Discovery Report

Middle Pearl-Strong, 03180002
Copiah, Hinds, Leake, Madison, Rankin, Scott, Simpson, and Smith counties
Cities of Brandon, Byram, Crystal Springs, Florence, Flowood, Jackson, Madison, Mendenhall, Morton, Pearl, Richland, and Ridgeland, Mississippi
Towns of D'Lo, Georgetown, Pelahatchie, Polkville, and Terry, Mississippi
Villages of Braxton and Puckett, Mississippi
Report Number 01
7/26/2013

FEMA

I. Table of Contents

II. General Information

i. Background and Statistics:

The Middle Pearl-Strong watershed is located in central Mississippi and includes portions of eight Mississippi counties (Copiah, Hinds, Leake, Madison, Rankin, Scott, Simpson, and Smith) all or part of 12 cities (Brandon, Byram, Crystal Springs, Florence, Flowood, Jackson, Madison, Mendenhall, Morton, Pearl, Richland, and Ridgeland), 5 towns (D'Lo, Georgetown, Pelahatchie, Polkville, and Terry), and 2 villages (Braxton and Puckett). A map of the watershed in found in Figure 1.

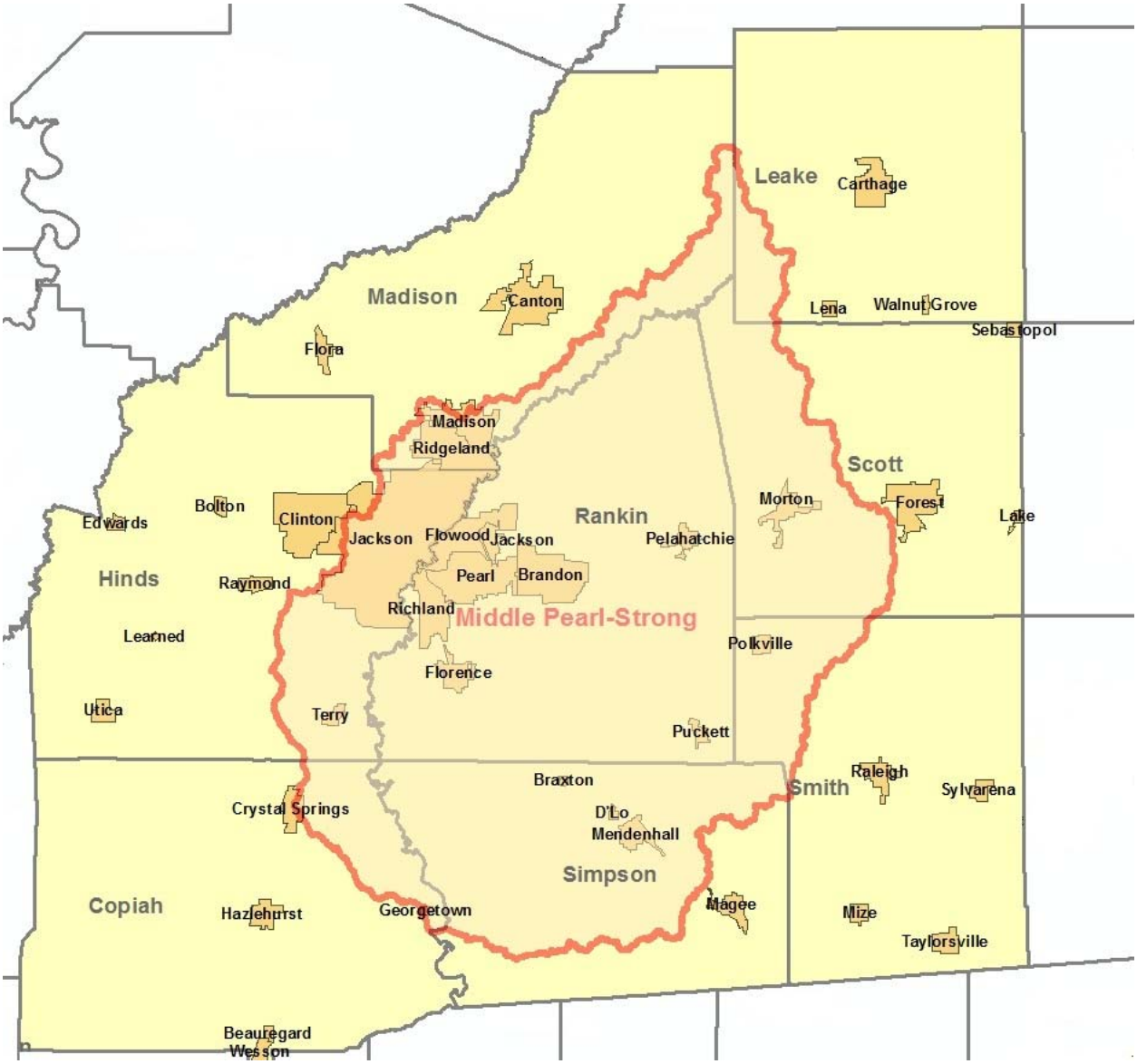

FIGURE 1: Middle Pearl-Strong Watershed

The watershed area is 1,990 square miles. This is the second of four HUC-12 watersheds that make up the overall Pearl River basin, which drains a large portion of central Mississippi. Aside from the Pearl River itself, some of the major drainages include Big Creek, Cany Creek, Pelahatchie Creek, Richland Creek, Rhodes Creek, Steen Creek, the Strong River, Terrapin Skin Creek, and Town Creek. The estimated 2010 population for the watershed is 417,665. The Discovery Meeting was held on June 26 and 27, 2012 at the Mississippi Department of Environmental Quality in Jackson, MS. Five of the twenty-seven communities were represented at the meeting. Only the Cities of Jackson and Brandon requested specific new flood studies while at the meeting. Most of the communities in attendance requested digital copies of the flood hazard and flood risk maps, and these were furnished in the days following the meeting. At this time it is planned to update only particular portions of the watershed. There are 53 Zone AE stream reaches that are categorized as unverified via the CNMS Phase 3 assessment. All eight counties have modernized, digital flood insurance rate maps. The FIRM status and estimated number of panels requiring update are given in Table 1.

Table 1: FIRM Status

County	Status	Effective Date	Estimated number of updated panels
Copiah	Effective	12/13/2008	0
Hinds	Effective	11/18/2009	16
Madison	Effective	3/17/2010	9
Rankin	Preliminary	11/5/2003	16
Scott	Effective	12/17/2010	1
Simpson	Effective	9/2/2011	4
Smith	Effective	8/16/2011	1

Community statistical data as related to the National Flood Insurance Program is provided in Table 2: Statistical Information. Most of these data were captured from Community Assistance Visits (CAV) conducted by Mississippi Emergency Management Agency staff. The CAV were completed between 2003 and 2012. The CAV reports are included as Appendix I.

