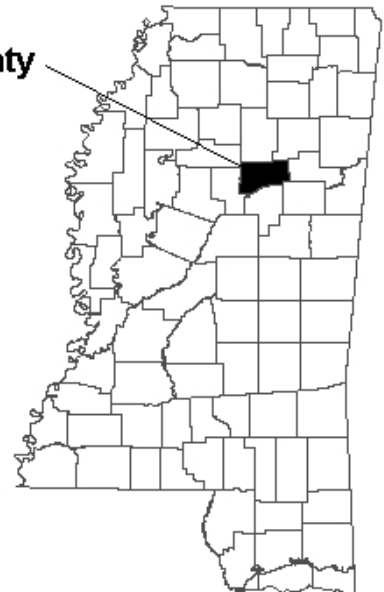


FLOOD INSURANCE STUDY



WEBSTER COUNTY, MISSISSIPPI AND INCORPORATED AREAS

Webster County



EUPORA, TOWN OF	280183
MABEN, TOWN OF*	280252
MANTEE, VILLAGE OF*	280356
MATHISTON, TOWN OF	280184
WALTHALL, VILLAGE OF*	280307
WEBSTER COUNTY	280284

(UNINCORPORATED AREAS)

*Non-floodprone community

PRELIMINARY

JAN 06 2009



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER

28155CV001A

**NOTICE TO
FLOOD INSURANCE STUDY USERS**

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial Countywide FIS Effective Date: TBD

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FLOOD INSURANCE STUDY

WEBSTER COUNTY, MISSISSIPPI AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Webster County, Mississippi, including incorporated areas of the Town of Eupora, Town of Maben, Village of Mantee, Town of Mathison, Village of Walthall and the unincorporated areas of Webster County (referred to collectively herein as Webster County). The FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS report are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This FIS was prepared to include the unincorporated areas of, and incorporated communities within, Webster County in a countywide format. A FIS report has not been previously published for Webster County, Mississippi or any incorporated areas within Webster County.

For this countywide FIS, the hydrologic and hydraulic analyses for this study were performed by Watershed Concepts, for the Federal Emergency Management Agency (FEMA), under Contract No. EMA-2006-CA-5617. The study was completed in July 2008.

Base map information shown on this Flood Insurance Rate Map (FIRM) was derived from multiple sources. Base map information for Webster County and all incorporated communities within Webster County was provided in digital format by Mississippi Department of Environmental Quality (MDEQ) and Mississippi Emergency Management Agency (MEMA). Additional base map data was provided by local communities with Webster County and the state of Mississippi. This information was compiled to create the FIRM panels. Users of this FIRM should be aware that minor adjustments may have been made to specific base map features for clarity and readability.

The coordinate system used for the production of DFIRM is Mississippi State Plane East (FIPS 2301), referenced to the North American Datum of 1983 and the GRS80. Distance

units were measure in U.S. feet.

1.3 Coordination

An initial Consultation Coordination Officer (CCO) meeting was held on December 11, 2006 with representatives from FEMA, the community, and the study contractor to explain the nature and purpose of a FIS, and to identify the streams to be studied.

The results of the study were reviewed at the final CCO meeting held on _____, and attended by representatives of _____. All problems raised at that meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Webster County, Mississippi, including the incorporated communities listed in Section 1.1.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by FEMA and Webster County.

2.2 Community Description

Webster County is located in north central Mississippi and is bordered on the north by Calhoun and Chickasaw Counties, on the east by Clay County, on the south by Choctaw and Oktibbeha Counties, and on the west by Montgomery and Grenada Counties. The major highways serving Webster county are US Highway 82 and State Highways 9, 15, 46, 50, 182, 403, and 404. The major railroad serving the county is the Columbus and Greenville Railway. According to the U.S. Bureau of the Census, the land area of Webster County is approximately 422 square miles and the estimated 2006 population of Webster County was 10,041 (Reference 1).

Webster County has a humid subtropical climate. The highest monthly average summer temperature is 80 degrees Fahrenheit (°F) and the lowest monthly average winter temperature is 41°F. The average annual precipitation of 57 inches is reasonably well distributed throughout the year, but noticeably less in the late summer and early fall (Reference 2).

