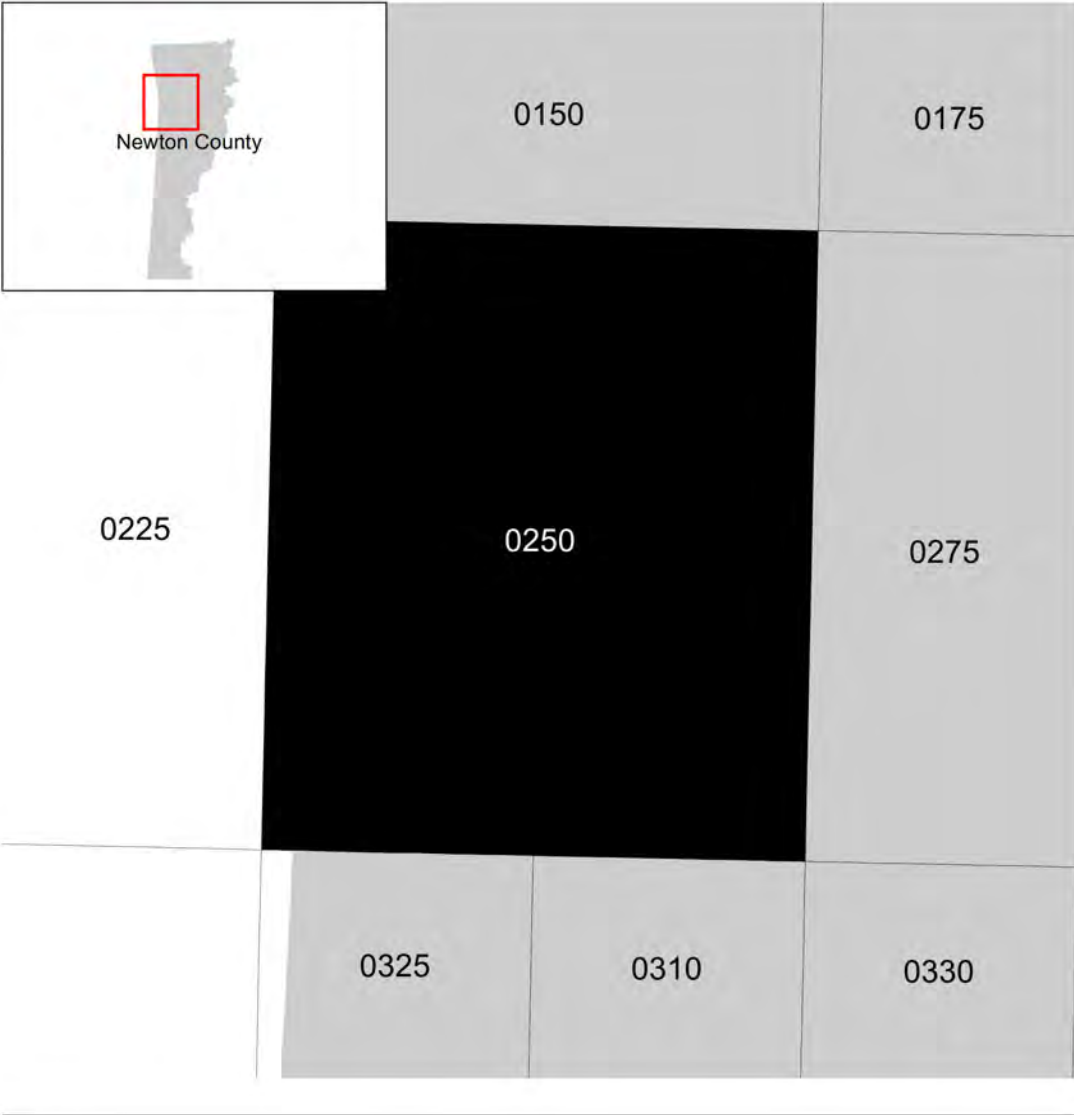
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SCALE



PANEL LOCATOR



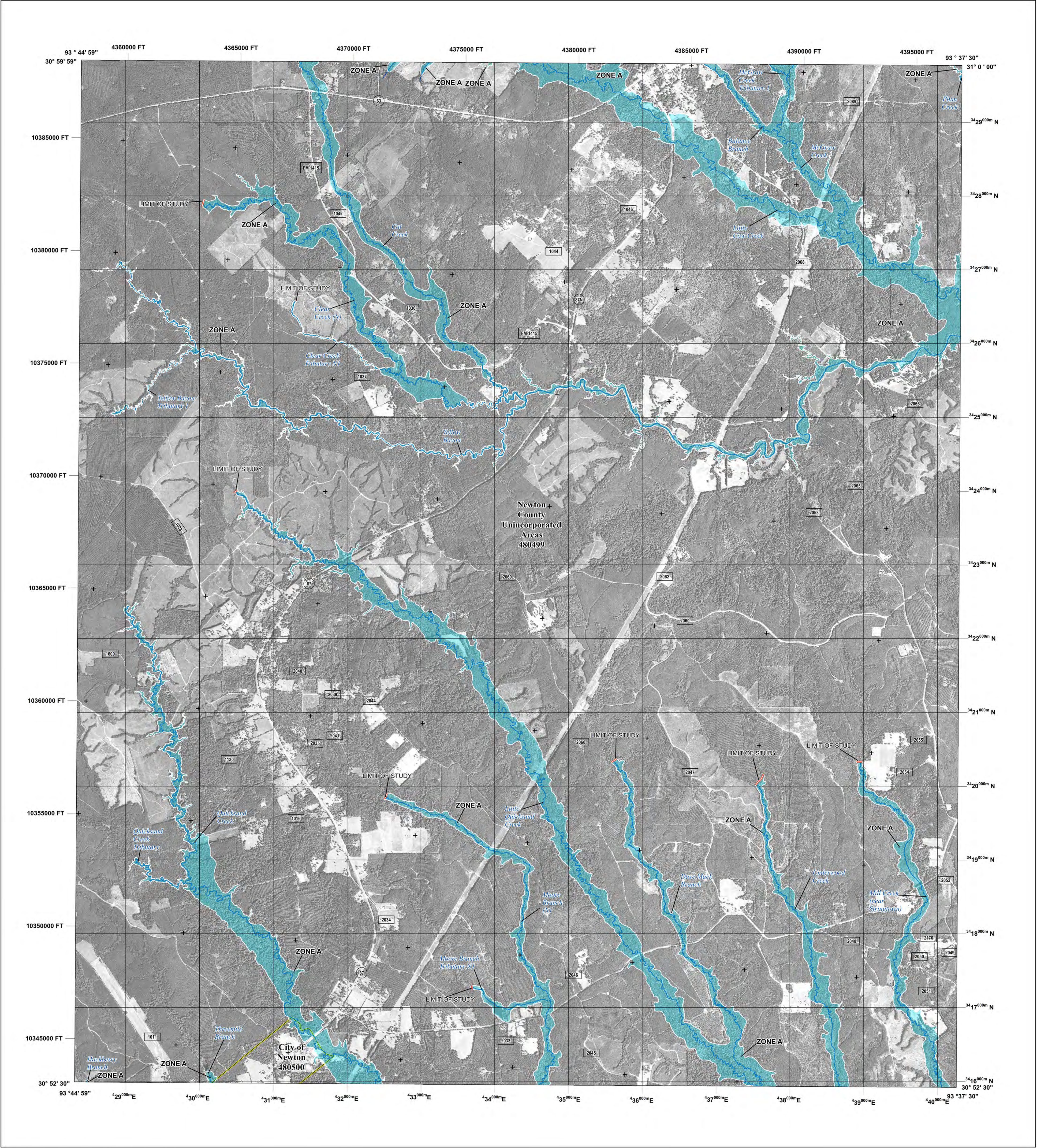
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 250 OF 775

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0250	D

Panel Contains:

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0250D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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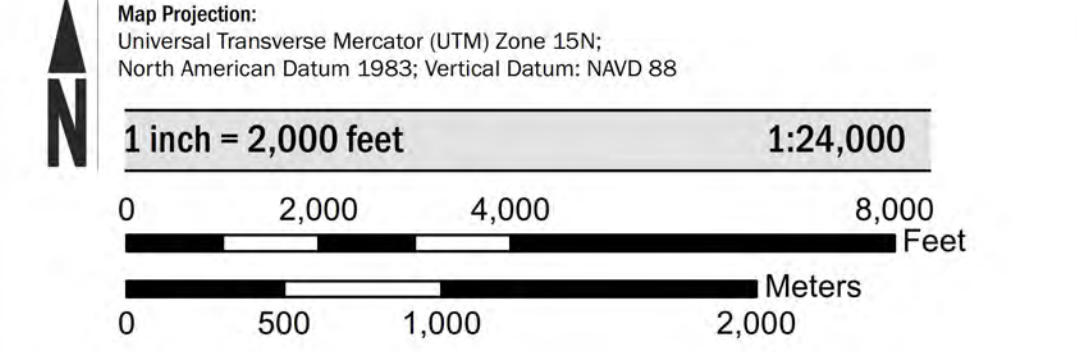
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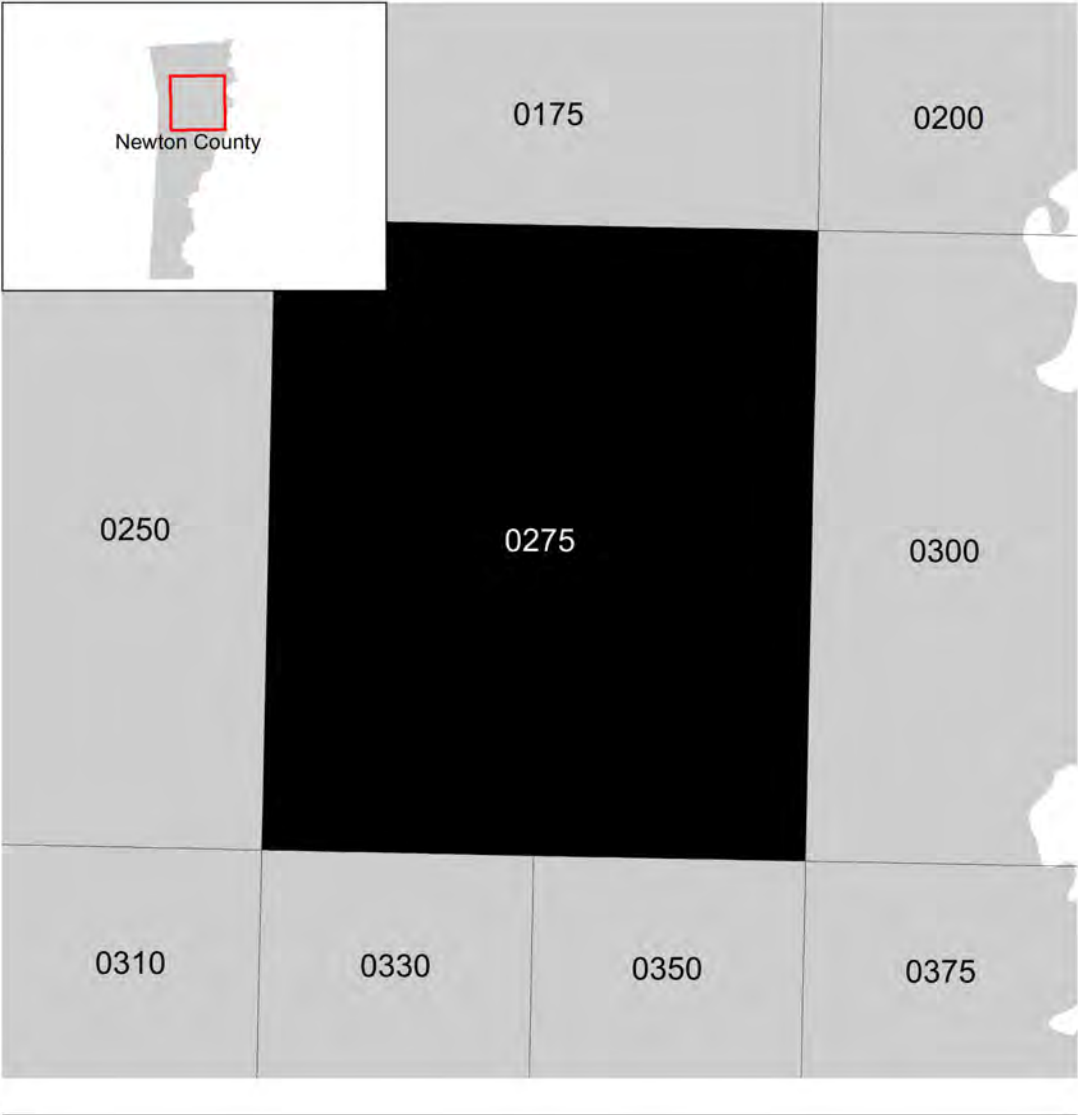
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 275 OF 775

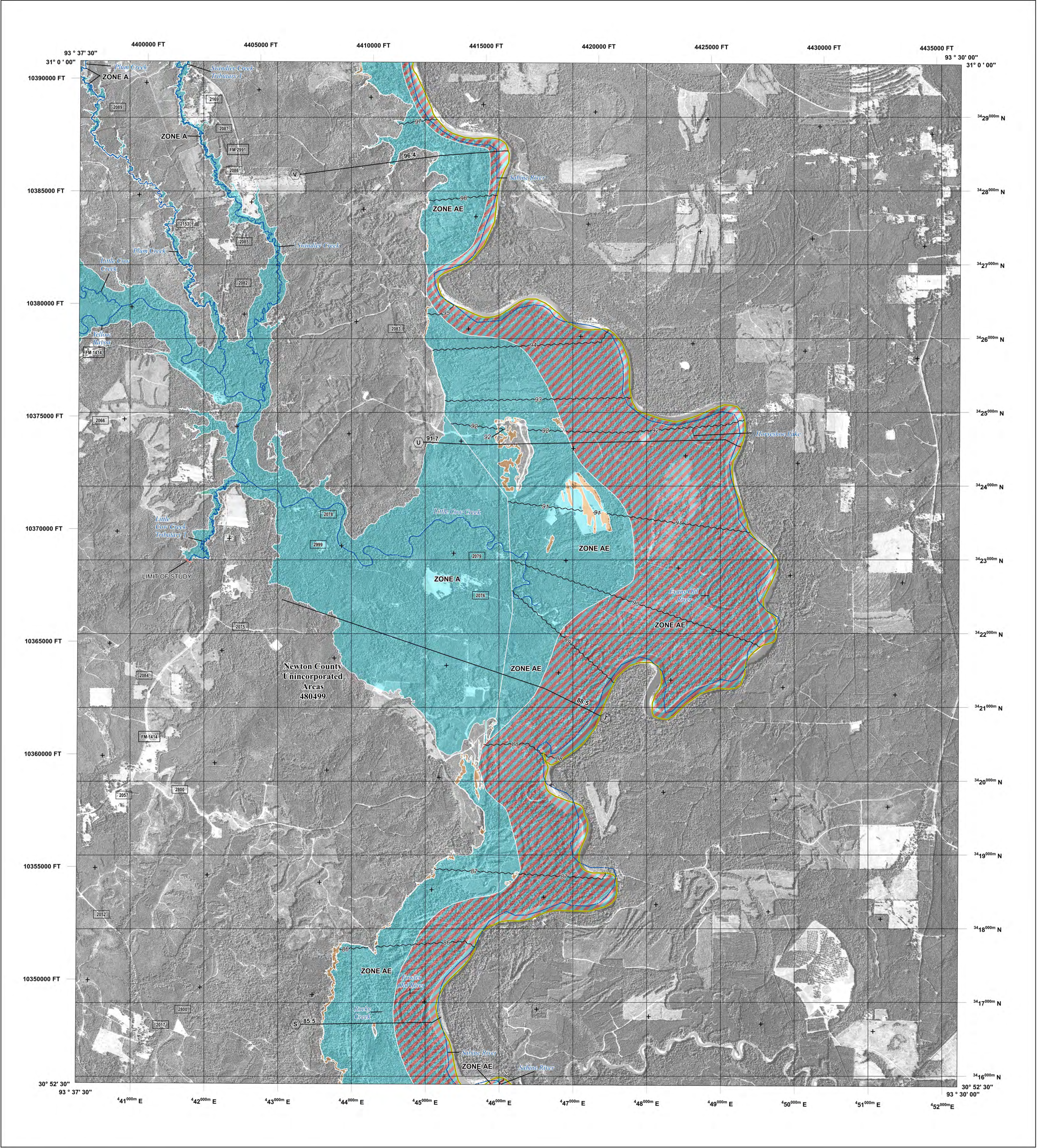
COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0275	D
CITY OF NEWTON	480500	0275	D

Panel Contains:

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0275D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
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		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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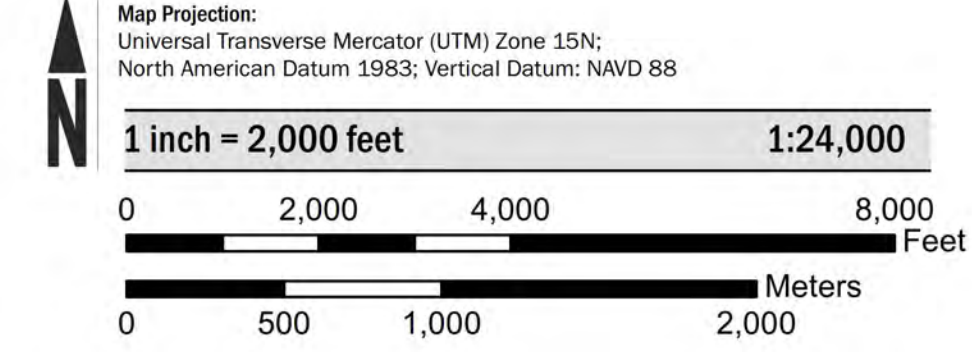
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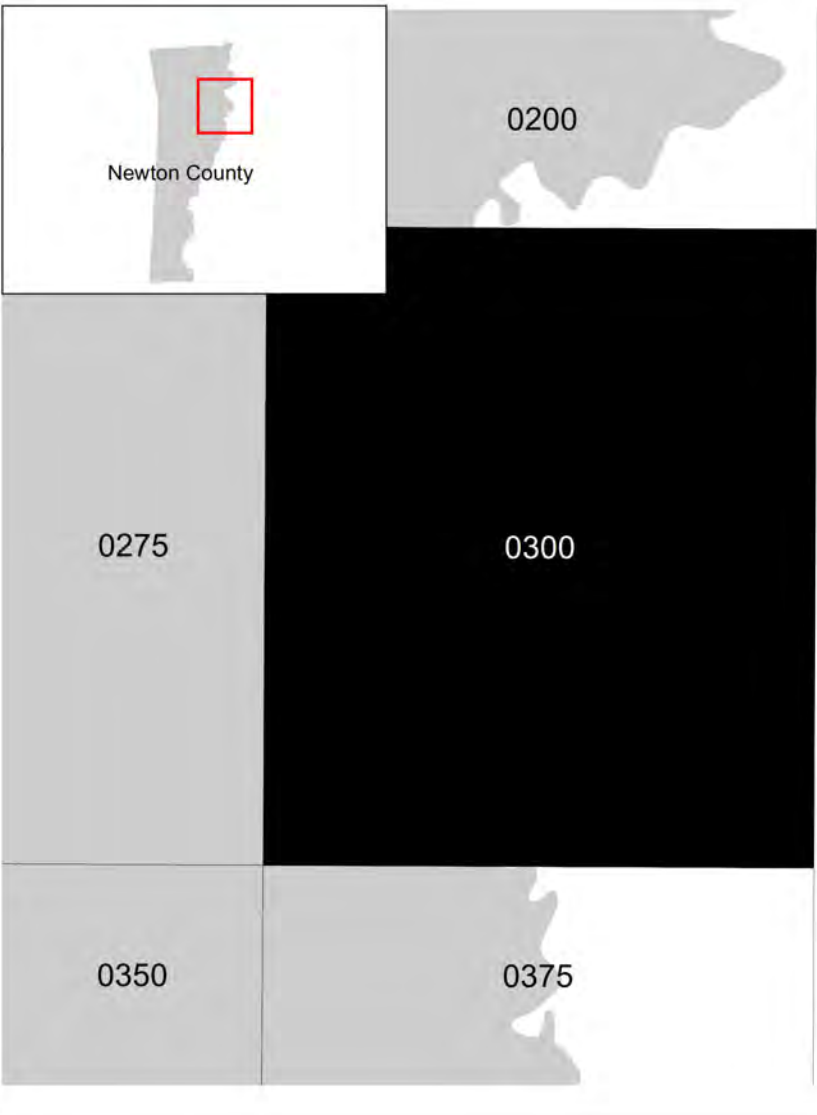
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 300 OF 775