Table 2: Statistical Information

Name of Community	CID	Area (square miles)	Pop Growth (2000 to 2010)	Mitigation Plan current?	NFIP (Y/N)	Policies	Coverage ($)	Claims ($)	Losses
Brandon	280143	21.3	32.0%	Expires 2/24/2016	Y	146	35,259,600	135,457	29
Braxton	280156	0.6	74.6%	Expires 9/28/2016	N	0	0	0	0
Byram	280850	20.1	55.6%	Expires 5/17/2017	Y	2	385,200	0	0
Copiah County	280221	776	2.4%	Expires 11/04/2015	Y	28	3,174,800	90,605.81	14
Crystal Springs	280044	5.4	-14.1%	Expires 9/29/2016	Y	8	621,000	25,250	10
D'Lo	280157	0.7	14.7%	Expires 9/28/2016	Y	25	2,210,300	45,468	6
Florence	280144	5.9	72.8%	Expires 1/25/2016	Y	46	5,970,600	851,659	25
Flowood	280289	16.3	64.7%	Expires 9/20/2016	Y	426	139,756,500	2,384,764	123
Georgetown	280045	0.7	-16.9%	Expires 11/04/2015	Y	0	0	0	0
Hinds County	280070	870	-2.2%	Expires 11/29/2016	Y	420	73,838,900	1,495,144	136
Jackson	280072	105	-5.8%	Expires 6/27/2016	Y	4,409	699,132,300	50,447,700	2,981
Leake County	280293	583	13.7%	Expires 10/03/2017	Y	30	3,230,400	92,350	10
Madison	280229	13.5	64.4%	Expires 1/11/2017	Y	224	55,284,300	418,442	85
Madison County	280228	717	27.5%	Expires 11/21/2016	Y	374	92,052,600	1,641,833	135
Mendenhall	280159	5.3	-2.0%	Expires 4/18/2016	Y	29	2,276,400	1,095,330	115
Morton	280150	6.7	-0.6%	Expires 9/17/2017	Y	2	281,100	4,405	4
Pearl	280145	22	14.3%	Expires 1/18/2017	Y	430	60,531,500	440,320	123
Pelahatchie	280146	3.2	-8.7%	Expires 9/26/2016	Y	11	1,421,300	5,000	1
Polkville	280342	15.5	531%	Expires 9/18/2017	N	0	0	0	0
Puckett	280147	2.0	-10.7%	Expires 12/15/2016	Y	0	0	0	0
Rankin County	280142	774	22.8%	Expires 9/29/2016	Y	520	100,872,000	2,150,849	163
Richland	280299	12.2	14.7%	Expires 9/13/2016	Y	149	39,774,800	802,046	43
Ridgeland	280110	15.9	19.2%	Expires 4/25/2016	Y	331	72,195,400	521,127	33
Scott County	280280	609	-0.6%	Expires 9/17/2017	Y	7	687,500	0	0
Simpson	280281	591	-0.5%	Expires	Y	42	3,640,700	304,526	50

Name of Community	CID	Area (square miles)	Pop Growth (2000 to 2010)	Mitigation Plan current?	NFIP (Y/N)	Policies	Coverage ($)	Claims ($)	Losses
County				9/28/2016					
Smith County	280306	636	1.9%	Approval Pending Adoption	Y	16	1,835,400	0	0
Terry	280073	2.3	60.1%	Expires 9/20/2016	Y	4	314,000	131,612	19

Note: Community-wide statistics from CAV Report

Meetings and 44 CFR Part 66 Compliance:

No pre-Discovery meetings were held with communities. Rather, a letter signed by MDEQ and MEMA, along with Risk MAP program information, was mailed directly to primary stakeholders (Community Floodplain Administrators and County Emergency Management Agency Directors), personally inviting them to the Discovery meeting. A copy of this mailing is provided in Appendix F—Community Correspondence. Secondary stakeholders received a general memorandum with much of the same information and meeting invitation.

Part 66 compliance:

The CTP has begun and has on record its Case file and docket? X YES ____ NO

The CTP has written record of its initial contact made to the local communities affected by this map modernization project? X YES ____ NO

The CTP has written record of its request for additional flood study data and base information from the local communities? X YES ____ NO

*The above certification indicates that the CTP has begun the Part 66 communication with any local communities affected by this mapping project. This data is stored and available to be supplied to FEMA on request.

NFIP Compliance:

Eight of the twenty-four communities' CAV reports identified serious compliance issues. Of these, Leake County, Rankin County, the City of Flowood, and the Towns of Pelahatchie and Terry did not have a compliant flood damage prevention ordinance at the time of the CAV (2007); however, all but Leake County have updated their ordinances. Leake County was also experiencing problems with enforcement. Copiah County and the Town of D'Lo have compliant ordinances, but appear to be experiencing problems with enforcement. According to Mississippi State Law, upon issuance of the Letter of Final Determination, affected communities will require a paper map product for their formal ordinance update and adoption proceedings.

Risk MAP Program Measures:

flood risk reduction is an important goal, and there was a high level of interest in the Risk MAP program and the materials presented. Risk MAP Commitment Capture Forms have not been made available to the CTP at this time. On advice of FEMA Region 4, Project Charters were not distributed at the Discovery Meeting, but will be distributed as the scope of work is being finalized. No CNMS Capture Forms were returned by the communities, although several communities did complete and return community questionnaires. Follow up solicitations for comments and study requests were made to communities by e-mail on 7/24/12, 10/12/2012, and by letter on 7/26/2012.

ii. Project Summary:

The following section provides a more detailed description of the twenty-seven communities in the Middle Pearl-Strong watershed and some of the flood hazard/flood risk data and information that were researched and compiled for each.

Copiah County

Copiah County is located in the southwestern portion of the Middle Pearl-Strong watershed. The principle streams/river flowing through the County is the Pearl River. The estimated 2010 population within the watershed is 5,372. According to FEMA records, there are no repetitive loss properties within this portion of Copiah County. No Letter of Map Change has been issued for this area.

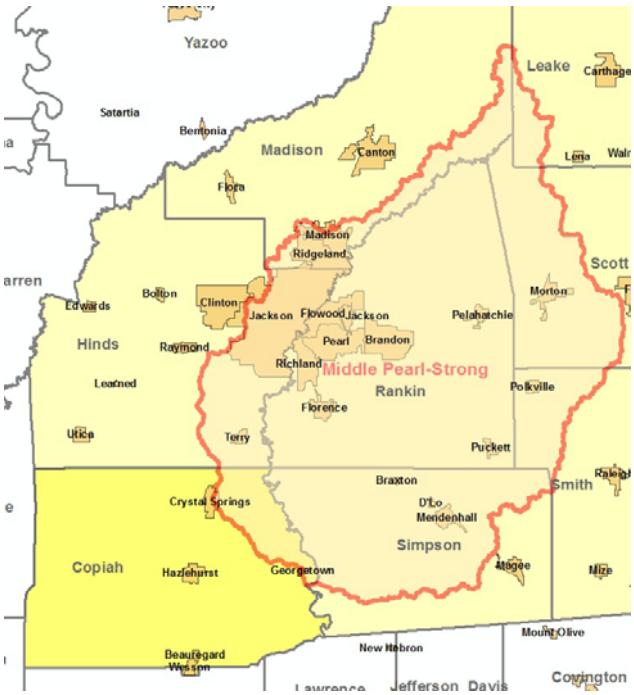

FIGURE 2: Copiah County

Copiah County's eastern boundary is created by the Pearl River and most flood damage over the years is due to river flooding. Flooding of the Pearl River affected the county in 1939, 1961, 1974, and 1979. Small stream and flash flooding also occur periodically, due to extended periods of heavy rain from tropical storms or stalled frontal systems.