2.3 Principal Flood Problems

The principle sources of flooding in Webster County are Bellafontaine Creek, Big Black River, Big Black River Canal, Calabrella Creek, Little Black Creek, Sabougla Creek, Sand Creek, and Spring Creek Canal.

2.4 Flood Protection Measures

There are no known flood protection structures along the study reaches in Webster County.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods 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 once on the average during any 10-, 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-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent-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 exceedence) in any 50-year period is approximately 40 percent (4 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. At the time of this study, no flooding sources within Webster had been studied in detail.

3.1 Hydrologic Analyses

Discharges for the 1-percent-annual-chance recurrence interval for all new approximate study stream in Webster County were determined using the USGS regression equation for Mississippi as described in the USGS Water Resource Investigation (WRI) Reports 91-4037 (Reference 4).

3.2 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.

Cross section geometries were obtained from digital terrain data developed from USGS 10-meter DEMs.

Water-surface profiles for the streams studied by approximate methods were computed through the use of the U.S. Army Corps of Engineers (USACE) HEC_RAS version 3.1.2 water –surface profiles computer program (Reference 3). The model was run for the 1-percent-annual-chance storm for the approximate studies.

The enhanced approximate study methodology used WISE as a preprocessor to HEC-RAS. WISE combined georeferenced data from the terrain model and miscellaneous shapefiles (such as streams and cross sections) with user input to create the input data file for HEC-RAS. Tools within WISE allowed the engineer to verify that the cross-section data was acceptable. The WISE program was used to generate the input data file for HEC-RAS. Then HEC-RAS was used to determine the flood elevation at each cross section of the modeled stream, and the resulting elevations were then imported back to WISE for creation of the flood boundaries. No floodway was calculated for streams studied by approximate methods.

3.3 Vertical Datum

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 (NGVD). With the completion of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are now prepared using NAVD as the referenced vertical datum.

Qualifying bench marks within a given jurisdiction that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (NSRS) as First or Second Order Vertical and have a vertical stability classification of A, B, or C are shown and labeled on the FIRM with their 6-character NSRS permanent identifier. Bench marks cataloged by the NGS and entered into the NSRS vary widely in vertical stability classification. NSRS vertical stability classifications are as follows:

Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)

Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)

Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monuments below frost line)

Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Structure and ground elevations in the community must, therefore, be referenced to NAVD88. It is important to note that adjacent communities may be referenced to NGVD29. This may result in differences in Base Flood Elevations (BFEs) across the corporate limits between the communities.

The elevations shown in the FIS report and on the FIRM for Lauderdale County are referenced to NAVD88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD29, add 0.18 feet to the NGVD29 elevation. The 0.18 feet value is an average for the entire county. The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 12.4 feet will appear as 12 feet on the FIRM and 12.6 feet as 13 feet. Users who wish to convert the elevations in this FIS report to NGVD29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1 foot.

To obtain current elevation, description, and/or location information for bench marks shown on the FIRM for this jurisdiction, or for information regarding conversion between the NGVD29 and NAVD88, see the FEMA publication entitled *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988* (FEMA, June 1992), or contact the Vertical Network Branch, National Geodetic Survey,

Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address <http://www.ngs.noaa.gov>).

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 Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study produces maps designed to assist communities in developing flood plain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the county. Floodplain boundaries were delineated using topographic data at scales of 1"=500', 1"=1,000' and 1"=2,000'.

The 1-percent-annual-chance floodplain boundaries are shown on the FIRM (Exhibit 1). On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A). Small areas within the floodplain boundaries may lie above the flood elevations, but cannot be shown due to limitations of the map and/or lack of detailed topographic data.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces the flood carrying capacity, increases the 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 National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced.

Floodways have not been shown or computed for streams studied by enhanced approximate and approximate methods. Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplains will not cause more than a 1.0-foot increase in the base flood elevations at any point within the county.