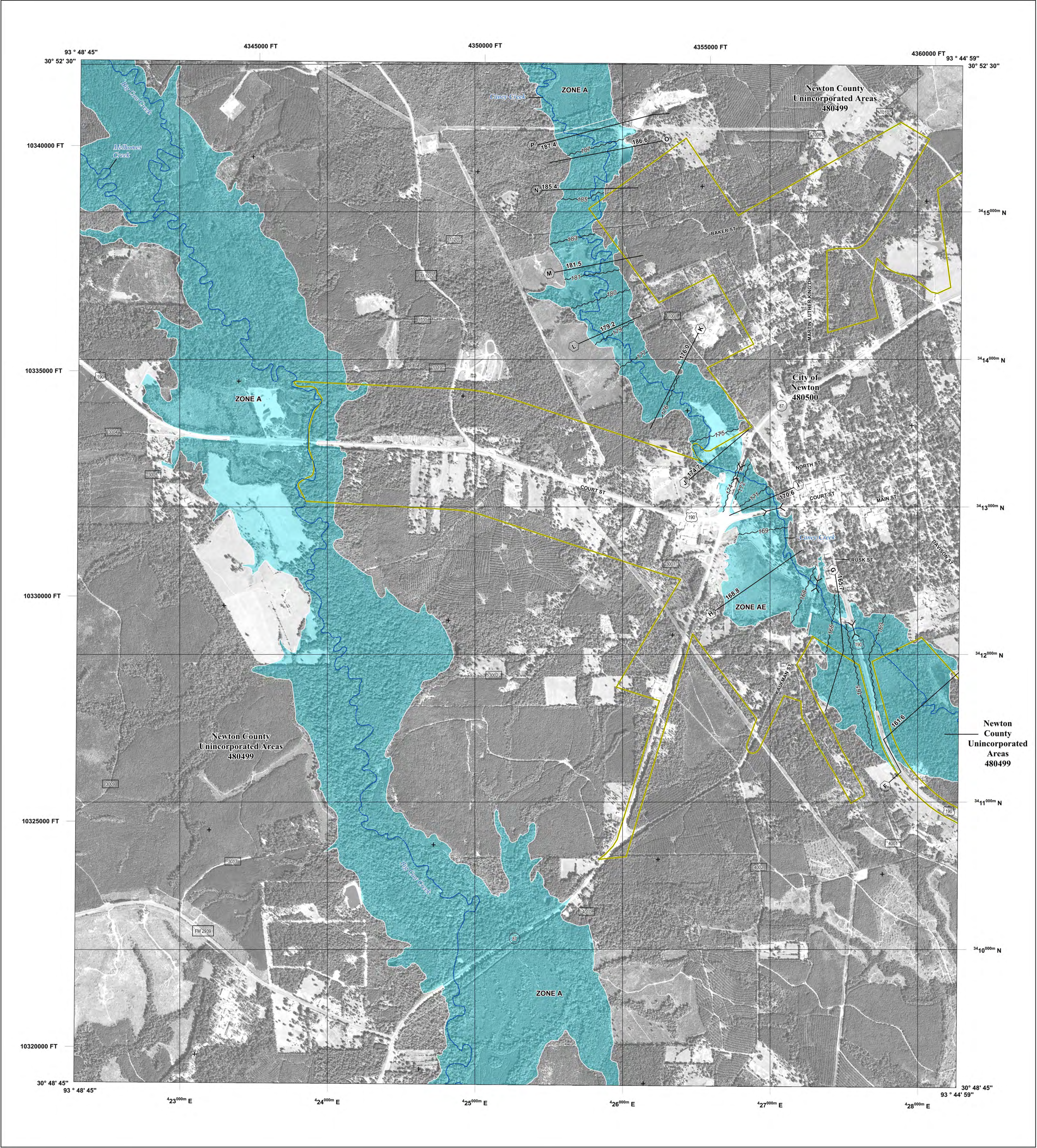
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0300	D

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0300D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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		Coastal Transect
		Coastal Transect Baseline
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		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
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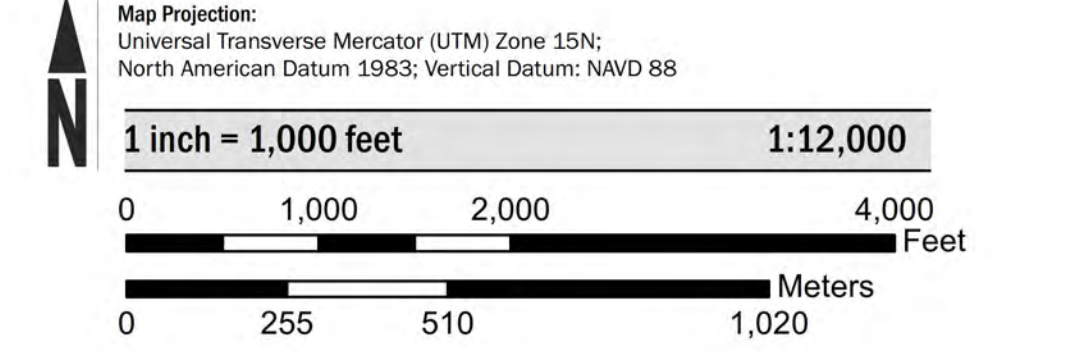
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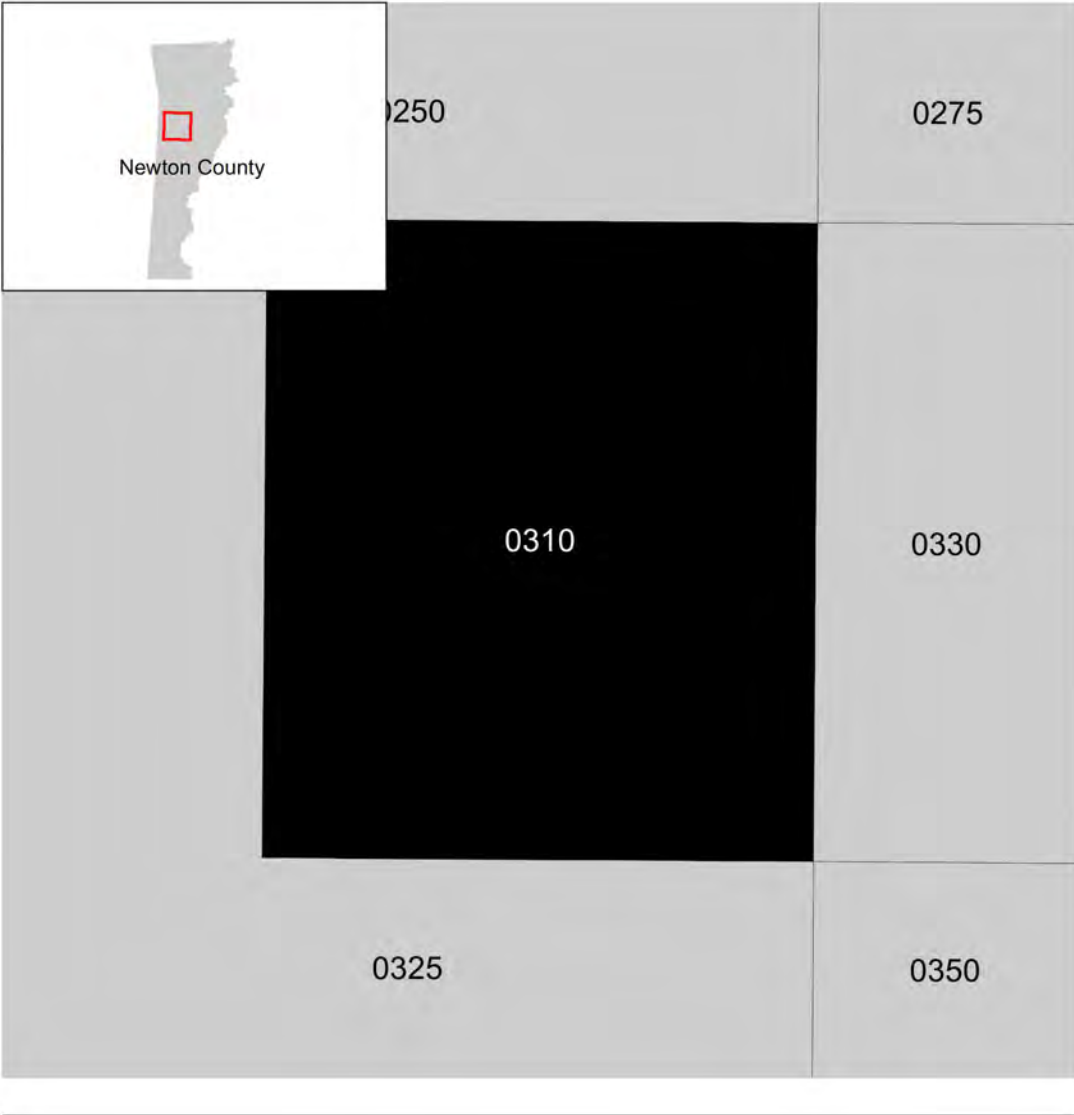
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SCALE



PANEL LOCATOR

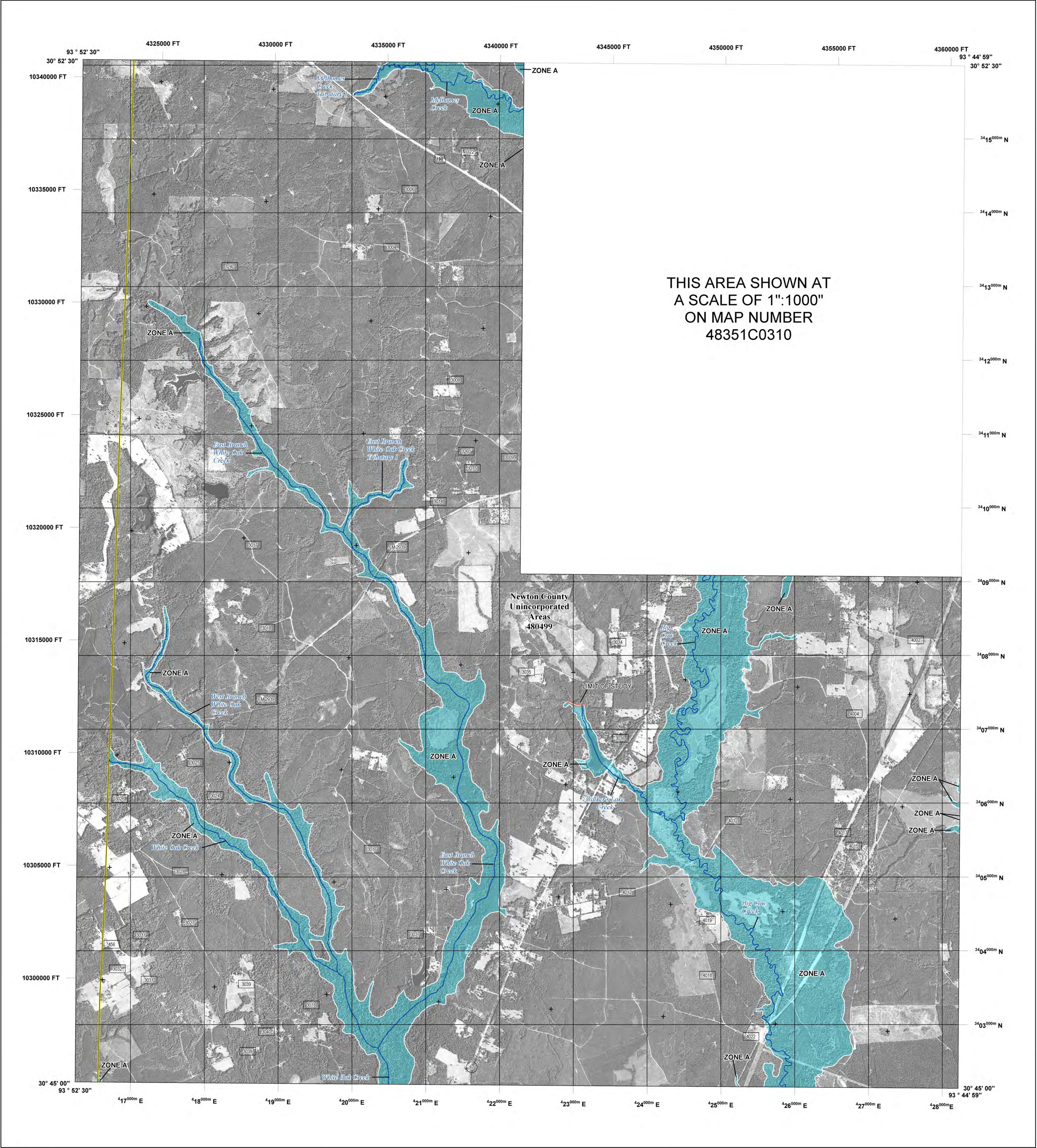


NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 310 of 775

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0310	D
CITY OF NEWTON	480500	0310	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0310D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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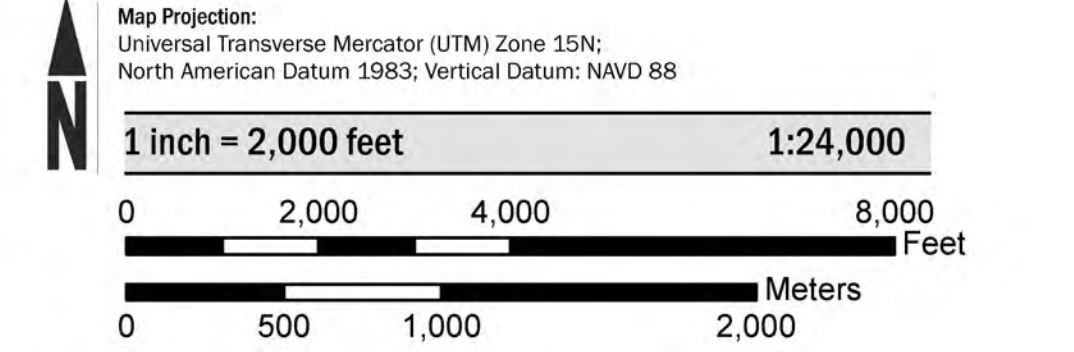
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SCALE