A relatively small percentage of streams in Copiah County have FEMA flood zones designated. This is probably due to the relatively low population density in the outlying areas of the County and federal funding constraints. It should be noted that none of the effective Zone A stream studies have a hydraulic model basis. County officials have expressed interest in publishing base flood elevations along the Pearl River.

City of Crystal Springs

The City of Crystal Springs is located in Copiah County. A majority of the city is outside the Middle Pearl-Strong watershed. The only stream in the city within the watershed with a Special Flood Hazard Area is Brushy Creek East. The estimated 2010 population within the watershed is 2,344. According to FEMA records, there are no repetitive loss properties within the City of Crystal Springs. The Flood Hazard Mitigation Plan for the City of Crystal Springs (2011) lists 6 flooding events that affected the city between 1999 and 2010. All events listed were flash floods caused by heavy rain.

Town of Georgetown

The Town of Georgetown is located in Copiah County. The principle streams/rivers flowing through the city is the Pearl River. The estimated 2010 population within the watershed is 365. According to FEMA records, there are no repetitive loss properties within the Town of Georgetown.

Hinds County

Hinds County is located in the central-west portion of the Middle Pearl-Strong watershed. The principle streams/rivers flowing through the County are the Pearl River, Big Creek, and Rhodes Creek. The estimated 2010 population of the unincorporated areas within the watershed is 17,512. According to FEMA records, there are approximately 4 repetitive loss properties within this portion of Hinds County. Hinds County participates in FEMA's Community Rating System with a current rating of 9 (5% discounted insurance premiums). The Special Flood Hazard Area for Hinds County is relatively comprehensive, with flood zones defined for nearly all streams having over 1 square mile drainage area.

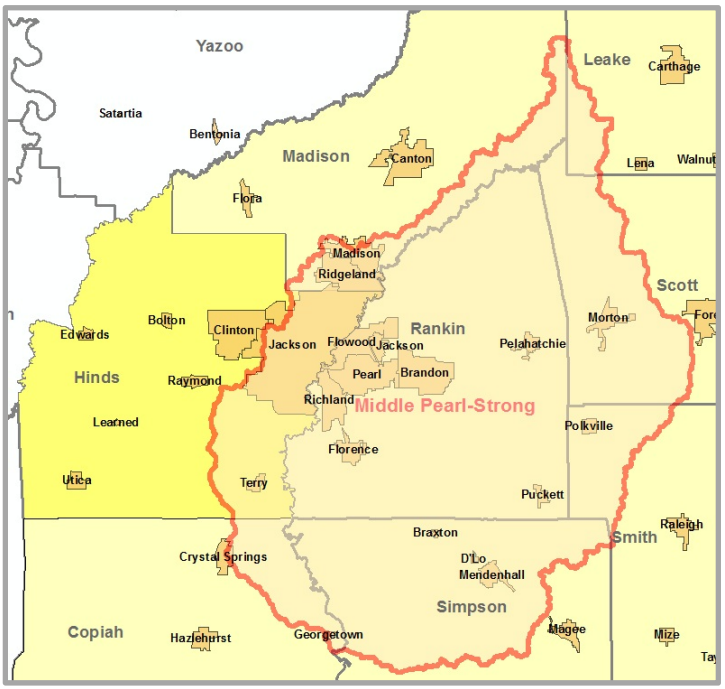

FIGURE 3: Hinds County

Nearly all streams studied within the watershed are Zone AE with base flood elevations. The 2009 County-wide Flood Insurance Study update made use of LiDAR data, acquired in 2006. The CNMS database did not reveal any major streams to be unverified in the unincorporated areas of Hinds County. There are two A Zone studies, Big Creek Tributary 4 and an unnamed tributary of Big Creek Tributary 2 that are unverified due to no models being available for the

streams. None of the county's critical facilities appear to be located within the Special Flood Hazard Area.

City of Byram

The City of Byram is located in Hinds County. Byram was incorporated for the second time in its history on June 16, 2009, and it is not listed as a community in the effective Hinds County Flood Insurance Study. The principle streams/rivers flowing through the city are the Pearl River, Big Creek, and Trahon Creek. The estimated 2010 population within the watershed is 11,628. According to FEMA records, there is approximately 1 repetitive loss property within the City of Byram.

The CNMS database did not reveal any major streams to be unverified in the City of Byram. According to the Flood Hazard Mitigation Plan (2012) for the City of Byram, there have been 12 significant flooding events between 1999 and 2010 that have directly impacted the city. All the events were flash flooding caused by heavy rainfall.

Potential areas of mitigation interest include areas along Meagan Drive, Gary Road near Robinson Estates, Robinson Estates, Bull Run, 5800 block of Terry Road, and The Ranch Subdivision. All of these areas have experienced property damage due to flooding.

City of Jackson

The City of Jackson is the county seat of Hinds County and is also the Capitol of the State of Mississippi. The principle streams/rivers flowing through the city are the Pearl River, Big Creek, Hanging Moss Creek, and Town Creek. Levees have been built around the Pearl River to mitigate flooding. The 2010 population estimate for Jackson within the watershed is 169,223. Jackson participates in FEMA's Community Rating System with a current rating of 8 (10% discounted insurance premiums).

According to FEMA records, there are 416 repetitive loss properties in the City of Jackson. Many of the repetitive losses are due to the historic flooding of the Pearl River in 1979 and 1983. Many of the other streams within the city have sporadic repetitive losses. It appears that the majority of the repetitive loss properties in the city are inside of FEMA designated flood zones.

Several streams were found to be unverified in the CNMS database. The following streams are unverified: Cany Creek, Eubanks Creek, Eubanks Creek Tributary 7, Hanging Moss Creek Tributary 5-2, Hardy Creek Tributary 1, Three Mile Creek, Town Creek, and Town Creek Tributary 3.

The Flood Hazard Mitigation Plan for the City of Jackson states that there have been 21 significant flooding events for the entire county between 2004 and 2009. All the events listed were flash flooding caused by heavy rainfall.

Potential areas of mitigation interest could include investigation of repetitive loss flooding and corrective action. Belhaven Creek near Murrah High School an unmapped stream, has flooded due to heavy rainfall. Also, several critical facilities are located within the special flood hazard zone. These include Central Fire Station, Police Precinct 1, Champion Center Shelter, Atmos Energy, and Fire Station 7. White Creek Road near East County Line Road has been straightened due to the addition of a 4-lane road.

Town of Terry

The Town of Terry is located in Southern Hinds County. The principle stream flowing through the town is Rhodes Creek. The 2010 population estimate for Terry is 1,063.

According to FEMA records, there are 2 repetitive loss properties in the Town of Terry. Both repetitive loss properties are on Utica Street and appear to be caused by flooding on Rhodes Creek. The CNMS database revealed Rhodes Creek to be an unverified study. The Flood Hazard Mitigation Plan for the Town of Terry (2011) states that there have been 22 significant flooding events for the town between 1999 and 2010. All of the events have been flash flooding due to heavy rainfall.

Potential areas of mitigation interest include areas along Utica Street. These areas have seen repetitive losses due to flooding.

Leake County

Leake County is located in the north-east portion of the Middle Pearl-Strong watershed. The principle streams/rivers flowing through the County is the Pearl River. The estimated 2010 population within the watershed is 1,478. According to FEMA records, there are no repetitive loss properties within this portion of Leake County. According to the CNMS database, no unverified streams are located within the watershed.