The area between the floodway and the 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation (WSEL) of the flood more than 1.0 foot at any point. Typical relationships

between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

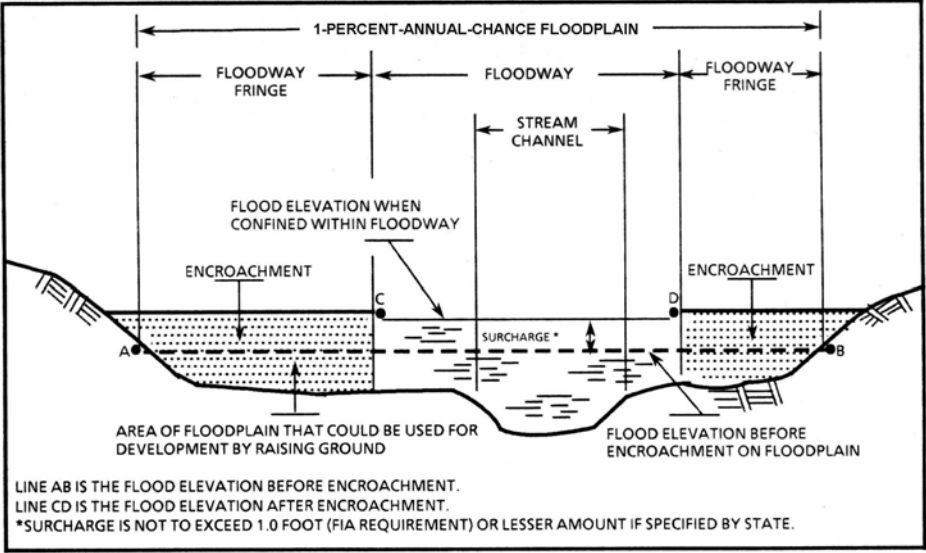


Figure 1. Floodway Schematic

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1-percent-annual-chance) flood elevations (BFEs) or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance risk zone that corresponds to the areas of the 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Average whole-foot base flood depths derived from the detailed hydraulic analyses are shown within this zone.

Zone V

Zone V is the flood insurance risk zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no BFEs are shown within this zone.

Zone VE

Zone VE is the flood insurance risk zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 0.2-percent-annual-chance floodplain, areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile (sq. mi.), and areas protected from the base flood by levees. No BFEs or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0. Insurance agents use zones to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1-percent-annual-chance floodplains calculated by the hydraulic analyses.

The countywide FIRM presents flooding information for the entire geographic area of Webster County, Mississippi. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. Additional data relating to the maps prepared for each community, up to and including the countywide FIS, are presented in Table 1, "Community Map History."

7.0 OTHER STUDIES

There are no previously published FIS reports for Webster County. There were FIRMs previously produced for the Unincorporated Areas of Webster County, the Town of Eupora, and the Town of Mathiston.

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Webster County has been compiled into this FIS. Therefore, this FIS supersedes all previously printed FIRMs for all the incorporated and unincorporated jurisdictions within Webster County, and should be considered authoritative for the purposes of the NFIP.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting FEMA Region IV, Federal Insurance and Mitigation Administration, Koger Center – Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, Georgia, 30341.

9.0 BIBLIOGRAPHY AND REFERENCES

1. U.S. Census 2000, <http://quickfacts.census.gov/qfd/states/47/47057.html>, accessed June 2008.
2. National Weather Service, 30 Year Normals (1971-2000) and Monthly Rainfall. http://www.srh.noaa.gov/jan/climate_connection.php, accessed June 2008.
3. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-RAS River Analysis System, Version 3.1.2, April 2004.
4. U.S. Geological Survey, Flood Characteristics of Mississippi Streams, 1991, U.S. Geological Survey Water-Resources Investigations Report 91-4037.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Eupora, Town of	June 7, 1974	June 18, 1976	June 17, 1986	---
Maben, Town of*	---	---	---	---
Mantee, Village of*	---	---	---	---
Mathiston, Town of	---	---	---	---
Walthall, Village of*	---	---	---	---
Webster County (Unincorporated Areas)	October 28, 1977	February 24, 1978	September 18, 1985	---

*Non-floodprone community

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WEBSTER COUNTY, MS
AND INCORPORATED AREAS**

COMMUNITY MAP HISTORY