PANEL LOCATOR



National Flood Insurance Program

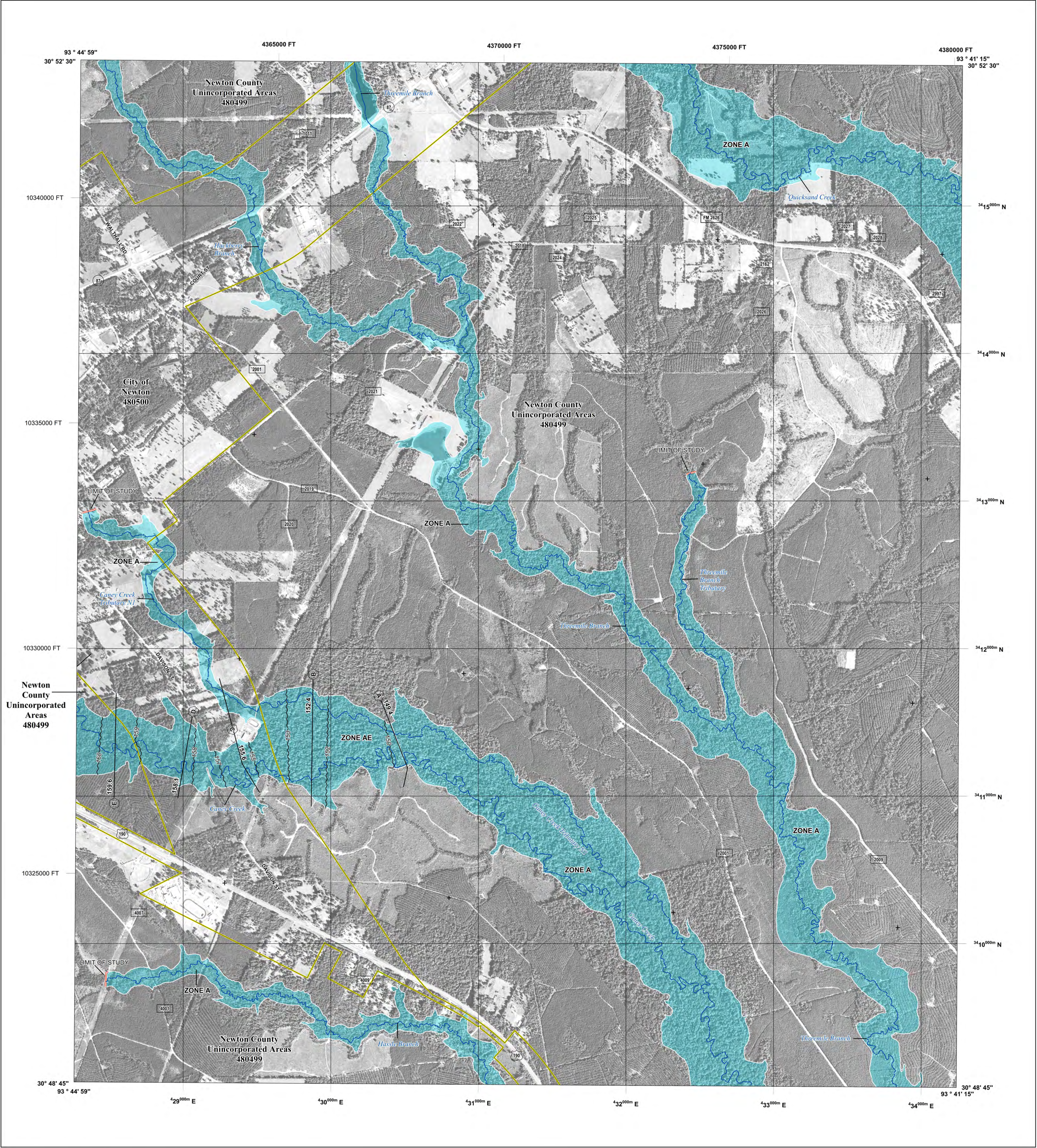
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 325 of 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0025	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0325D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
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DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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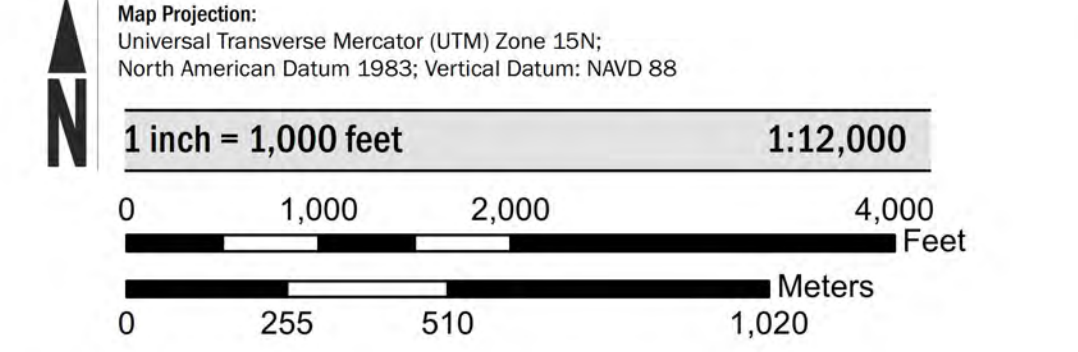
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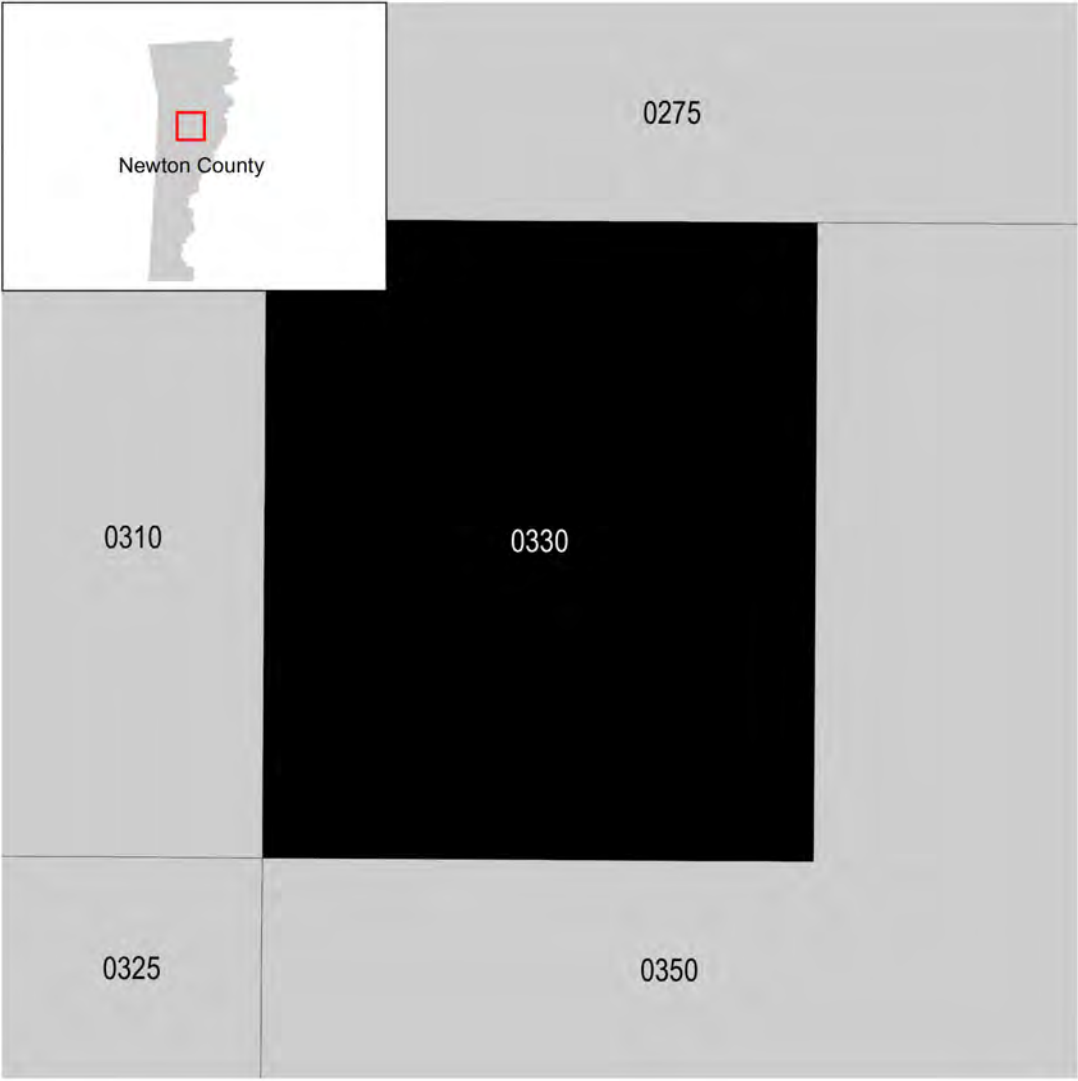
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 330 OF 775

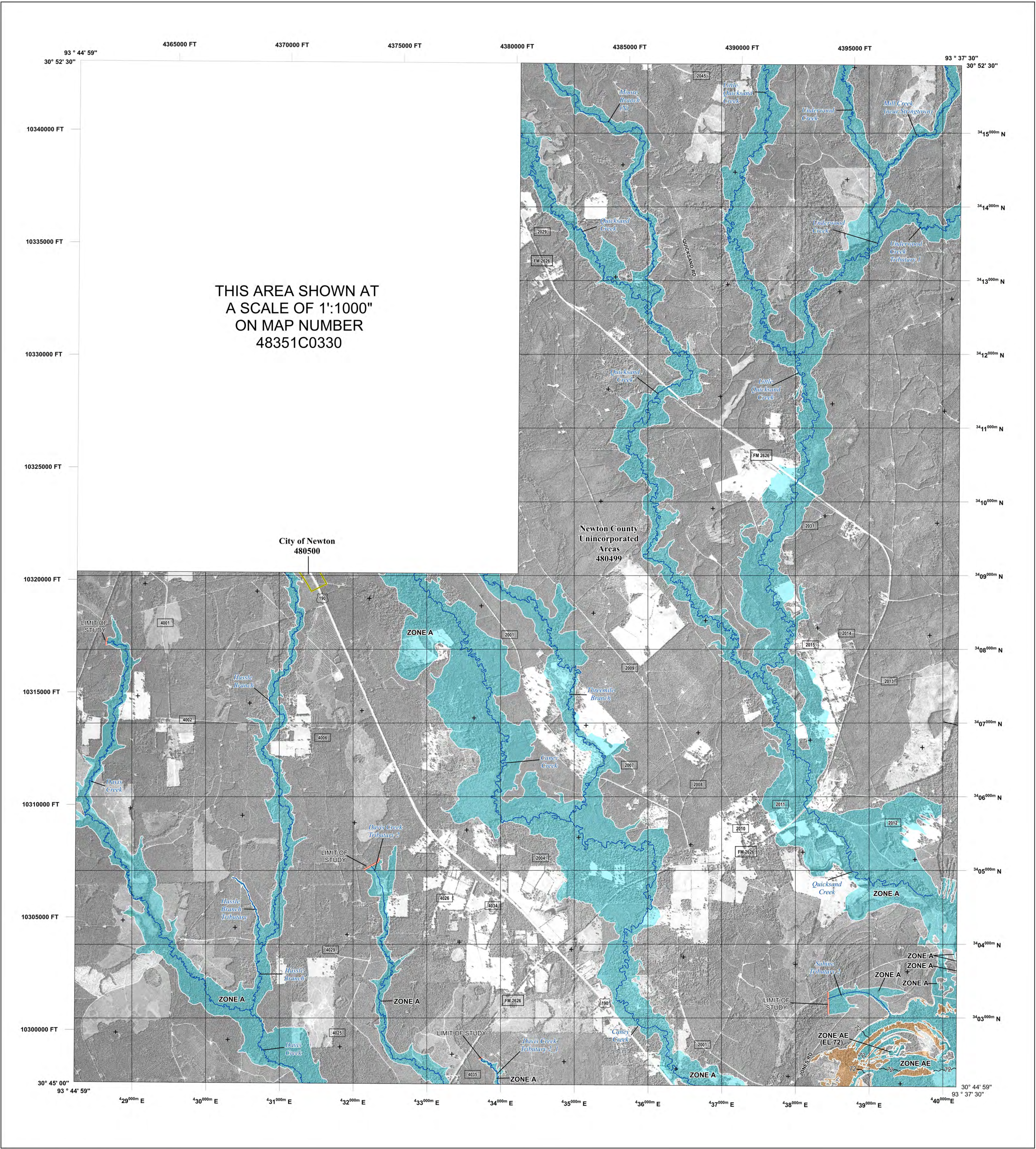
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0330	D
CITY OF NEWTON	480500	0330	D

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0330D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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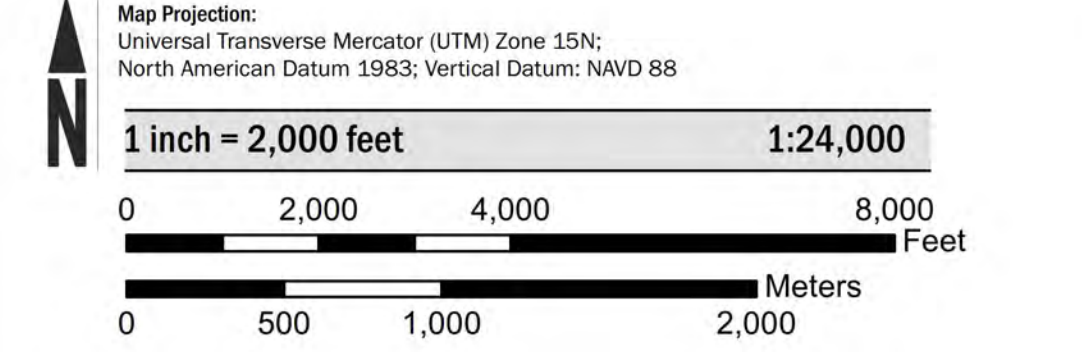
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SCALE



PANEL LOCATOR



National Flood Insurance Program

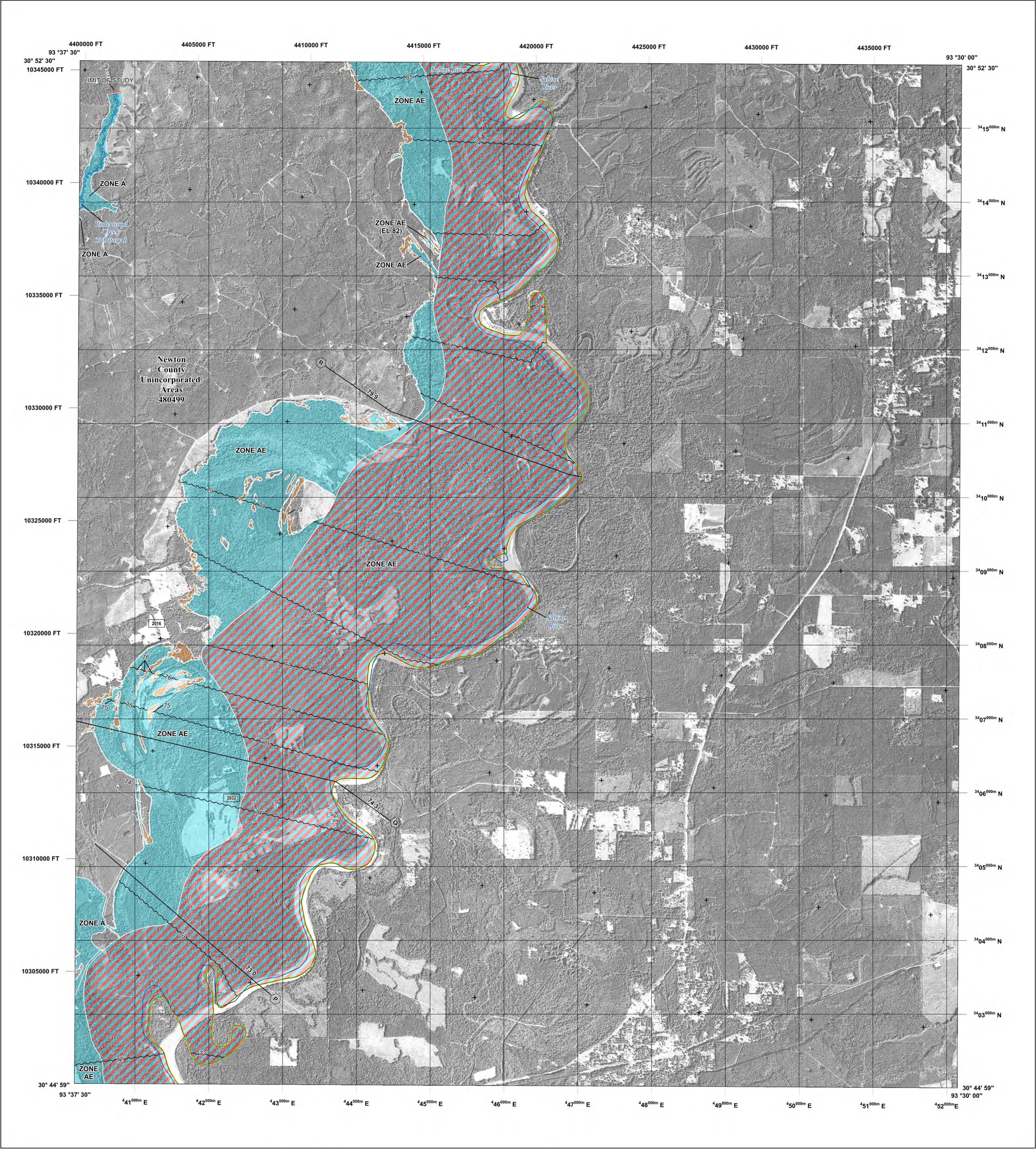
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 350 OF 775

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0350	D
CITY OF NEWTON	480500	0350	D

Panel Contains:

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0350D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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[HTTP://MSC.FEMA.GOV](http://msc.fema.gov)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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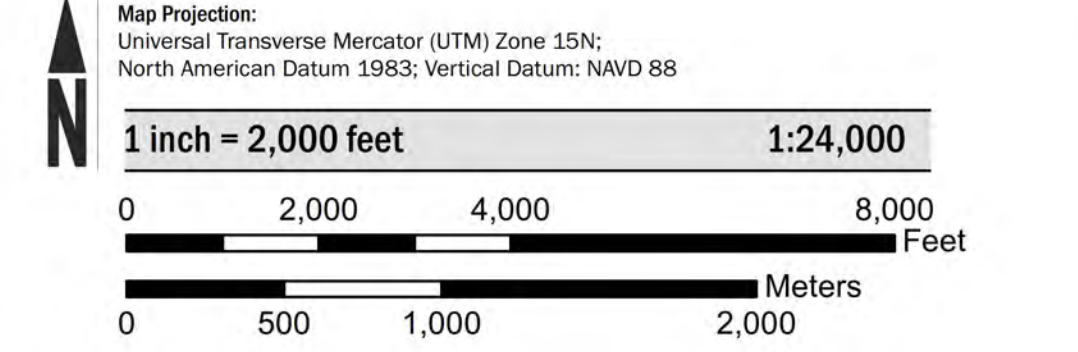
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 375 OF 775

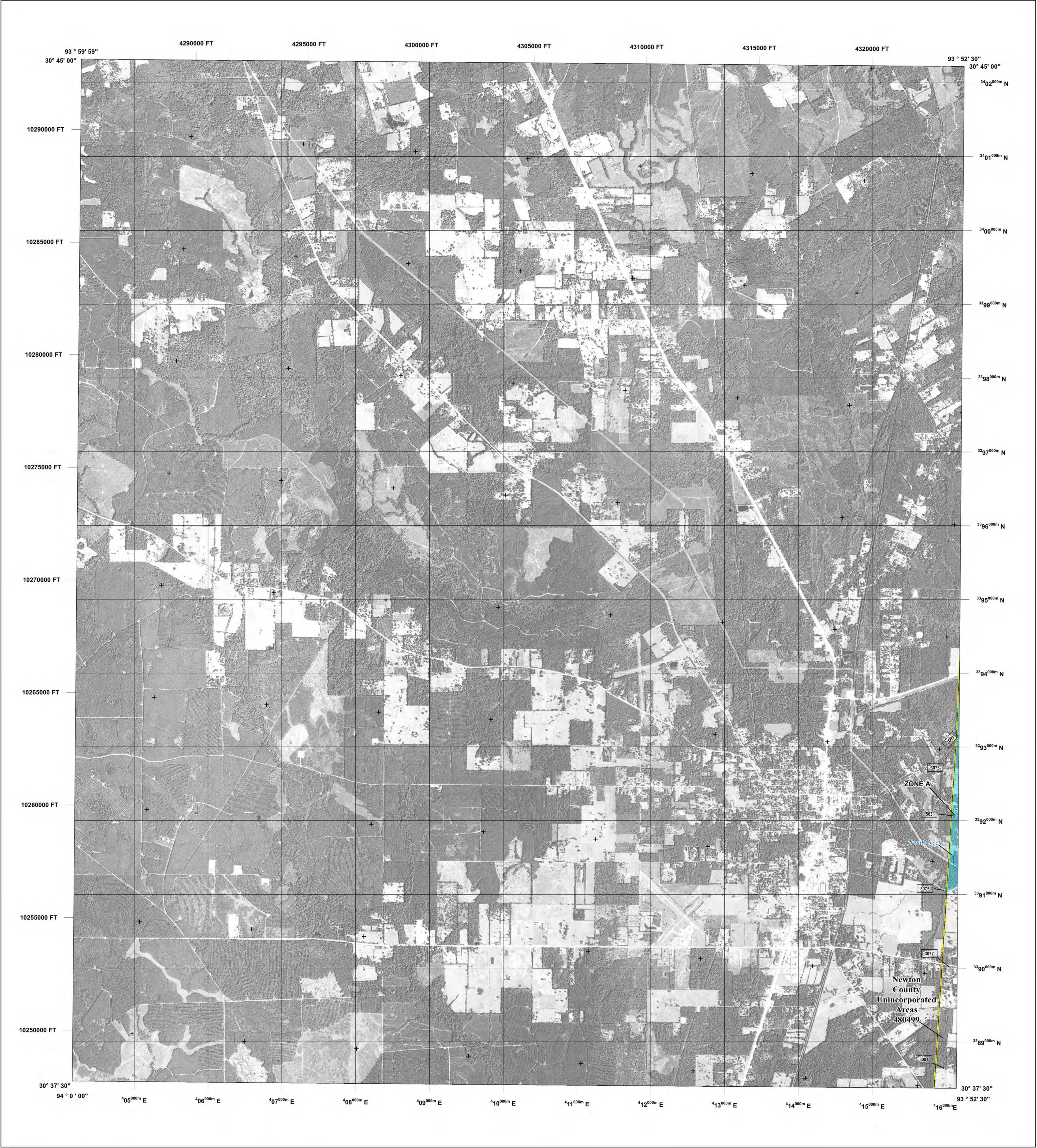
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0375	D