During the 1980's a flood control structure (Shoccoe Dam) for the Pearl River was proposed for this area of the county by the USACE. The proposal was abandoned in 1987, largely due to local opposition.

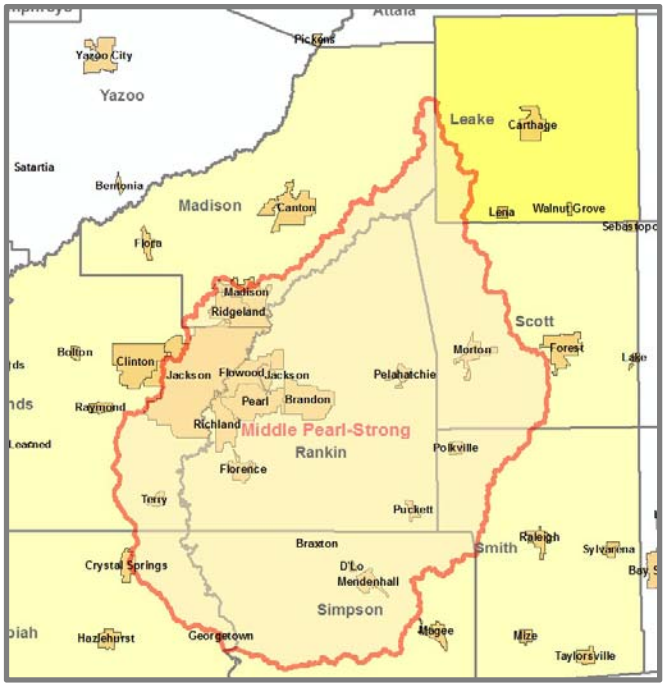

FIGURE 4: Leake County

Madison County

Madison County is located in the north-west portion of the Middle Pearl-Strong watershed. The principle streams/rivers flowing through the County is the Pearl River. The estimated 2010 population for the unincorporated areas within the watershed is 14,330. FEMA records indicate that there is one repetitive loss property within this portion of Madison County. According to the CNMS database, the Pearl River A Zone in the northeastern portion of the county has been determined to be unverified. The Flood Hazard Mitigation Plan for Madison County states that there have been 17 significant flooding events for the entire county between 1999 and 2010. All events have been flash floods caused by heavy rainfall.

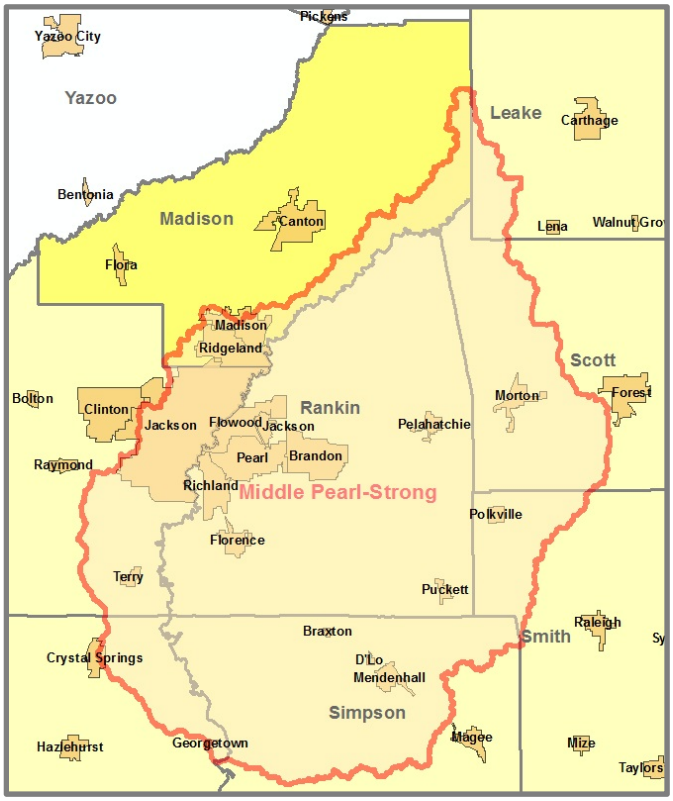

FIGURE 5: Madison County

City of Madison

The City of Madison is located in Madison County. The principle streams/rivers flowing through the city are Brashear Creek and Culley Creek. The 2010 population estimate for Madison within the watershed is 18,434. According to FEMA records, there are 3 repetitive loss properties within this portion of the City of Madison. Madison participates in FEMA's Community Rating System with a current rating of 8 (10% discounted insurance premiums). The CNMS database reveals that Brashear Creek is an unverified studied stream. The Flood Mitigation Plan for the City of Madison states that there have been 17 significant flooding events in the city between 1999 and 2010. All the events have been flash flooding caused by heavy rainfall.

Areas of potential mitigation interest include property along Brashear Creek and Culley Creek near Rice Road. The City of Madison has already constructed a flood control lake along Brashear Creek to alleviate flooding.

City of Ridgeland

The City of Ridgeland is located in Madison County. The city is located within the Middle Pearl-Strong Watershed in its entirety. The principle streams/rivers flowing through the city are Beaver Creek, Brashear Creek, Culley Creek, Purple Creek, School Creek, and White Oak Creek. The 2010 population estimate for Ridgeland is 24,047. According to FEMA records, there are 7 repetitive loss properties. Ridgeland participates in FEMA's Community Rating System with a current rating of 8 (10% discounted insurance premiums). The CNMS database reveals several studied streams are unverified. The unverified streams are Brashear Creek, Purple Creek, Purple Creek Tributaries 1, 4, 5, and 7, and School Creek. According to the Flood Mitigation Plan for the City of Ridgeland (2011), there have been 8 significant flooding events in the city between 1999 and 2009. One Hazard Mitigation Grant Project in the planning stages is for drainage improvements on School Creek in the Longmeadow Subdivision. Another potential project is Culley Creek channel improvements between Rice Road and the Natchez Trace Parkway.

Rankin County

Rankin County is located in the central portion of the Middle Pearl-Strong watershed. The County in its entirety is located within the watershed. The principle streams/rivers flowing through the County are the Pearl River, Pelahatchie Creek, Richland Creek, Steen Creek, and Terrapin Skin Creek. The estimated 2010 population within the unincorporated areas is 78,435. According to FEMA records, there are 19 repetitive loss properties within this portion of Rankin County.