VERSION NUMBER
2.3.3.2

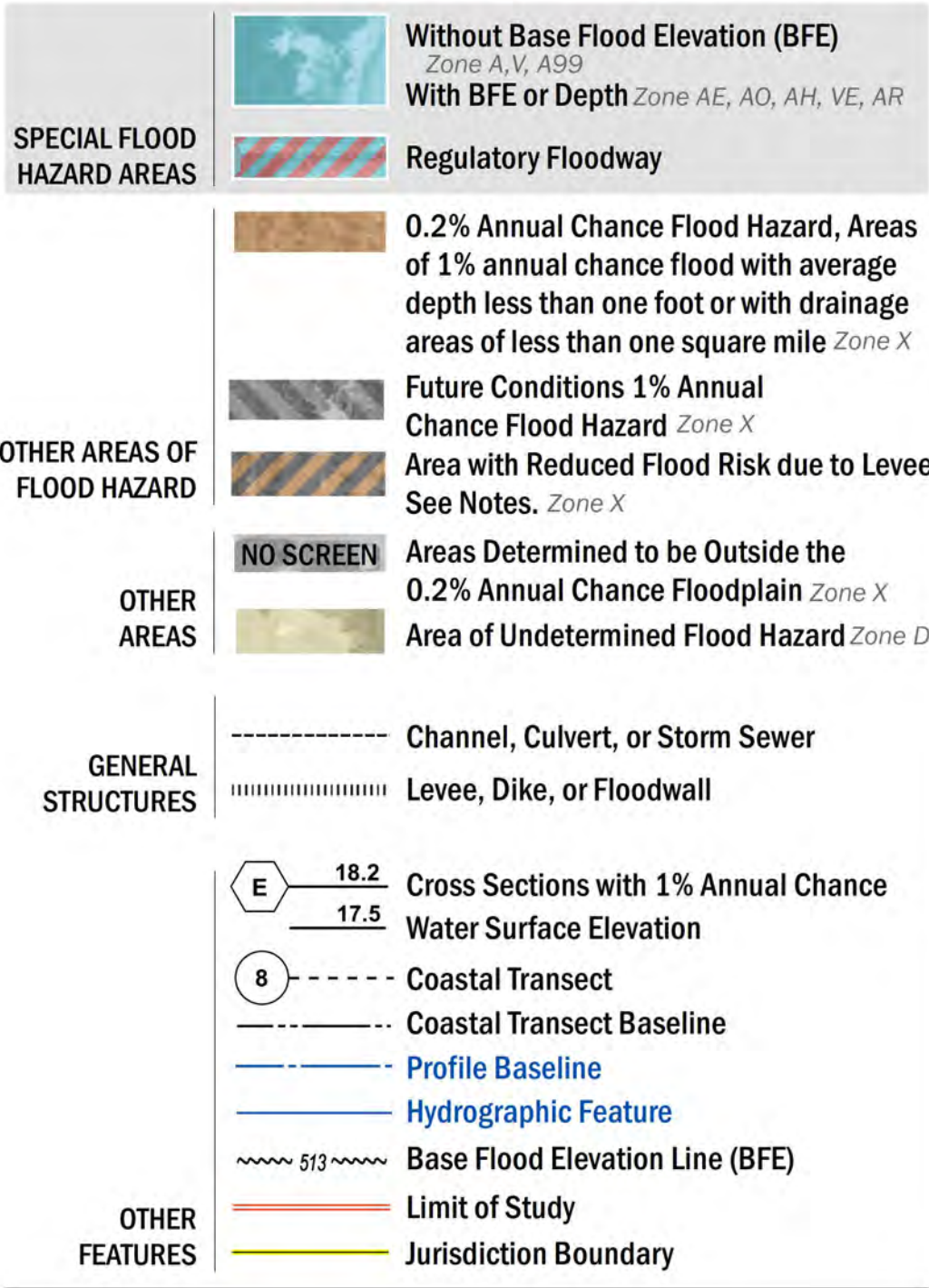
MAP NUMBER
48351C0375D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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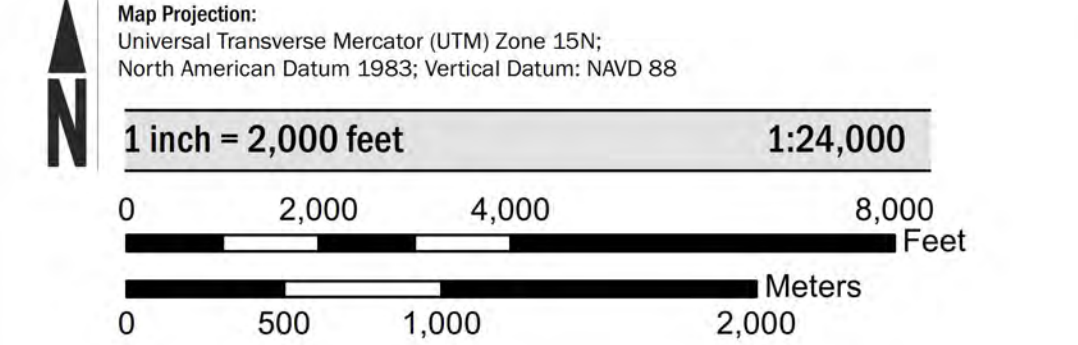
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SCALE



PANEL LOCATOR

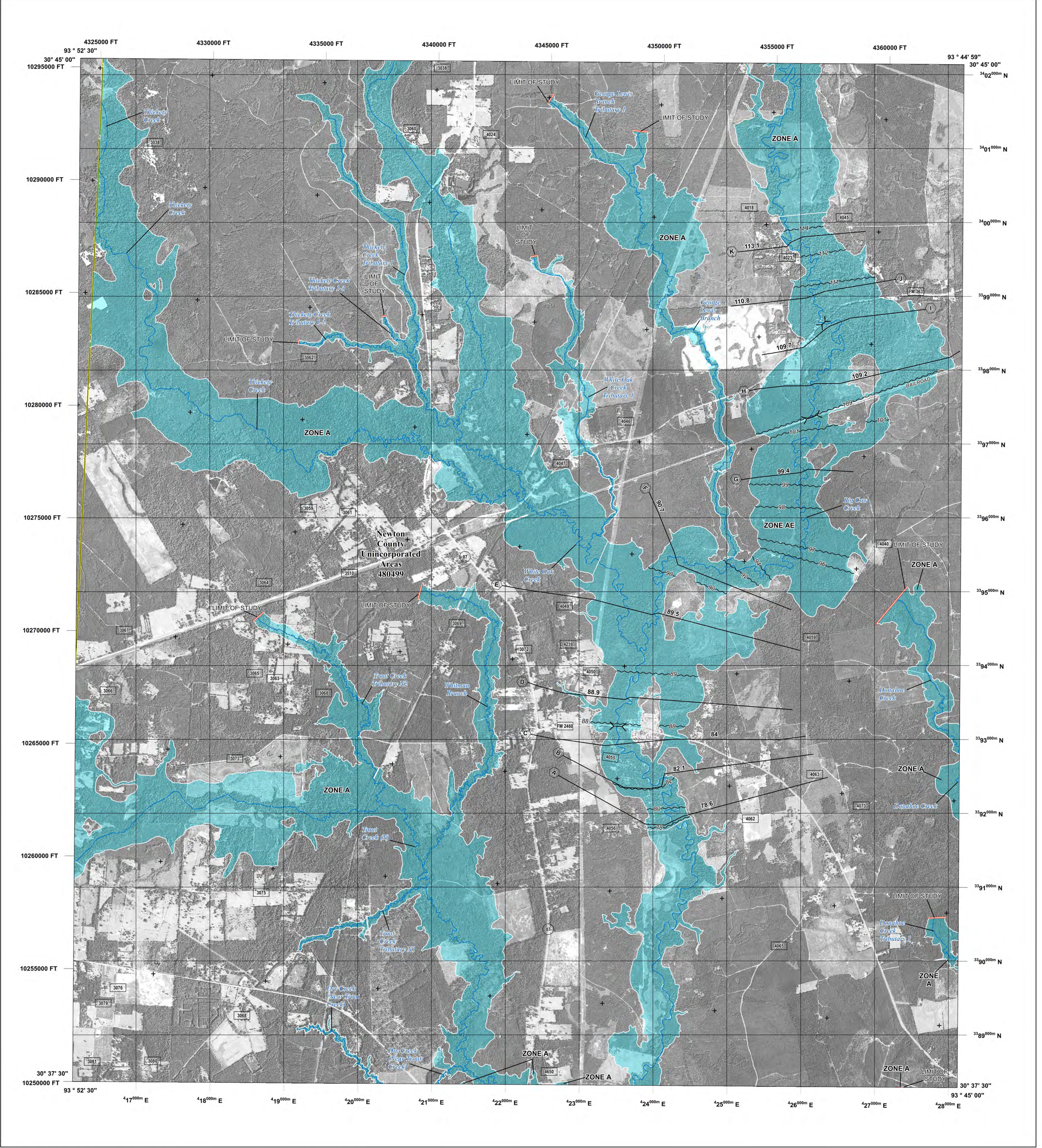


NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 400 OF 775

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0400	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0400D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
OTHER AREAS		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
GENERAL STRUCTURES		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
OTHER FEATURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
OTHER FEATURES		Profile Baseline
		Hydrographic Feature
OTHER FEATURES		Base Flood Elevation Line (BFE)
		Limit of Study
OTHER FEATURES		Jurisdiction Boundary
		Jurisdiction Boundary

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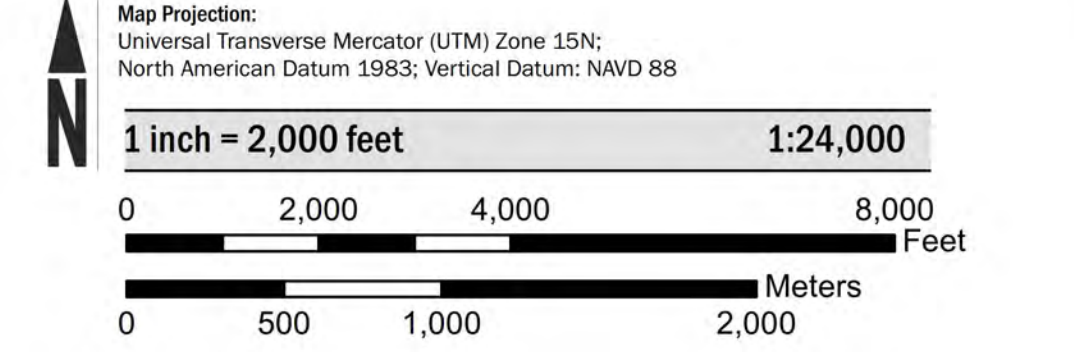
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SCALE



PANEL LOCATOR



National Flood Insurance Program

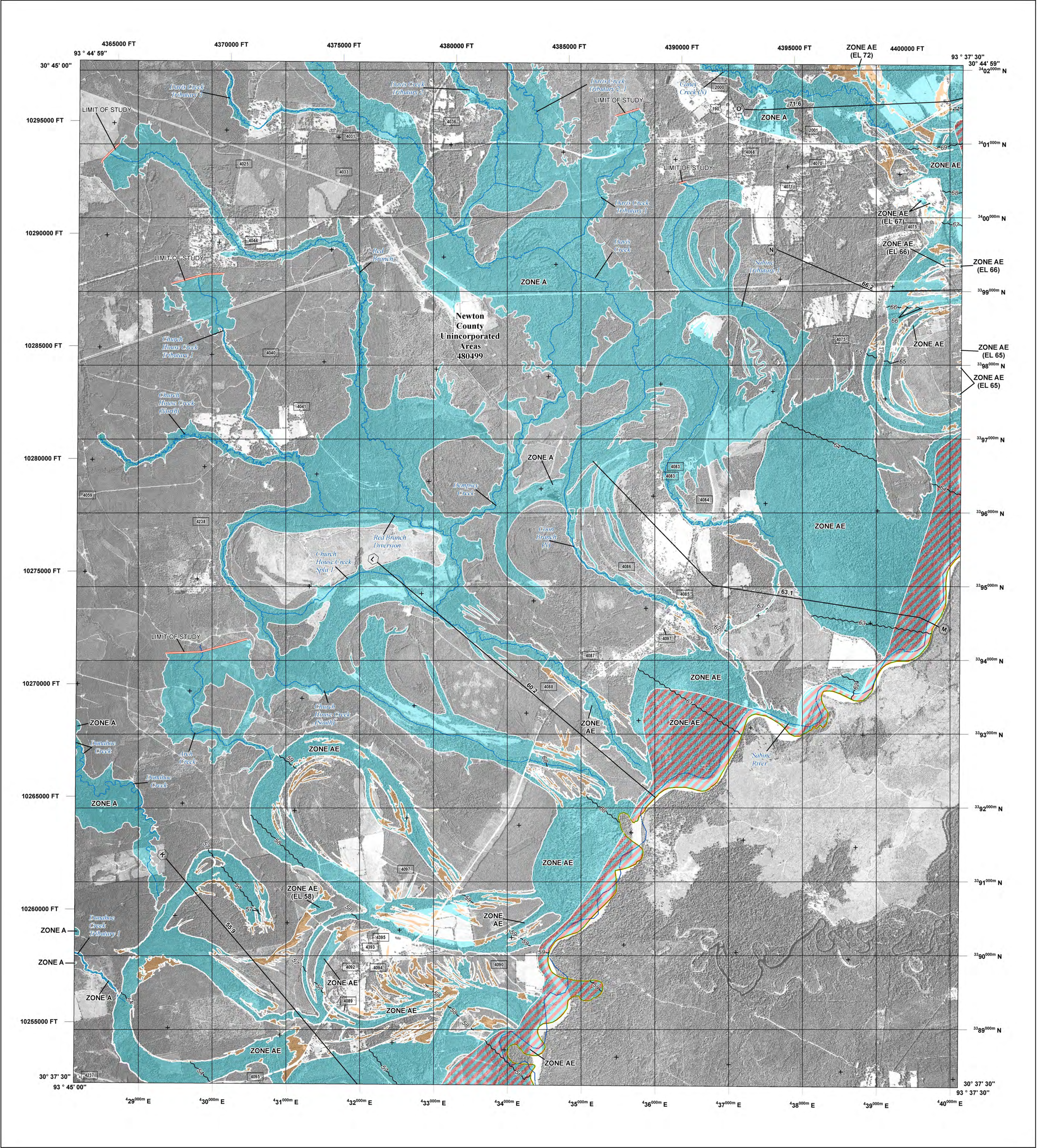
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 425 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0425	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0425D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
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		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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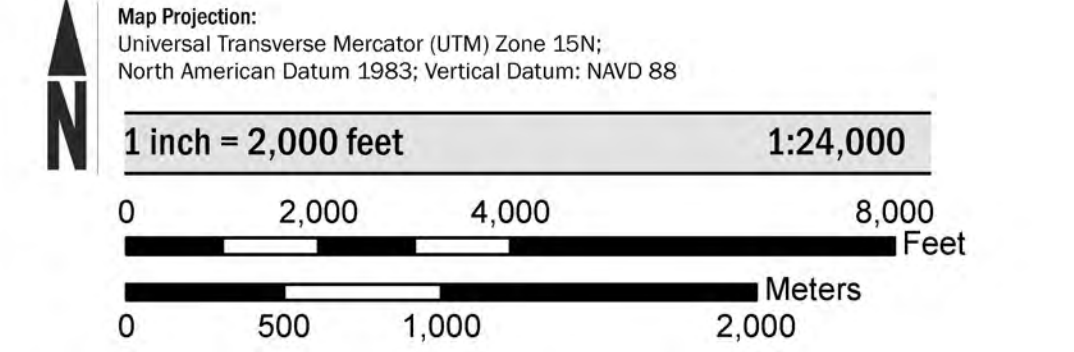
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SCALE



PANEL LOCATOR



National Flood Insurance Program

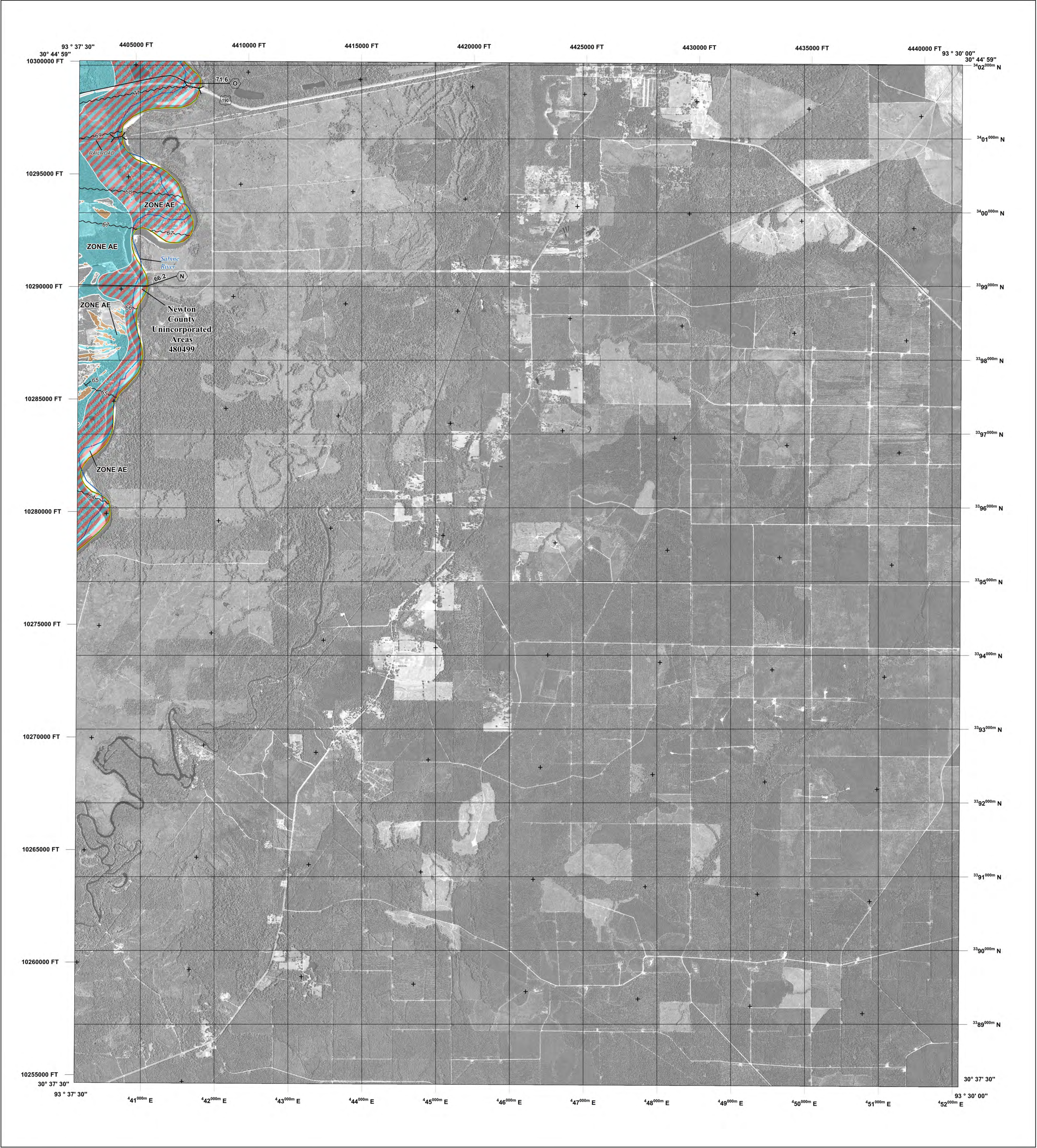
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 450 of 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0450	0