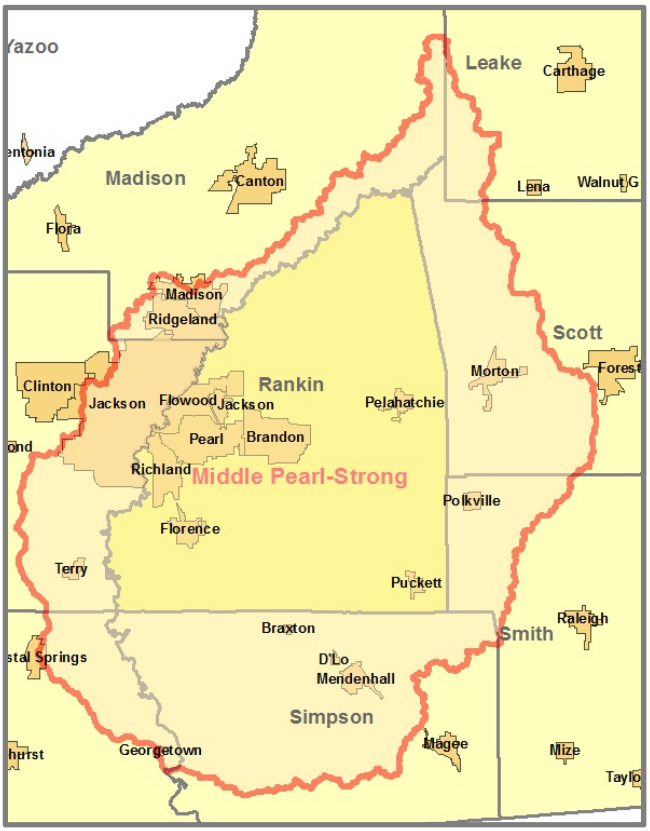

FIGURE 6: Rankin County

Rankin County is susceptible to flooding of the Pearl River along its western boundary, typically following prolonged rain within the central Mississippi area. Two major flooding events of the Pearl River have occurred in recent times, 1979 and 1983. The East Jackson Levee System is certified to protect much of this flood prone area from the 1.0% annual-chance flood event.

Most of the streams within Rankin County with over 1 square mile of drainage have a flood zone designation. In addition, 5-foot contour topographic data developed from 2-foot resolution aerial photography flown in 2006 by the State of Mississippi was utilized in part of the county's flood insurance study update, completed in 2012. This study is currently preliminary, and is expected to be effective in 2013. According to the CNMS database, Hog Creek, Richland Creek, Spring Branch, and Turtle Creek have unverified studies.

According to the Hazard Mitigation Plan for Rankin County (2010), twenty-two flood events occurred within the county between 1999 to 2010. All of the events were determined to be flash flooding caused by heavy rainfall.

City of Brandon

The City of Brandon is located in Rankin County and is the county seat. The principle streams/rivers flowing through the city are Richland Creek and Terrapin Skin Creek. The 2010 population estimate for Brandon is 21,705. According to FEMA records, there are four repetitive loss properties within the City of Brandon. The CNMS database reveals two AE Zone studies, Terrapin Skin Creek Tributaries 1 and 2, and two A Zone studies, Richland Creek Tributaries 3 and 5, as being declared unverified. Richland Creek Tributaries 3 and 5 have recently been restudied and are part of the Preliminary FIS for Rankin County. The Flood Hazard Mitigation Plan for the City of Brandon (2011) states that there have been 12 significant flooding events that have impacted the city. All 12 events have been flash flooding caused by heavy rainfall. Flooding from an unstudied stream near State Highway 18 (crossing of Highway 18 is approximately ½ mile from the intersection of State Highway 468) has resulted in the city buying out several properties due to damage from flooding.

Three critical facilities are located within the special flood hazard area. These are the Police Station, Renal Health Care, and the reservoir metering station.

City of Florence

The City of Florence is located in Rankin County. The principle streams/rivers flowing through the city are Butler Creek, Indian Creek, Indian Creek Tributary, and Steen Creek. The 2010 population estimate for Florence is 4,155. According to FEMA records, there are six repetitive loss properties within the City of Florence. The CNMS database reveals four streams that have been declared unverified. They are Indian Creek, Indian Creek Tributary, Steen Creek, and Town Branch. Indian Creek, Indian Creek Tributary, and Steen Creek have recently been restudied and are part of the Preliminary FIS for Rankin County. The Flood Hazard Mitigation Plan for the City of Florence (2010) states that the city has been impacted by 14 flooding events between 2000 and 2009. All events were described as flash flooding due to heavy rainfall.

Potential areas of mitigation include relocating or flood-proofing existing critical facilities. Eleven critical facilities appear to exist inside the special flood hazard area. This includes Fire Department #2, Victory Methodist Church, Alltel, Children's Workshop, main lift station, Stepping Stones Day Care and pump station, Roxbury Pump Station, Jerry's Pump Station, Church Street pump station, and the wastewater treatment plant.

City of Flowood

The City of Flowood is located in Rankin County. The principle streams/rivers flowing through the city are Hog Creek and Prairie Branch Canal. The 2010 population estimate for Flowood is 7,823. According to FEMA records, there are 6 repetitive loss properties within the City of Flowood. The Flood Hazard Mitigation Plan for the City of Flowood (2011) states that there have been 11 significant flooding events that have impacted the city between the years 1999 and 2010. All of these events were flash floods due to heavy rainfall. The CNMS database reveals

that Hog Creek (the portion upstream of the airport), Hog Creek Tributary, Neely Creek Right Channel, and Prairie Branch Canal have been declared unverified. The main area of concern for the City of Flowood is Hog Creek near the Laurel Park Apartments. Flooding from Hog Creek caused damage to the apartment complex in 2012.

City of Pearl

The City of Pearl is located in Rankin County. The principle streams/rivers flowing through the city are Hog Creek and Prairie Branch Canal. The 2010 population estimate for Pearl is 25,092. According to FEMA records, there are 33 repetitive loss properties within the City of Pearl. The Flood Hazard Mitigation Plan (2011) for the City of Pearl states that there have been 21 significant flooding events that have impacted the city. All the flooding events have been flash floods caused by heavy rainfall.

The CNMS database reveals three streams have been declared unverified within the City of Pearl. They are Neely Creek Right Channel, Prairie Branch Canal, and Richland Creek. Neely Creek Right Channel has been restudied and is in the Preliminary Rankin County DFIRM. A small, city owned levee system, the Pearson Levee, exists to lower flood risk for about 25 properties along Richland Creek. This levee has a provisional accreditation on the Preliminary DFIRM.

Town of Pelahatchie

The Town of Pelahatchie is located in Rankin County. The principle streams/rivers flowing through the city are Pelahatchie Creek, Pelahatchie Creek Tributary 1, and Pierce Creek. The 2010 population estimate for Pearl is 1,334. According to FEMA records, there are no repetitive loss properties within the Town of Pelahatchie. The Flood Hazard Mitigation Plan for the Town of Pelahatchie (2011) states that there have been 11 significant flooding events that have impacted the town. All flooding events have been flash floods caused by heavy rainfall.

Village of Puckett

The Village of Puckett is located in Rankin County. The principle streams/rivers flowing through the city is South Clear Creek. The 2010 population estimate for Pearl is 316. According to FEMA records, there are no repetitive loss properties within the Village of Puckett; however, since no policies are in place, these records may not reflect actual flood damage impacts very well. The Flood Hazard Mitigation Plan for the Village of Puckett (2011) states that there have been 3 significant flooding events that have impacted the community between 1999 and 2010. However, there have been no significant flooding issues since February 2004. All flooding events have been flash floods caused by heavy rainfall.

City of Richland

The City of Richland is located in Rankin County. The principle streams/rivers flowing through the city is Richland Creek. The 2010 population estimate for Richland is 6,912. According to FEMA records, there are 4 repetitive loss properties within the City of Richland. The CNMS database reveals that Richland Creek and Squirrel Branch have been declared unverified. The Flood Hazard Mitigation Plan for the City of Richland (2011) states that there have been 18 significant flooding events between 1999 and 2010 that have impacted the city. All flooding

events have been flash floods caused by heavy rainfall. The City stated that two areas have been having flooding issues: the Highway 49 South crossing of Squirrel Branch and the Southgate Drive crossing of an unnamed stream.