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0450D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
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		Future Conditions 1% Annual Chance Flood Hazard Zone X
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		Coastal Transect
		Coastal Transect Baseline
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		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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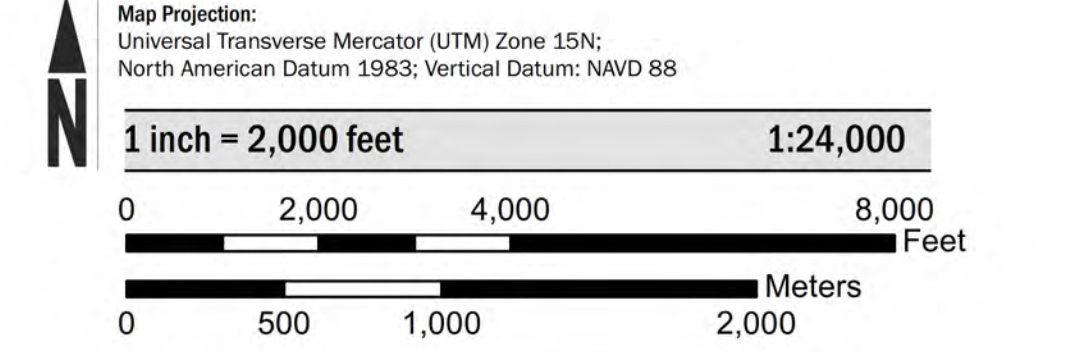
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 475 OF 775

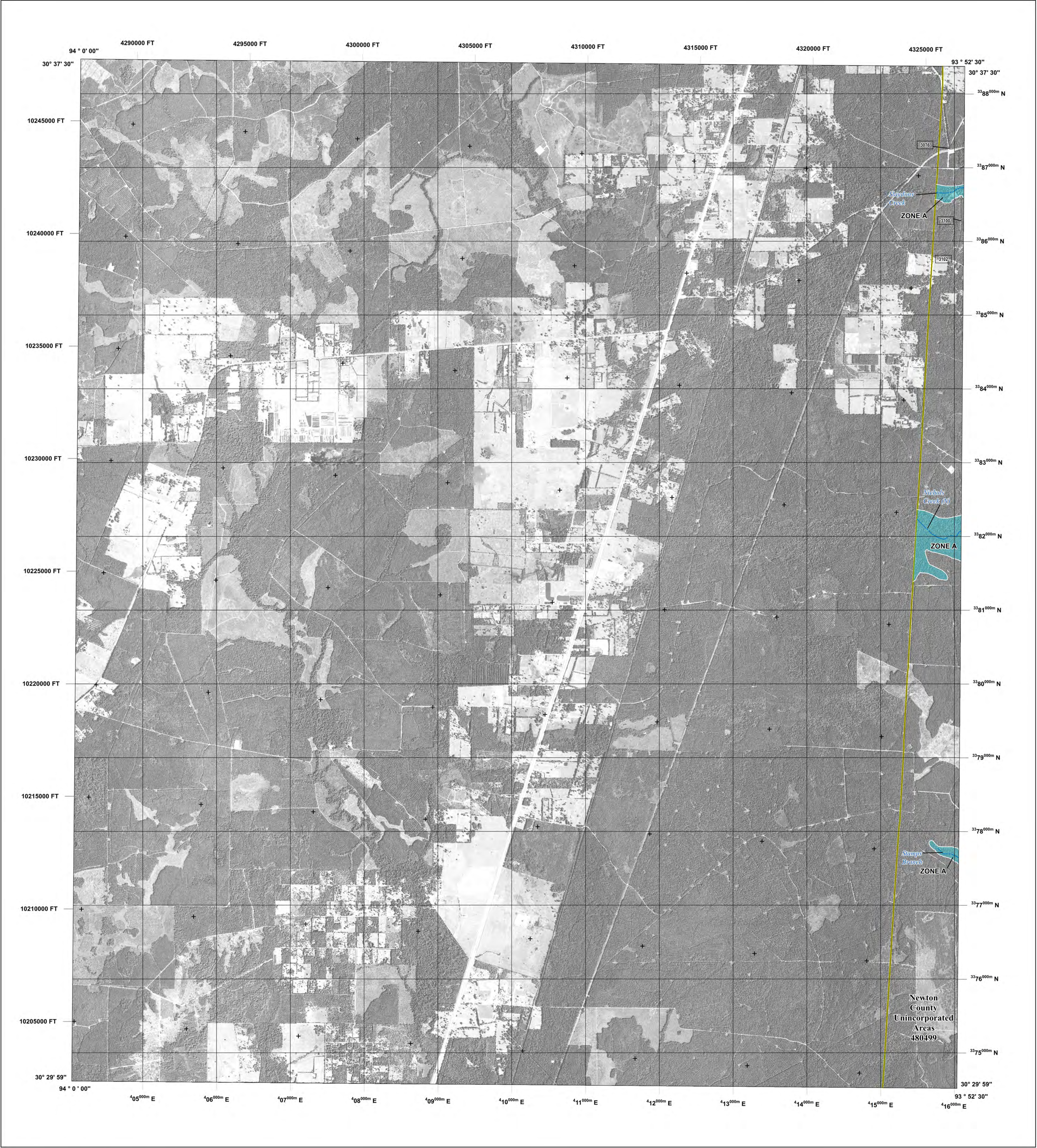
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0475	D

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0475D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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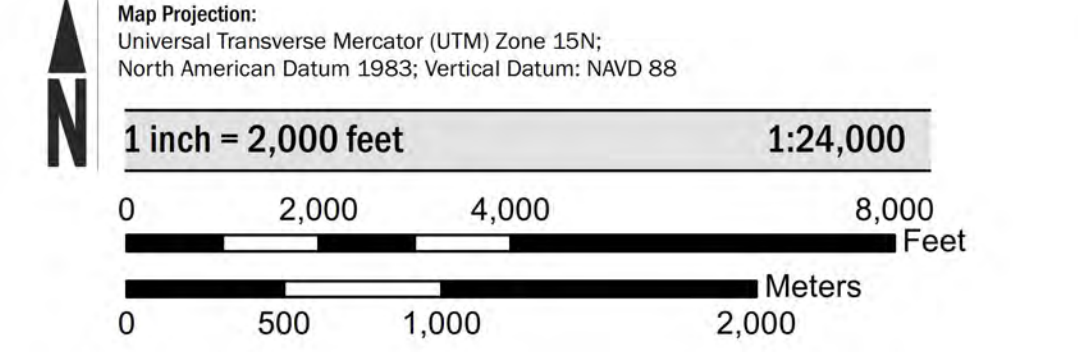
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SCALE



PANEL LOCATOR



National Flood Insurance Program

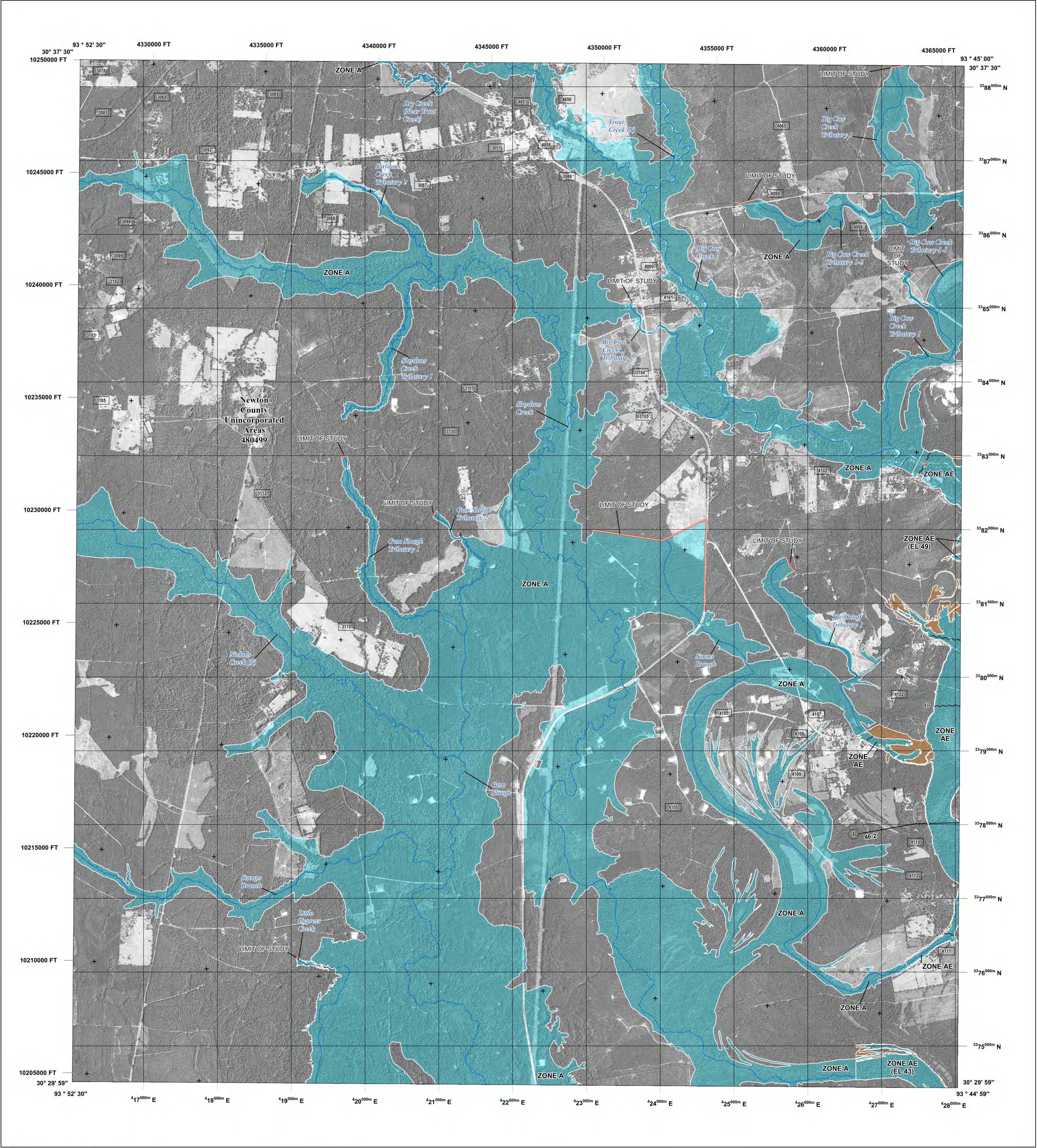
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 500 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0500	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0500D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

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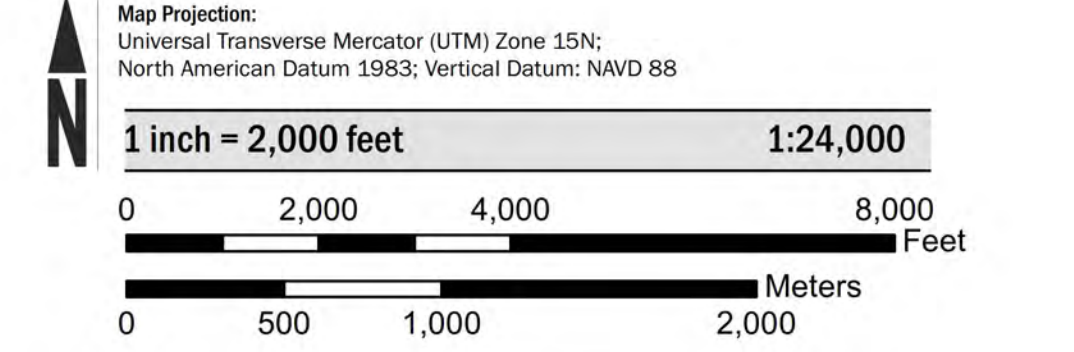
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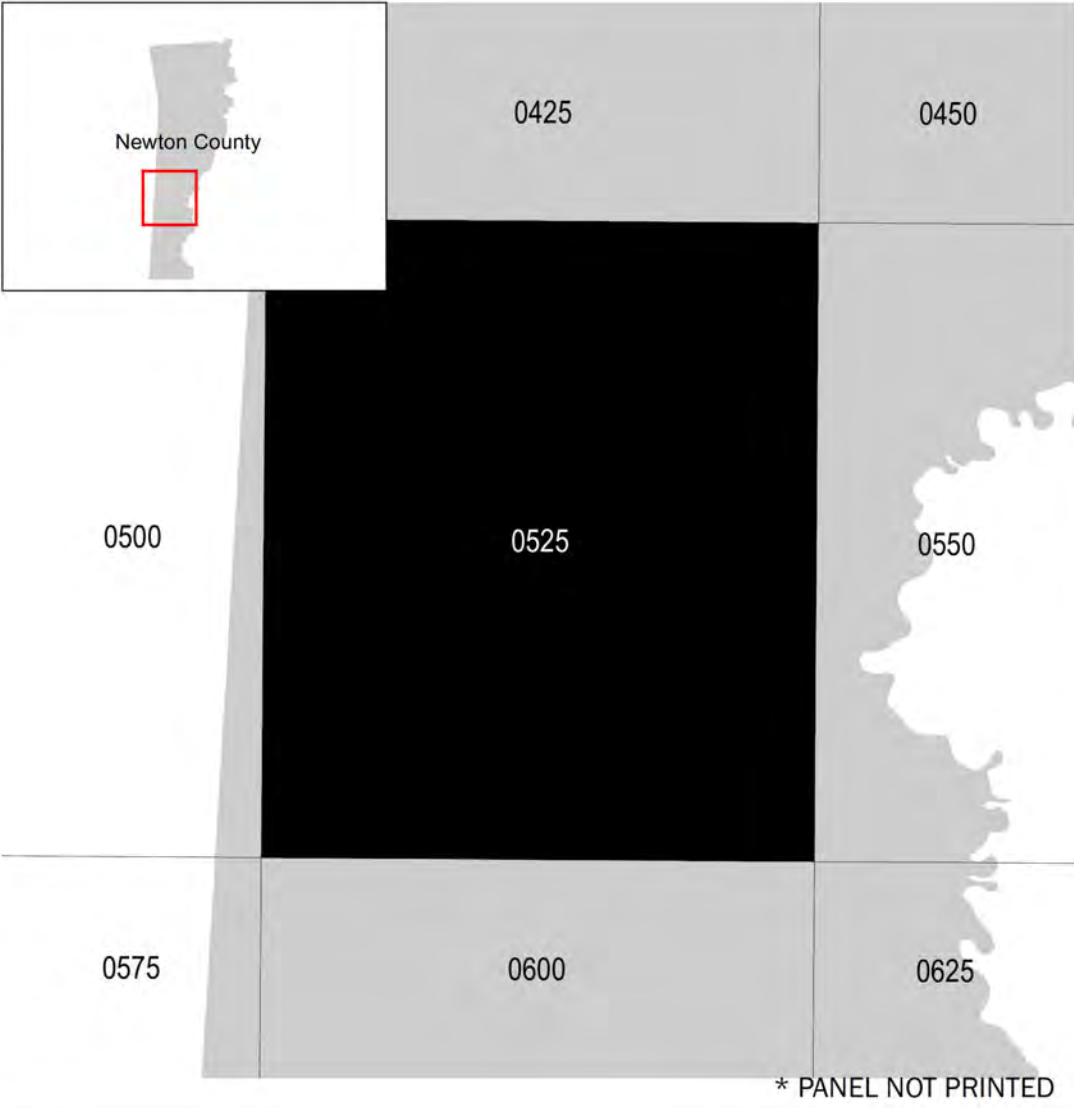
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 525 OF 775

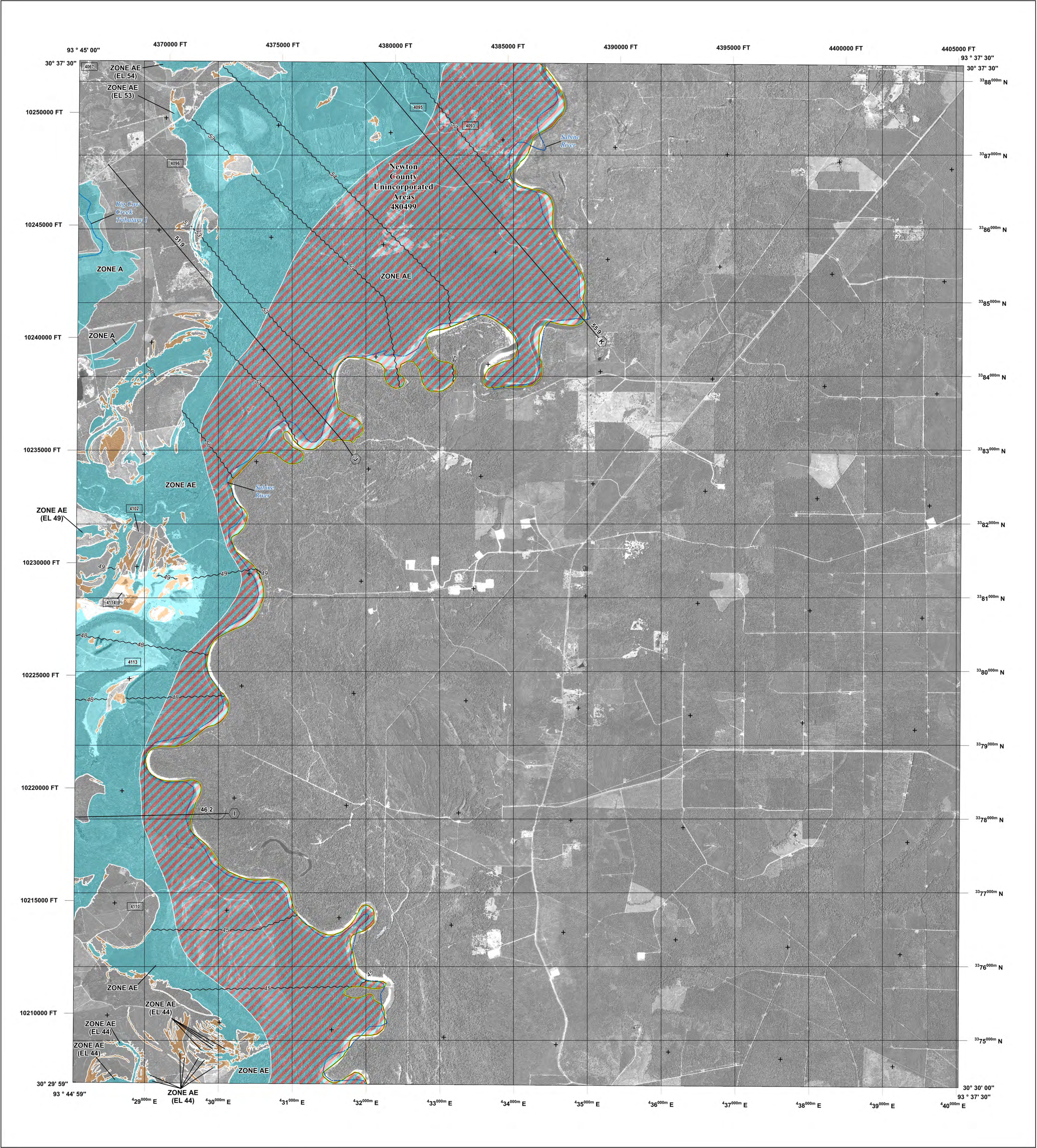
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0525	D