Scott County

Scott County is located in the central-east portion of the Middle Pearl-Strong watershed. The principle streams/rivers flowing through the County are the Strong River, Caney Creek, Coffee Bogue Creek, and Pelahatchie Creek. The estimated 2010 population within the watershed is 9,447. According to FEMA records, there are no repetitive loss properties within this portion of Scott County.

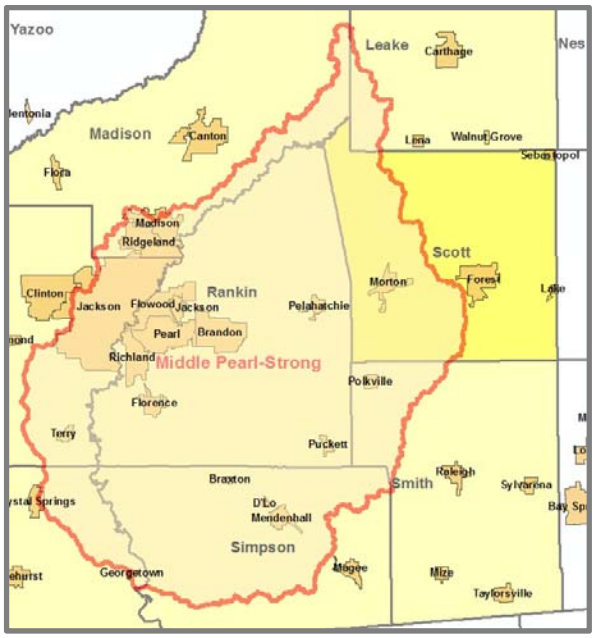

FIGURE 7: Scott County

City of Morton

The City of Morton is located in Scott County. The principle streams/rivers flowing through the city is Pelahatchie Creek. The 2010 population estimate for Morton is 3,462. According to FEMA records, there is 1 repetitive loss properties within the City of Pearl. The CNMS database revealed no unverified streams within the City of Morton.

Simpson County

Simpson County is located in the south-central portion of the Middle Pearl-Strong watershed. The principle streams/rivers flowing through the County are the Strong River, Big Creek, Campbell Creek, Dabbs Creek, Limestone Creek, Sanders Creek, and Sellers Creek. The estimated 2010 population within the watershed is 15,547. According to FEMA records, there are 3 repetitive loss properties within this portion of Simpson County. The CNMS database reveals that all A Zone studies within the county have been declared unverified due to no models being found for the studies.

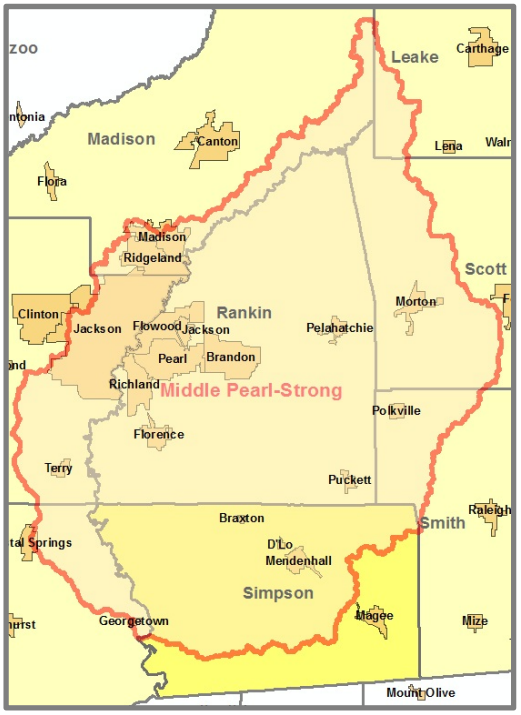

FIGURE 8: Simpson County

Village of Braxton

The Village of Braxton is located in Simpson County. The principle streams/rivers flowing through the city is South Clear Creek. The 2010 population estimate for Braxton is 316. According to FEMA records, there are no repetitive loss properties within the Village of Puckett;

however, since no policies are in place, these records may not reflect actual flood damage impacts very well. The CNMS database reveals that the A Zone study for Sanders Creek is unverified due to no model
being found for the study.

Town of D'Lo

The Town of D'Lo is located in Simpson County. The principle streams/rivers flowing through the city is the Strong River. The 2010 population estimate for D'Lo is 452. According to FEMA records, there are no repetitive loss properties within the Town of D'Lo. No streams were found to be unverified in the CNMS database.

City of Mendenhall

The City of Mendenhall is located in Simpson County, and is the county seat. The principle streams/rivers flowing through the city is Sellers Creek. The 2010 population estimate for Mendenhall is 2,504. According to FEMA records, there are 15 repetitive loss properties within the City of Mendenhall. The CNMS database reveals two A zone studies, Sellers Creek Tributary 1 and an unnamed stream, are unverified due to no models being found for the studies.

Potential areas of mitigation interest are areas around Sellers Creek. Sellers Creek is subject to overtopping its banks and flooding streets and yards during heavy storms. An abandoned railroad embankment upstream of Dixie Avenue may be contributing to the flooding in the vicinity.

Smith County

Smith County is located in the south-east portion of the Middle Pearl-Strong watershed. The principle streams/rivers flowing through the County are the Strong River and Raspberry Creek. The estimated 2010 population within the watershed is 3,022. According to FEMA records, there are no repetitive loss properties within this portion of Smith County. The CNMS database reveals that all A Zone streams within the watershed area of the county have been declared unverified due to no models being found for the studies.

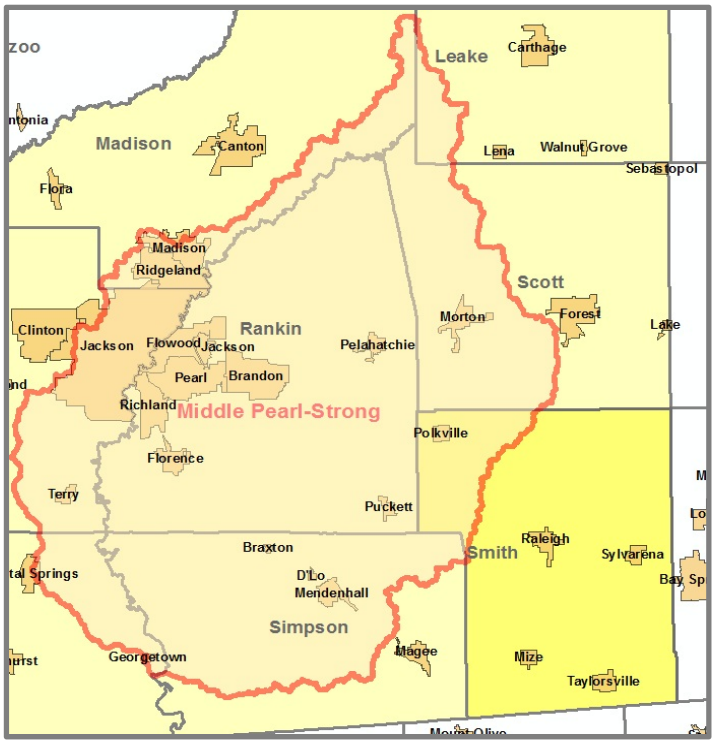

FIGURE 9: Smith County

Town of Polkville

The Town of Polkville is located in Scott County. The only major stream that impacts the Town of Polkville is Raspberry Creek. The 2010 population estimate for Mendenhall is 2,504. According to FEMA records, there are no repetitive loss properties within the Town of Polkville; however, since no policies are in place, these records may not reflect actual flood damage impacts very well. The CNMS database reveals that none of the studied streams within the Town of Polkville have been declared unverified.