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0525D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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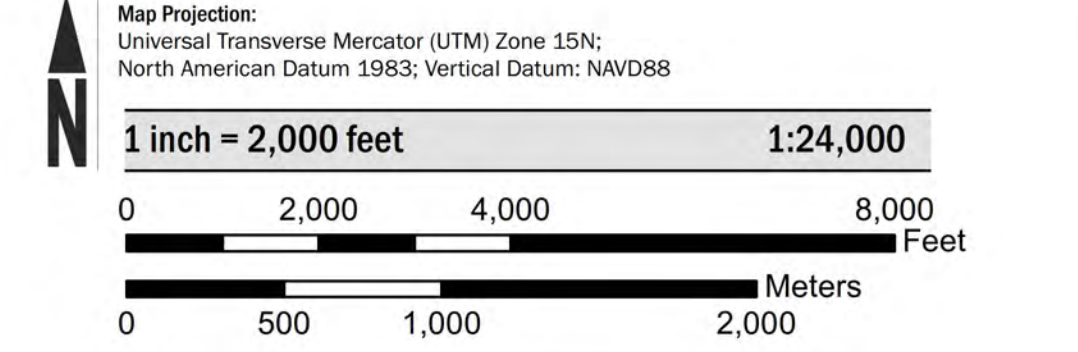
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SCALE



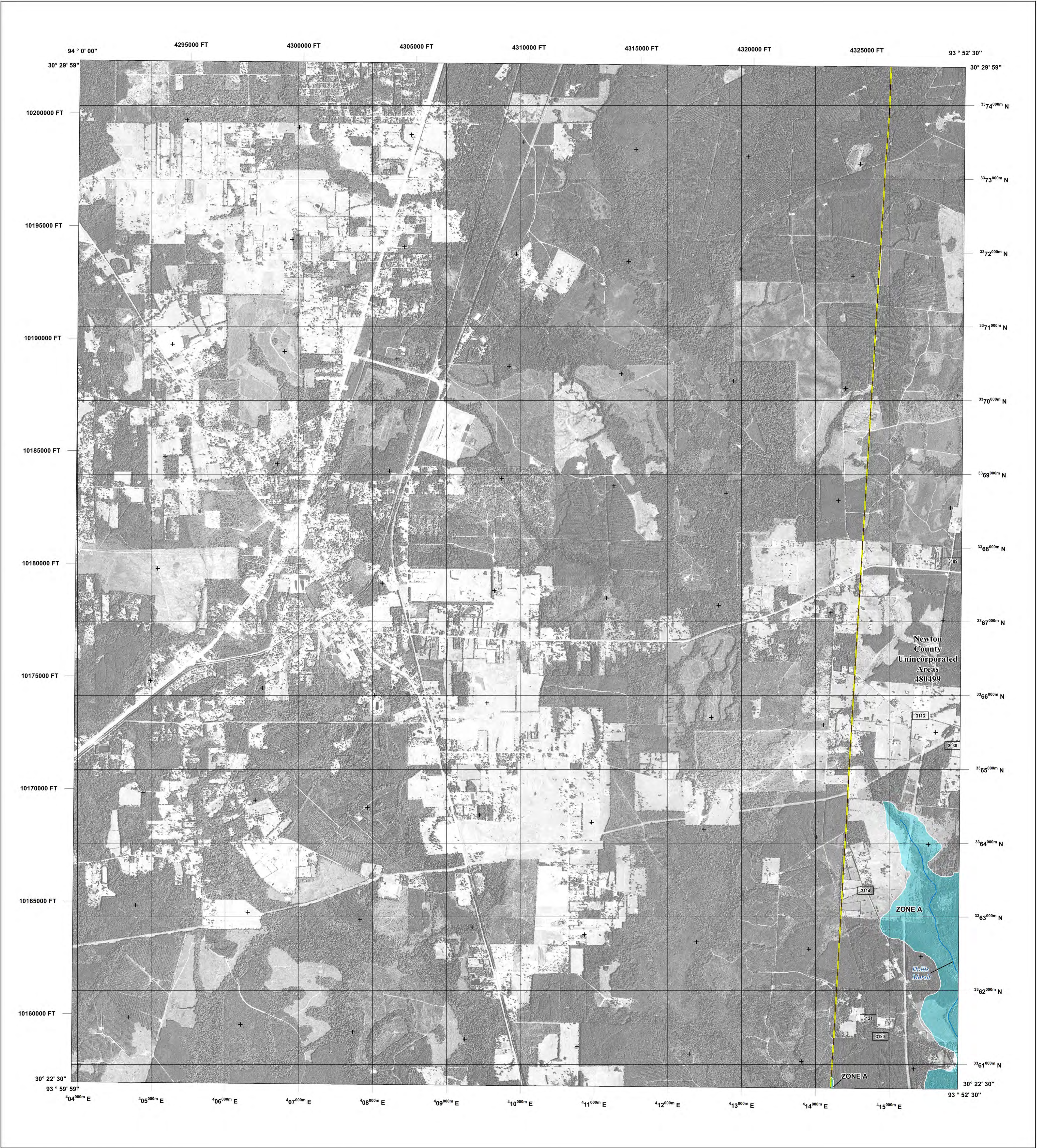
PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas
PANEL 550 OF 775

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0550	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0550D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
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SPECIAL FLOOD HAZARD AREAS

Without Base Flood Elevation (BFE)
Zone A,V, A99
With BFE or Depth Zone AE, AO, AH, VE, AR

Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X

Future Conditions 1% Annual Chance Flood Hazard Zone X

Area with Reduced Flood Risk due to Levee
See Notes. Zone X

OTHER AREAS

NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X

Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES

Channel, Culvert, or Storm Sewer

Levee, Dike, or Floodwall

OTHER FEATURES

18.2
17.5
Cross Sections with 1% Annual Chance Water Surface Elevation

8
Coastal Transect

Profile Baseline

Hydrographic Feature

513
Base Flood Elevation Line (BFE)

Limit of Study

Jurisdiction Boundary

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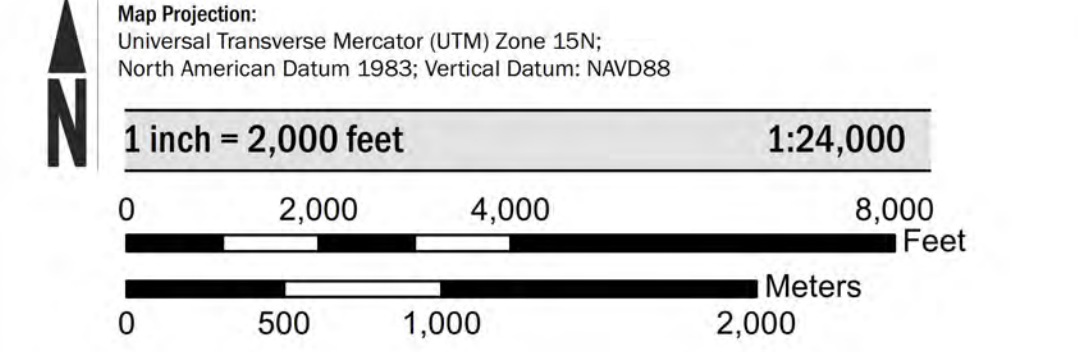
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SCALE



PANEL LOCATOR



National Flood Insurance Program

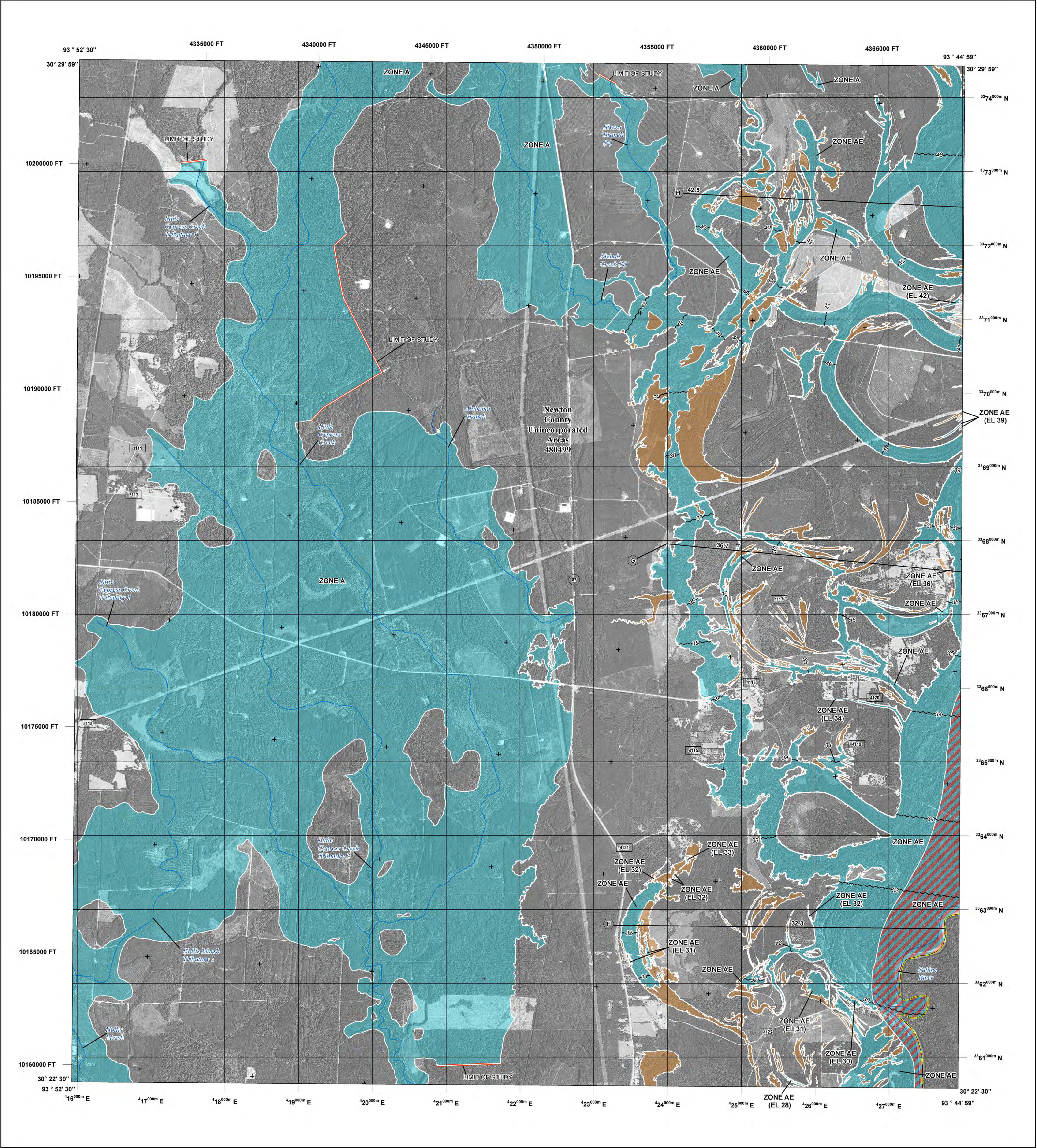
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 575 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0575	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0575D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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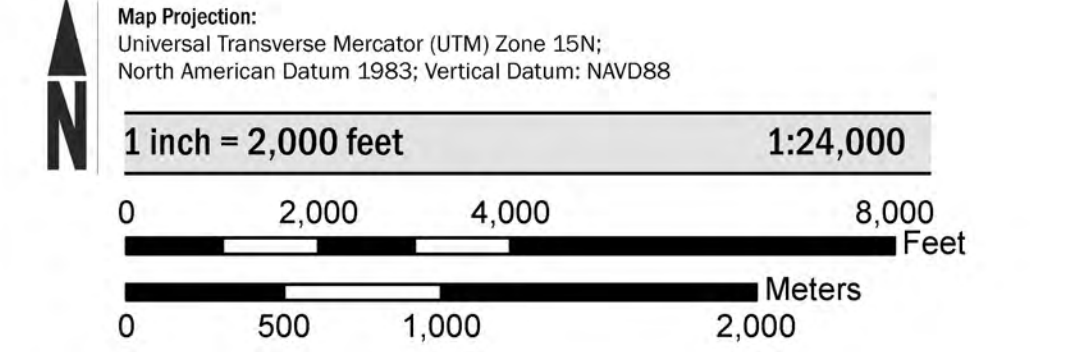
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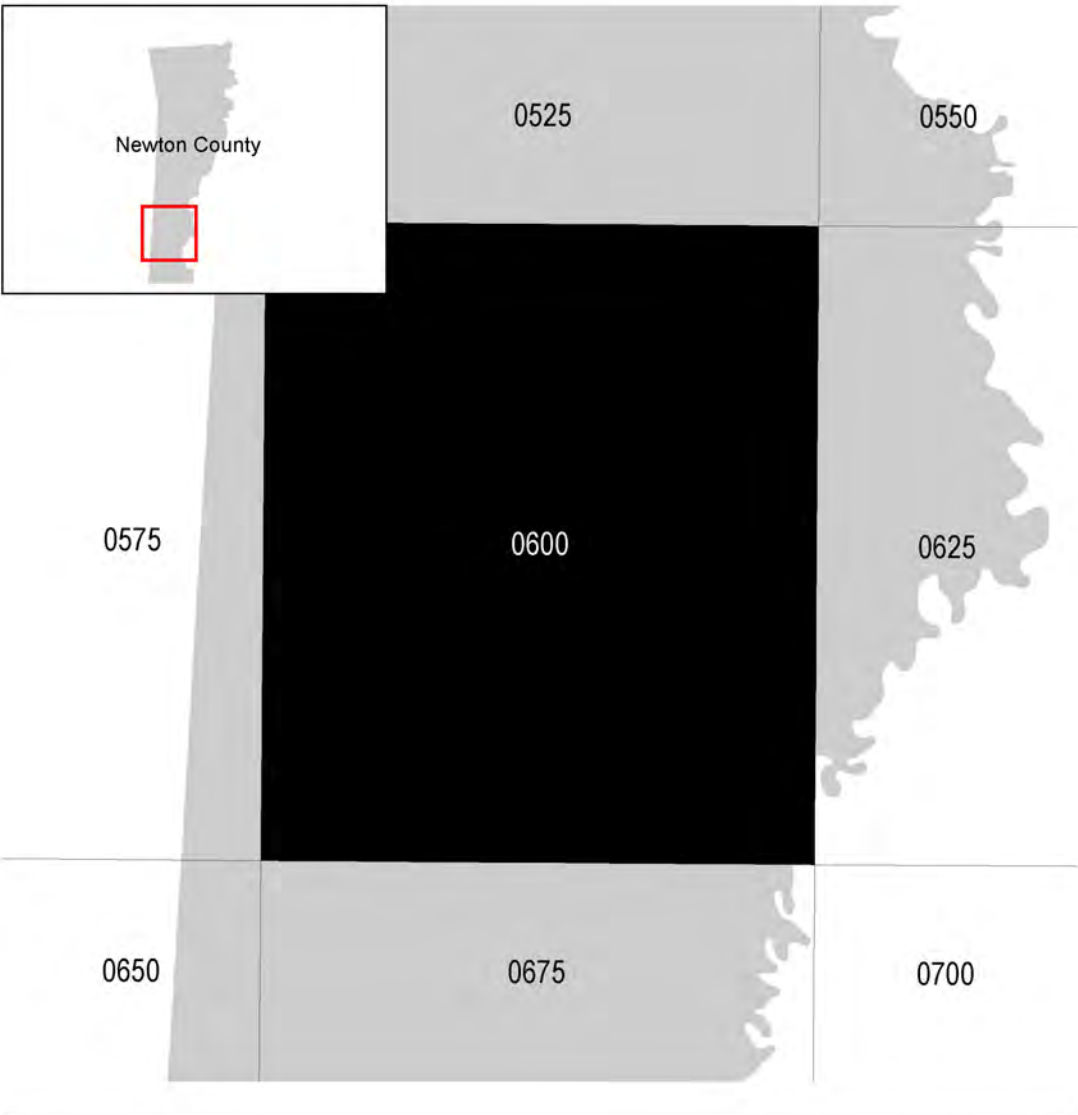
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SCALE



PANEL LOCATOR



National Flood Insurance Program

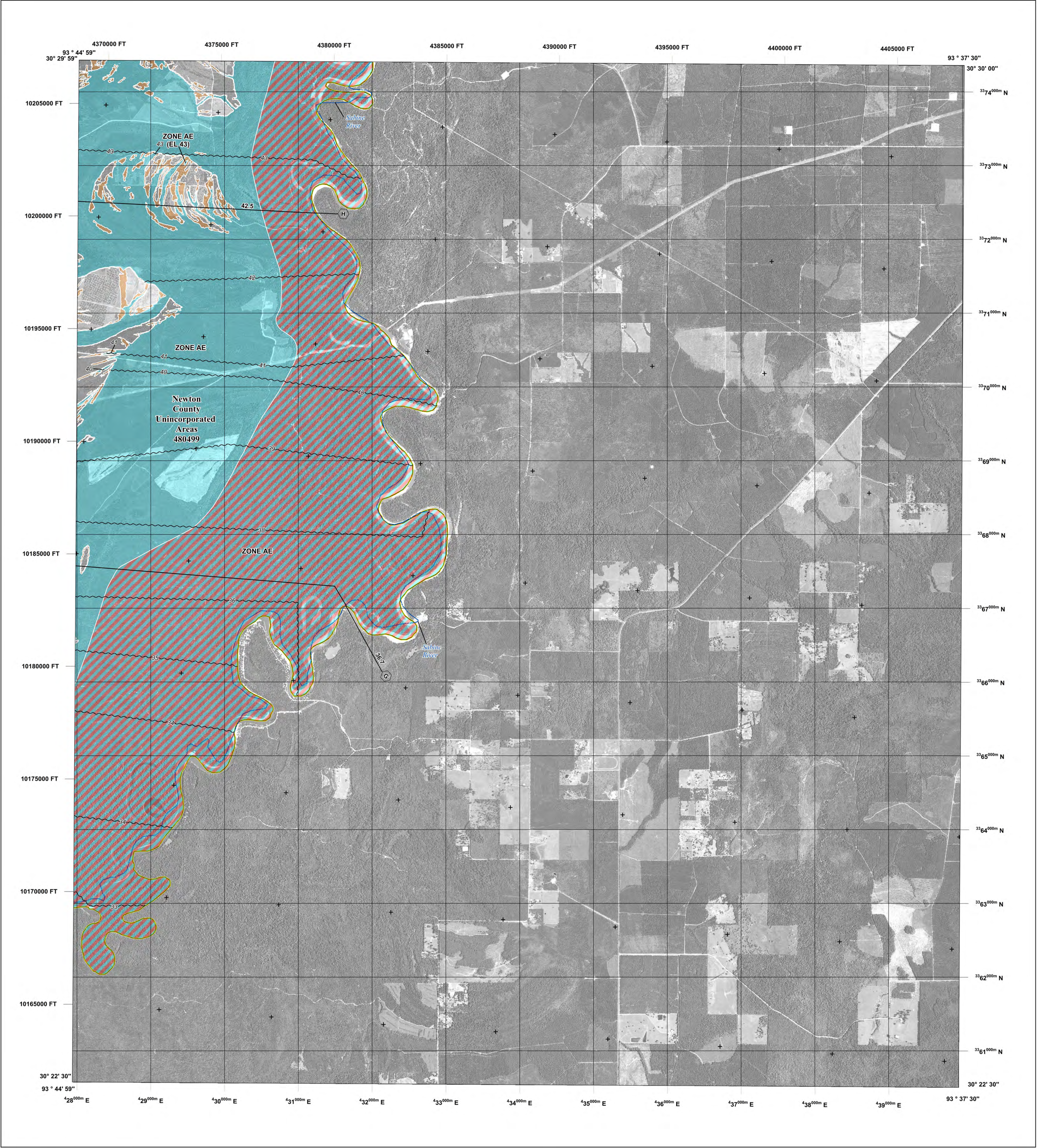
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 600 of 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0600	0