Project Scope

New or updated flood study is proposed for a total of 25 stream reaches in the Middle Pearl-Strong watershed. Most of the study mileage is composed of updating existing studies in Hinds, Madison, and Rankin counties. Three unstudied streams will be studied: an unnamed tributary in Brandon that has caused flooding issues, Raspberry Creek in Scott County, and a portion of an unnamed stream outside of Florence. In addition, an unnamed stream that has an A Zone study in Mendenhall will be updated with a limited detail study. The study reaches are proposed based on the CNMS assessment. The specific study reaches are listed in Table 3.

TABLE 3: Proposed Study Reaches

Stream Name	Reach Length (miles)	County (Community)	Study Type	Justification
Cany Creek	6.5	Hinds County (City of Jackson)	Detailed	Unverified by CNMS.
Eubanks Creek	4.9	Hinds County (City of Jackson)	Detailed	Unverified by CNMS.
Hardy Creek Tributary 1	0.5	Hinds County (City of Jackson)	Detailed	Requested by the community. Floodway does not contain stream.
Hog Creek	6.2	Rankin County (Unincorporated Areas)	Detailed	Unverified by CNMS.
Prairie Branch Canal	4.8	Rankin County (Cities of Flowood and Pearl)	Detailed	Unverified by CNMS.
Purple Creek Tributary 1	1.0	Madison County (City of Ridgeland)	Detailed	Unverified by CNMS.
Purple Creek Tributary 4	0.7	Madison County (City of Ridgeland)	Detailed	Unverified by CNMS.
Purple Creek Tributary 5	0.8	Madison County (City of Ridgeland)	Detailed	Unverified by CNMS.
Purple Creek Tributary 6	0.6	Madison County (City of Ridgeland)	Detailed	Unverified by CNMS.

Raspberry Creek	2.0	Scott and Smith Counties (Unincorporated Areas)	A	SFHA mismatch at county boundaries.
Three Mile Creek	2.4	Hinds County (City of Jackson)	Detailed	Unverified by CNMS.
Town Branch	2.7	Rankin County (City of Florence)	Detailed	Unverified by CNMS.
Town Creek	7.6	Hinds County (City of Jackson)	Detailed	Unverified by CNMS.
Town Creek Tributary 2	0.5	Hinds County (City of Jackson)	Limited Detail	Requested by the community, currently Zone A.
Town Creek Tributary 3	1.1	Hinds County (City of Jackson)	Detailed	Unverified by CNMS
Turtle Creek	1.1	Rankin County (Unincorporated Areas)	Detailed	Unverified by CNMS
Unnamed Stream	2.9	Rankin County (City of Brandon)	A	Unstudied stream causing flooding in Brandon. Some properties have been mitigated.
Unnamed Stream`	0.5	Rankin County (Unincorporated Areas)	A	An unstudied portion in the county. Stream has been studied in the City of Florence. The new study would provide a continuous study for the whole stream.

A compilation of study stream mileages (existing and proposed) is provided in Table 4. Under this plan of work, the total number of Zone AE stream mileage would increase by 0.3 miles. The total number of Zone A mileage would increase by 5.4 miles.

Summarize totals from table above, detail = 40.9, limited detail = 0.5, Zone A = 5.4 miles

Table 4: Total Stream Mile Counts by Type of Study

	Coastal	Enhanced	Limited Detailed	Base	Redelineation	Verified Digital Conversion
Effective Flood Insurance Study	0	566.6	0.0	1,158.0		
Updated Effective Studies	0	40.9	0.5	0.0	0	0
New Studies Identified	0	0.0	0.0	5.4		

Table 5 below lists the existing (effective) New, Verified, or Updated Engineering (NVUE) compliance mileage for the Middle Pearl-Strong watershed and the expected NVUE compliance mileage after the study is completed. As part of the Discovery process, all stream miles have been assessed and categorized as *Verified* or *Unverified*.

Table 5: NVUE Compliance for the Middle Pearl-Strong Watershed

	Zone AE			Zone A		
	Verified	Unverified	Unknown	Verified	Unverified	Unknown
Effective Stream Mileage	413	157	0	322	807	0
Stream Mileage to Remain Unchanged by This Study	413	116	0	322	801	0
Mileage that is Updated by This Study	0	41	0	0	1	0
Mileage that is Redelineated by This Study	0	0	0	0	0	0
Mileage That is Added by This Study (New or Leveraged)	1	0	0	5	0	0
Total Stream Mileage After Current Study	455	116	0	327	801	0

Table 6 provides a summary of how the proposed engineering and mapping work, once completed, would contribute to some of FEMA's national metrics. All new and updated stream studies are presumed to satisfy both the Floodplain Boundary Standard (FBS) for mapping quality and the New, Verified, or Updated Engineering (NVUE) standard for engineering quality. Most of the new study is being conducted in areas of relatively high population density. Raspberry Creek is probably the only stream that will fall into class C (low population and anticipated growth). The estimated stream mileage within the 3 risk classes is 26.6 for class A, 18.2 for class B, and 2.0 for class C. The Area to be mapped under the various County FIS updates is estimated by computing the number of square miles based on the anticipated width of the new Special Flood Hazard Area multiplied by the length of each proposed study stream reach. The mapped population is estimated by summing the population within each community, based on the census blocks that lie mostly within the watershed boundary, than prorating and summing those populations based on ratio of total area to anticipated mapping area for each community.

Table 6: National Metrics

ITEM	DESCRIPTION	VALUE
Floodplain Boundary Standard (mostly class A and B)	*Estimated number of stream miles that will meet FBS for the new FIS*	46.8
Updated Effective Studies, New, Verified, or Updated Engineering (NVUE)	*Estimated number of miles that will meet NVUE requirements for the new FIS*	46.8
Area	*Area in square miles being mapped with new FIS*	12

Population	*Population being mapped with new FIS*	40,213

Based on the proposed scope of work, a portion of the Hinds, Madison, and Rankin County-wide Flood Insurance Studies would require updating. The magnitude of the revision would vary. Table 7 provides a list of the FIRM panels that would likely be updated for each County as a result of this work, along with the percentage of total panels for each County that would be revised. This gives a notion of how extensive the revision would be for a particular County FIS.