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0600D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A.V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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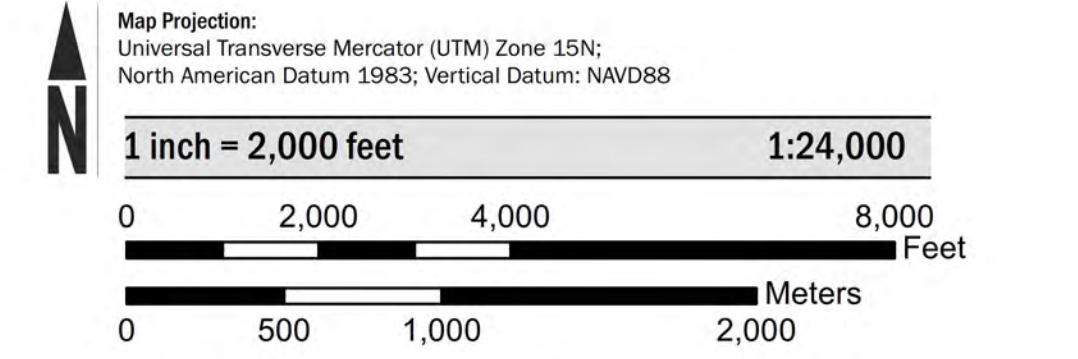
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 625 of 775

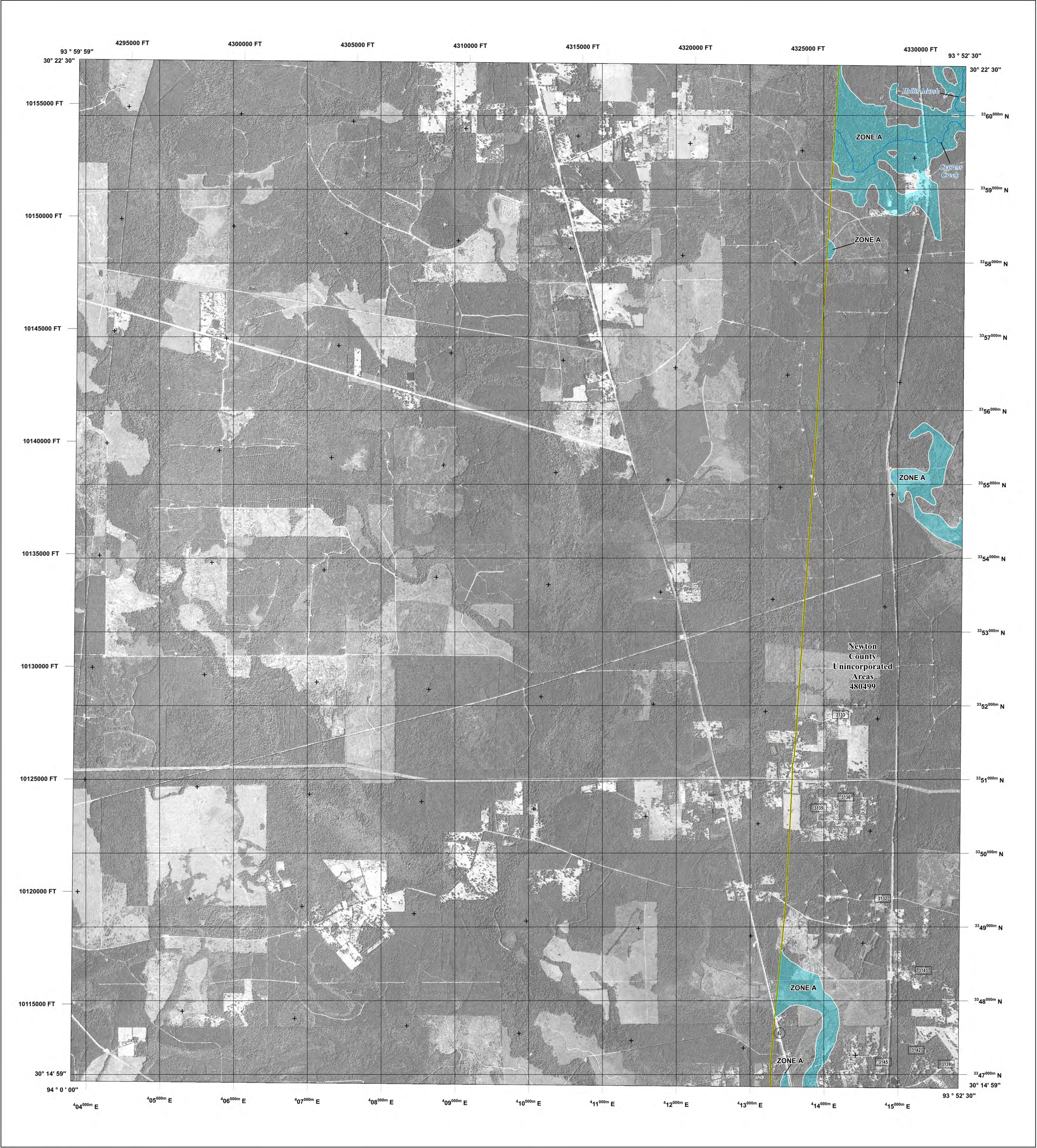
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0625	D

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0625D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		8 Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		513 Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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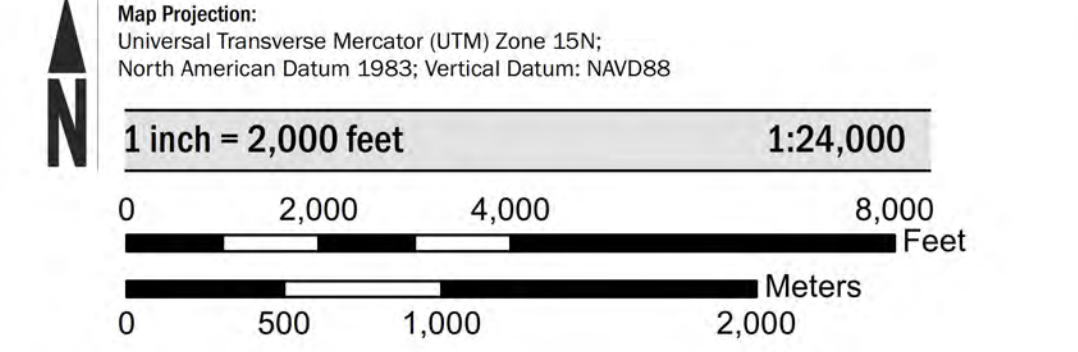
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SCALE



PANEL LOCATOR



National Flood Insurance Program

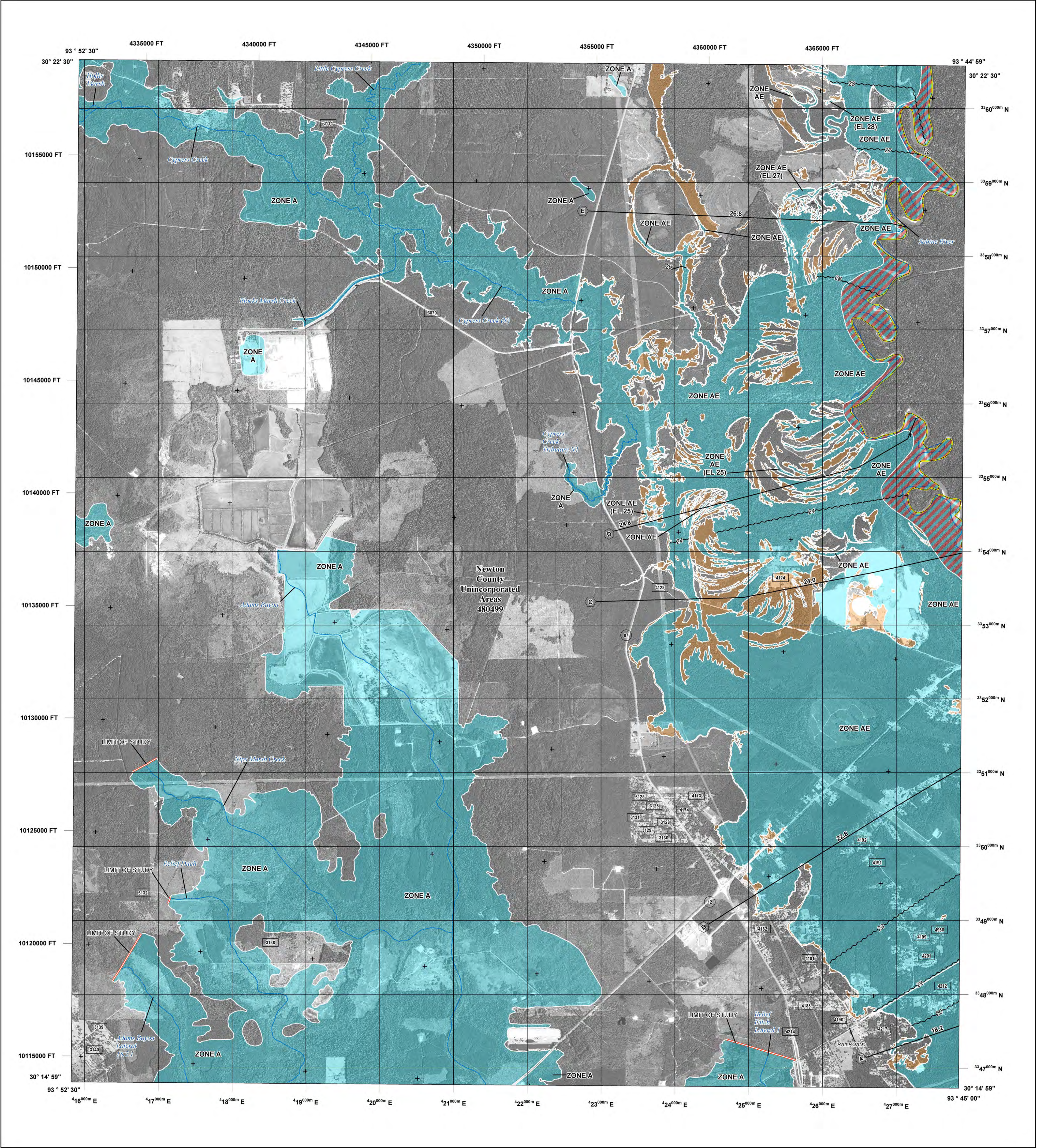
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 650 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0650	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0650D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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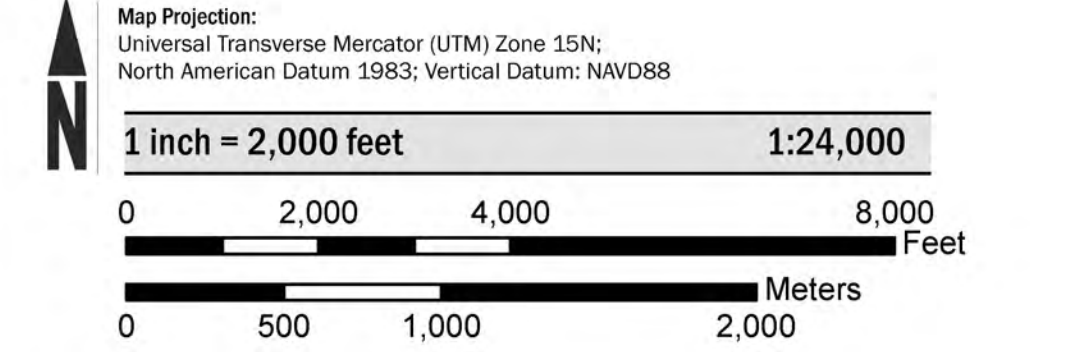
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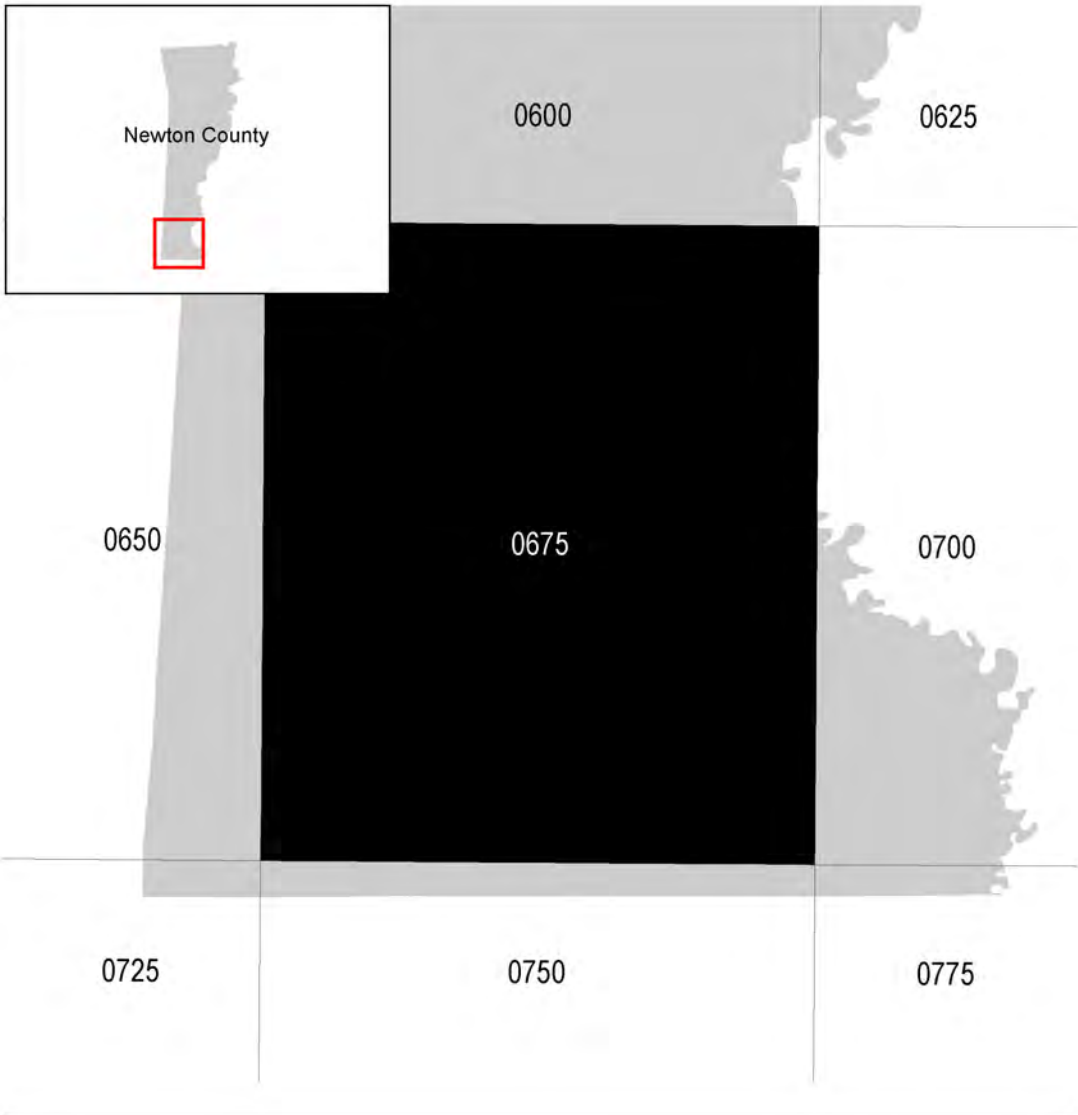
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SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 675 of 775

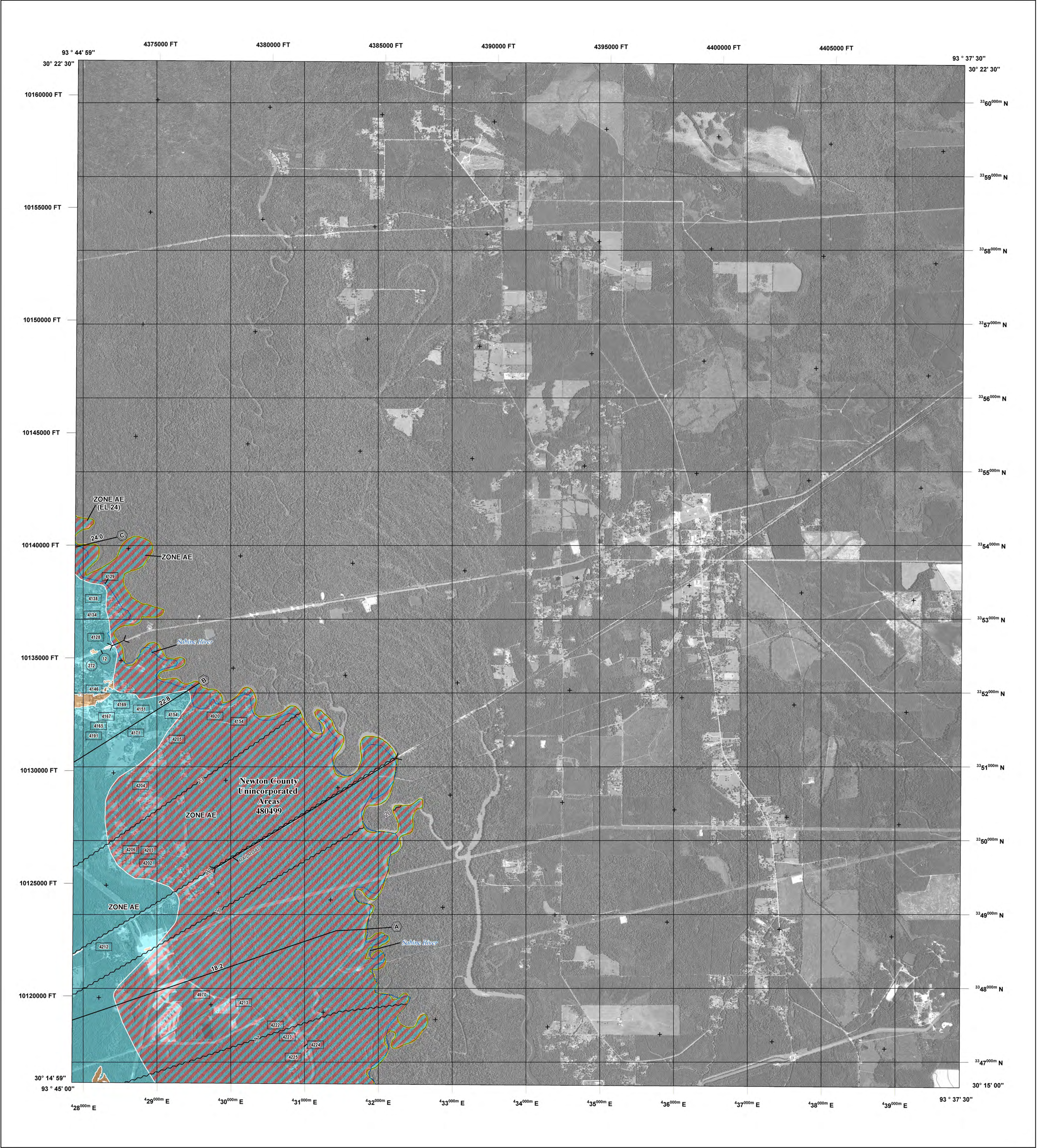
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0675	0

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0675D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS		Area with Reduced Flood Risk due to Levee See Notes. Zone X
		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

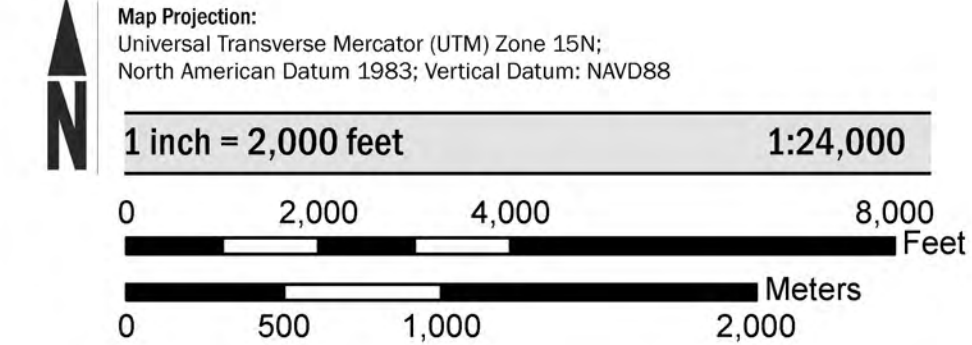
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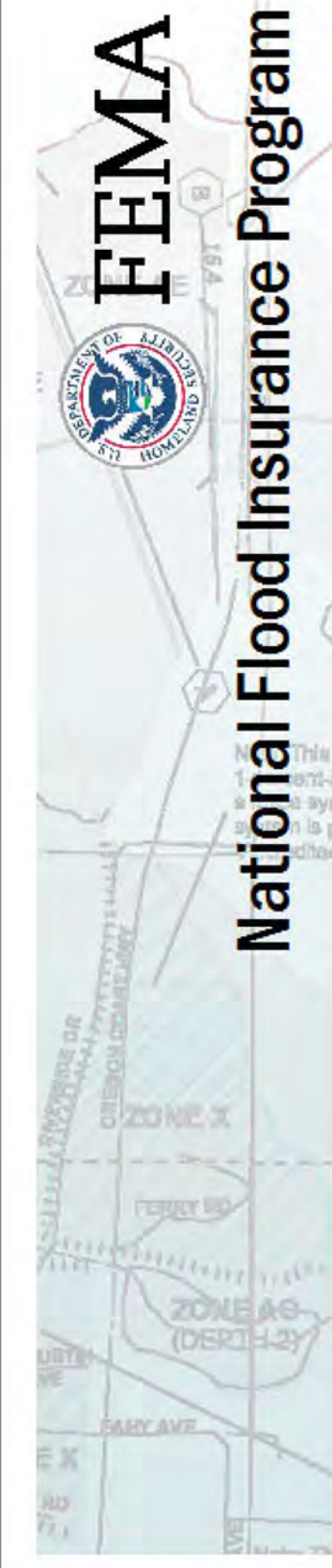
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SCALE



PANEL LOCATOR

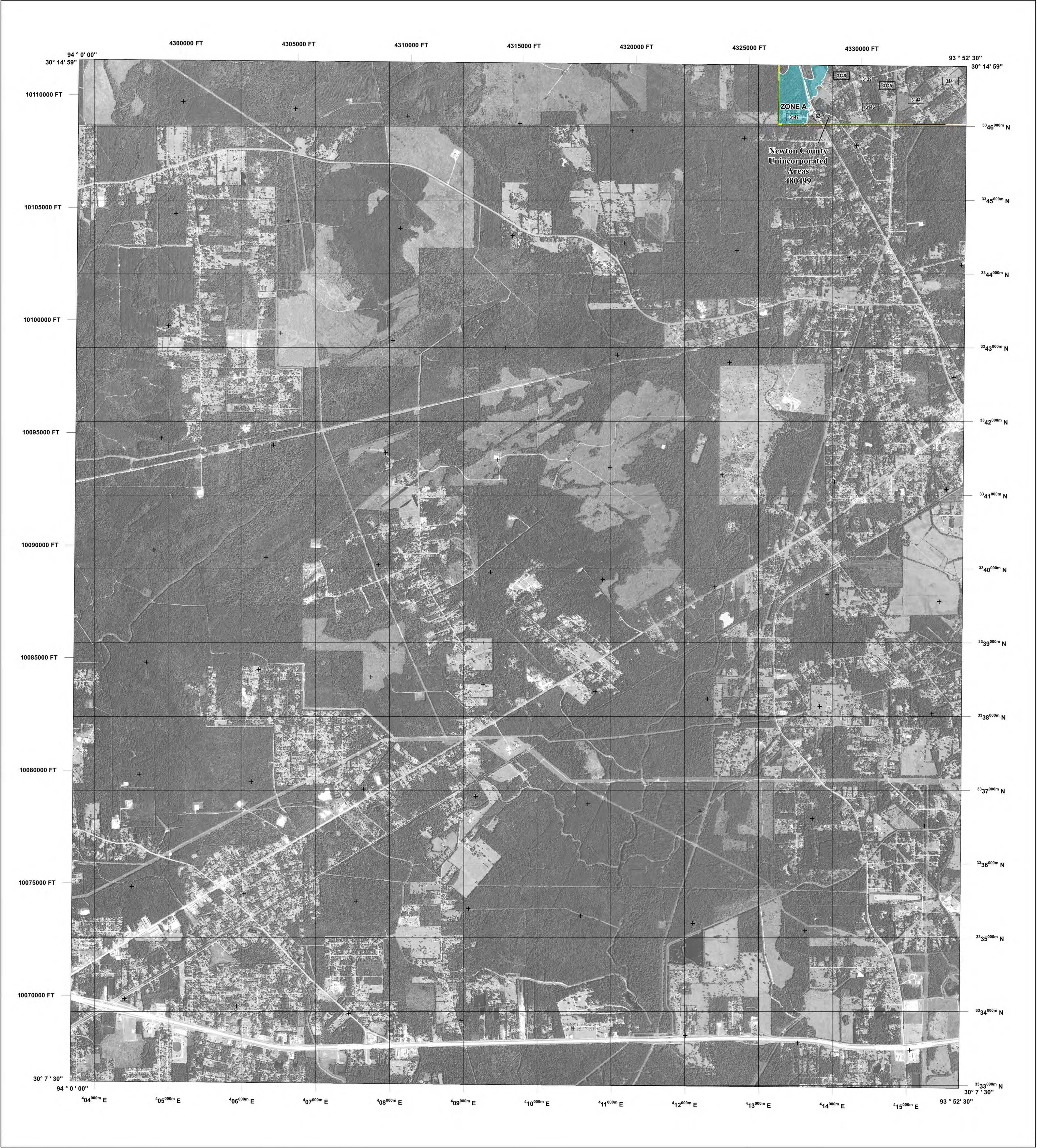


NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 700 OF 775

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0700	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0700D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A,V,A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		8 Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

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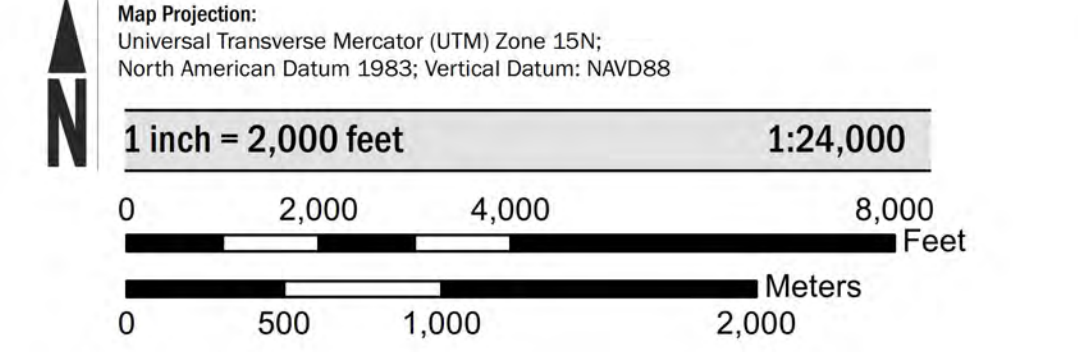
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SCALE



PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 725 OF 775

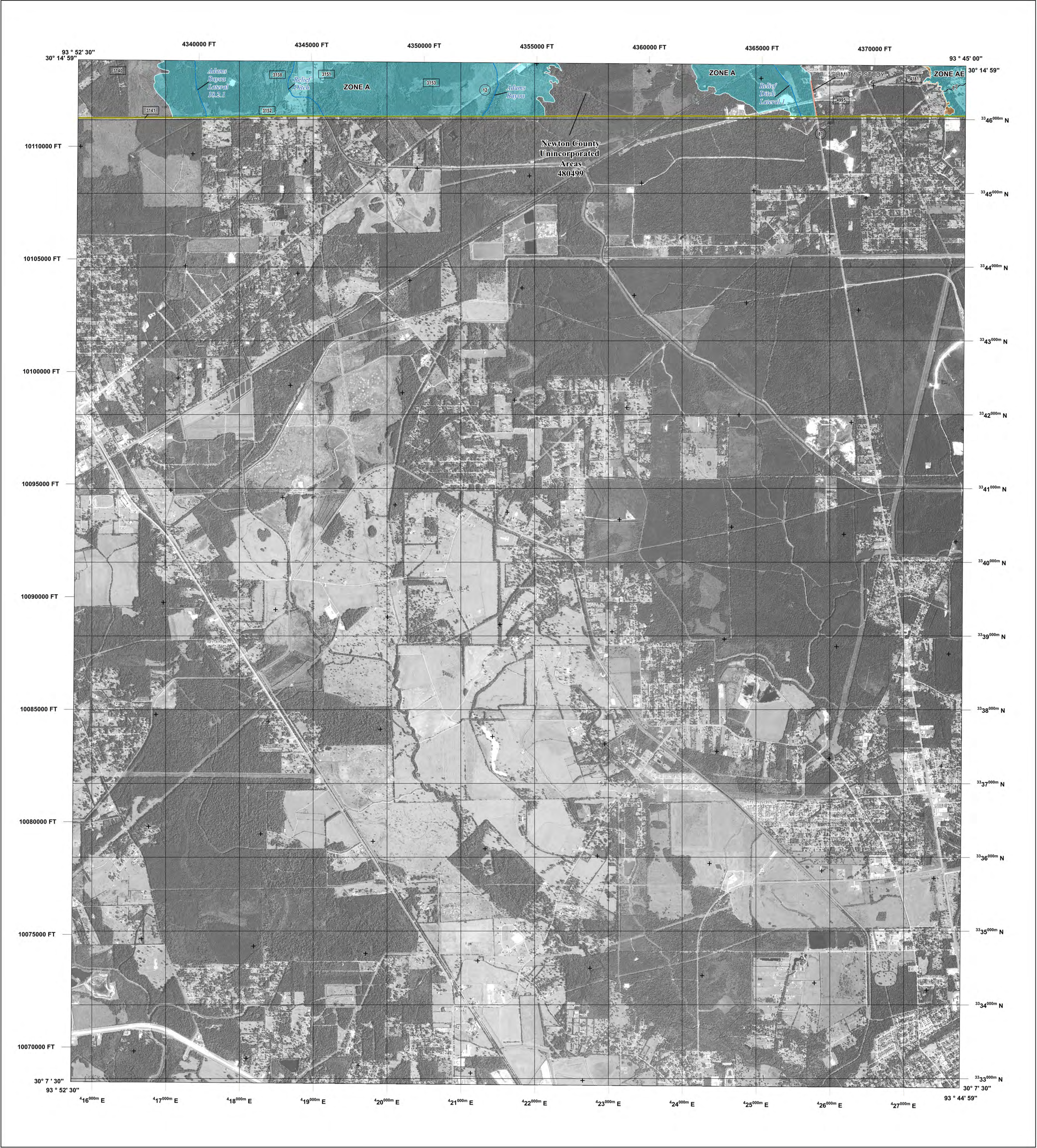
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0725	D

VERSION NUMBER
2.3.3.2

MAP NUMBER
48351C0725D

MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

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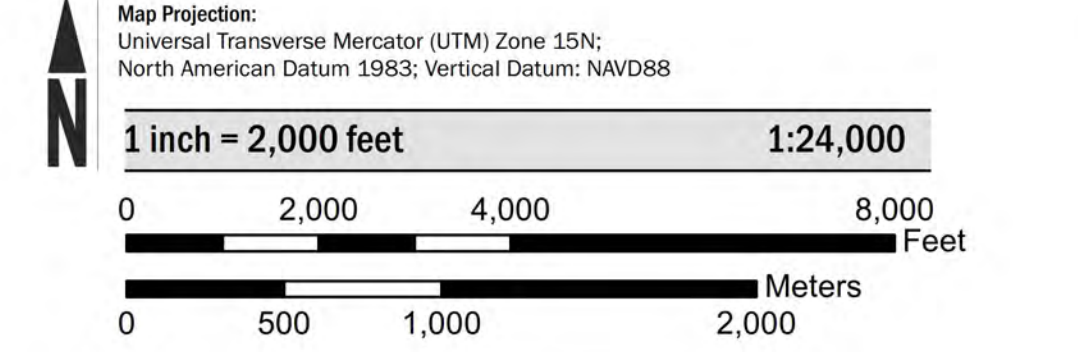
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SCALE



PANEL LOCATOR



National Flood Insurance Program

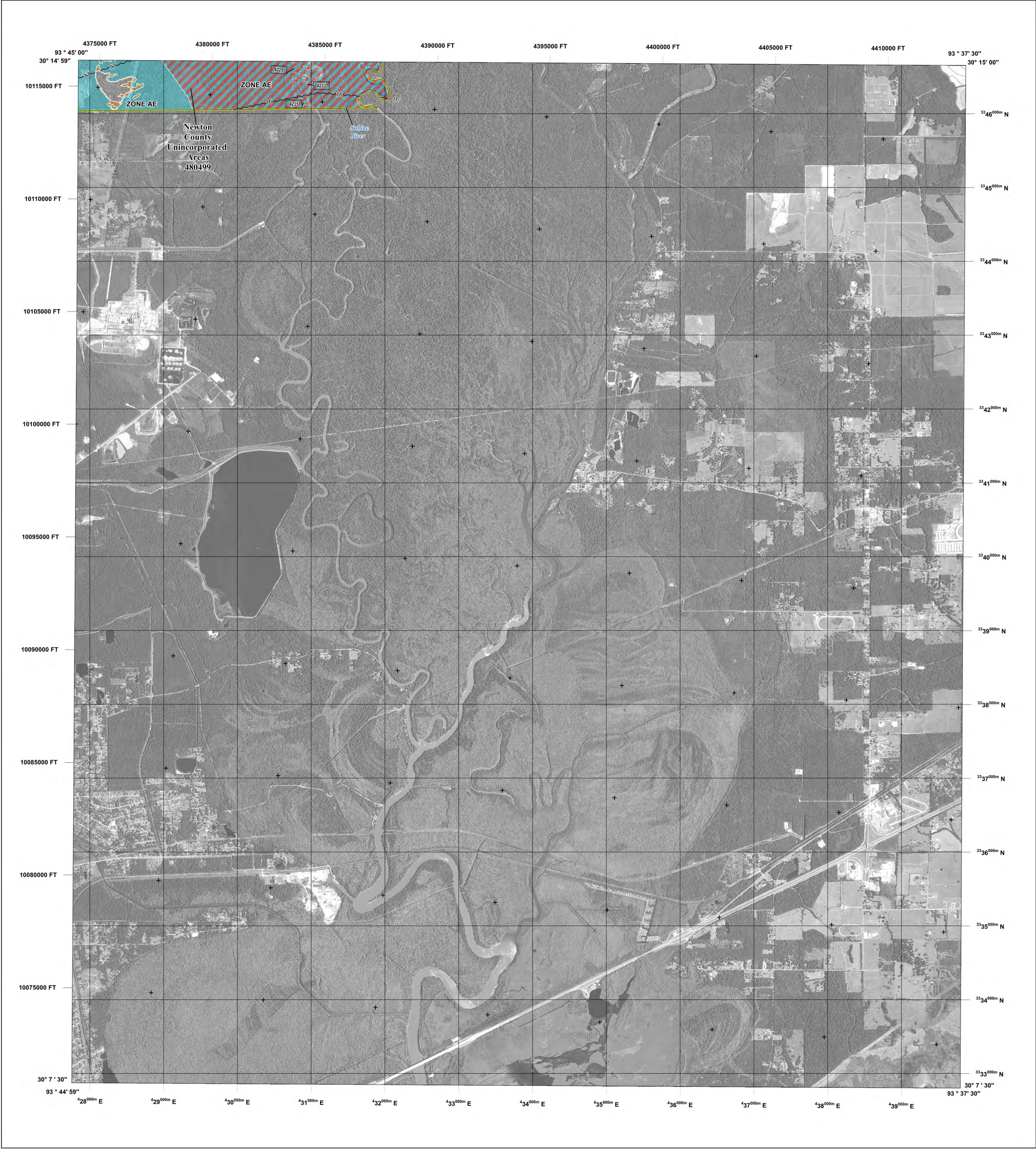
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 750 OF 775

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0750	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0750D
MAP REVISED
NOVEMBER 16, 2018



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A.V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS		NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		18.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		513 Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

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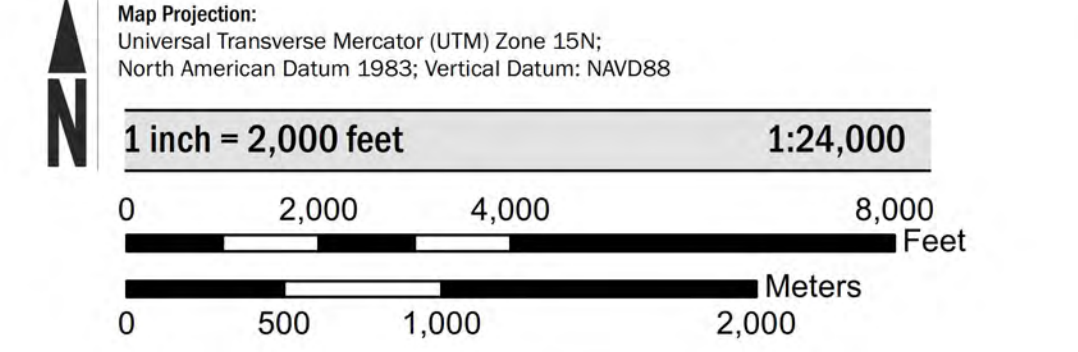
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SCALE



PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NEWTON COUNTY, TEXAS
and Incorporated Areas

PANEL 775 OF 775

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWTON COUNTY	480499	0775	D

VERSION NUMBER
2.3.3.2
MAP NUMBER
48351C0775D
MAP REVISED
NOVEMBER 16, 2018

APPENDIX F – HAZARD REPORTS, ARTICLES, AND DATA