Table 7: Proposed FIRM Panel Revisions

Countywide FIS	Panels Affected	Percent of Total Panels
Copiah	None	0%
Hinds	0292, 0294, 0301, 0302, 0303, 0304, 0306, 0308, 0309, 0311, 0312, 0313, 0314, 0316, 0435, 0455	20%
Leake	None	0%
Madison	0567, 0569	4%
Rankin	070, 0159, 0178, 0179, 0181, 0182, 0183, 0184, 0186, 0187, 0194, 0317, 0319, 0335, 0355	16%
Scott	0400	3%
Simpson	None	0%
Smith	0025	4%

Anticipated partner contributions in the form of geospatial data, engineering, outreach, or other potential mapping activities are compiled in Table 8. The Table is formatted based on FEMA's document entitled "Estimating the Value of Partner Contributions to Flood Mapping Projects 'Blue Book'" version 3.0, September 2011. The unit costs are also taken from this document. Most of the contributions are in the form of enhanced topographic data and base mapping elements.

Table 8: Partner Contributions

Project Element	Unit	Unit Cost	Units	Total Cost
Topographic Data Development (Rolling)	Square miles	$200	1,990	398,000
Indep. QA/QC of Topo Data (Rolling)	Square miles	$30	1,990	59,700
Base Map Data 1-foot orthophoto	Square miles	$100	1,609	160,900
Base Map Data 1-meter orthophoto	Square miles	$20	381	7,620

Base Map Data road/street centerlines	Square miles	$10	1,897	18,970

Partner sources of topographic data are two types: 1. LiDAR available for Hinds Madison, and Rankin counties and 2. stereoscopically compiled 5-foot elevation contour for Scott and Smith counties (see Table 11 and Figure 10 for details on these datasets). Proposals are currently being solicited for a multi-county 1-foot pixel resolution orthophotography project that will cover all watershed counties except Leake, Scott, and Smith. If this product is not available, the most recent, lower resolution product that meets FEMA specifications will be used.

Value for topographic data development and QA/QC thereof is claimed for the entire watershed since it is likely that hydrologic engineering will be necessary for all or nearly all of the watershed. Value for Base Map data is limited to an estimate of the area covered by the updated FIRM panels with the exception of building footprints. Units for building footprints are further limited by their availability in only Hinds, Madison, and Rankin counties. These data would be available for more refined flood risk assessments for those three counties.

III. Watershed Stakeholder Coordination

Stakeholder coordination for the Middle Pearl-Strong watershed was conducted by first completing an extensive table of watershed contacts. The table includes a tab for State-wide contacts and one for Watershed-specific contacts. State-wide contacts would largely remain consistent regardless of the location of the Discovery project within Mississippi, while Watershed-specific contacts would vary. The following State and Federal agencies compose the State-wide contacts list:

State: Mississippi Department of Environmental Quality
Mississippi Emergency Management Agency
Mississippi Department of Transportation
Mississippi Insurance Commission
Mississippi Development Authority

Federal: Federal Emergency Management Agency (Region IV)
U. S. Geological Survey
Natural Resource Conservation Service
U. S. Army Corps of Engineers
National Oceanic and Atmospheric Administration
Office of U.S. Senator Cochran
Office of U.S. Senator Wicker
Office of U.S. Representative Harper

Below is a list of Watershed specific contacts:

Community Chief Executive Officers
Community Floodplain Administrators
County Emergency Management Agency Directors
County/Regional Economic Development District Directors
NRCS District Conservationists

A comprehensive list of watershed contacts for the Middle Pearl Strong watershed is provided in Table 9.

Table 9. List of the Middle Pearl-Strong Watershed Stakeholders

Name	Community/Agency	Position
The Honorable Arthur Lee Evans, Jr.	City of Crystal Springs	Mayor, City of Crystal Springs
The Honorable Robert W. Windom, Jr.	Town of Georgetown	Mayor, Town of Georgetown
Mr. Perry Hood	Copiah County	President, Copiah County BOS
Mr. Robert Graham	Hinds County	President, Hinds County BOS
The Honorable Nick Tremonte	City of Byram	Mayor, City of Byram
The Honorable Rosemary Aultman	City of Clinton	Mayor, City of Clinton
The Honorable Harvey Johnson	City of Jackson	Mayor, City of Jackson

The Honorable Roderick T. Nicholson	Town of Terry	Mayor, Town of Terry
The Honorable Mary Hawkins Butler	City of Madison	Mayor, City of Madison
The Honorable Gene McGee	City of Ridgeland	Mayor, City of Ridgeland
Mr. Tony Smith	Leake County	Leake County BOS
John Bell Crosby	Madison County	President, Madison County BOS
The Honorable Greg Butler	City of Morton	Mayor, City of Morton
Mr. Tim Sorey	Scott County	Scott County BOS
The Honorable Mable Everett	Village of Braxton	Mayor, Village of Braxton
The Honorable Steve Womack	City of Mendehall	Mayor, City of Mendenhall
The Honorable John Henry Berry	Town of D'Lo	Mayor, Town of D'Lo
Mr. Mickey Berry	Simpson County	Simpson County BOS
The Honorable Robert Miles	Town of Polkville	Mayor, Town of Polkville
Mr. Howard Hammons	Smith County	Smith County BOS
The Honorable Tim Coulter	City of Brandon	Mayor, City of Brandon
The Honorable Robert Morris	Town of Florence	Mayor, Town of Florence
The Honorable Gary Rhoads	City of Flowood	Mayor, City of Flowood
The Honorable Brad Rogers	City of Pearl	Mayor, City of Pearl
The Honorable Knox W. Ross, Jr.	Town of Pelahatchie	Mayor, Town of Pelahatchie
The Honorable Russell Espiritu	Village of Puckett	Mayor, Village of Puckett
The Honorable Mark Scarborough	City of Richland	Mayor, City of Richland
Mr. Jay Bishop	Rankin County	Rankin County BOS
Ms. Kim Vaughn	City of Crystal Springs	City Clerk
Mr. Alan Faler	Town of Georgetown	Building Official
Mr. Rick Stevens	Copiah County	E-911 Coordinator
Mr. Darren McQuirter	Hinds County	Director of Zoning and Permits
Mr. Pat Guest	City of Byram	City Engineer
Mr. Robert Touchstone	City of Clinton	Building Inspector
Mr. Robert Lee	City of Jackson	Floodplain Administrator
Mr. Roderick Nicholson	Town of Terry	Mayor
Mr. Tommy Malone	Leake County	EMA Director
Mr. Alan Hoops	City of Madison	Director, Building and Planning
Ms. Cynthia James	City of Ridgeland	Engineer
Mr. Brad Sellers	Madison County	Zoning Administrator
Mr. Joel Davidson	City of Morton	Zoning Administrator
Mr. Alvin Seaney	Scott County	EMA Director
Ms. Mayble Everett	Village of Braxton	Mayor
Ms. Judy May	City of Mendehall	City Clerk
Ms. Tina Everett	Town of D'Lo	Alderman
Mr. Glenn Jennings	Simpson County	EMA Director
Mr. Robert W. Miles	Town of Polkville	Mayor

Mr. Tate Revette	Smith County	EMA Director
Mr. Pat Guest	City of Brandon	City Engineer
Mr. Bill Taylor	Town of Florence	Public Works Director
Mr. Mike Prestage	City of Flowood	Building Official
Mr. Johnny Steverson	City of Pearl	Community Development Director
Mr. Lynn Gunn	Town of Pelahatchie	Zoning Administrator
Mr. Russell Espiritu	Town of Puckett	Mayor
Mr. Jeff Sims	City of Richland	Building Official
Mr. Roy Edwards	Rankin County	Floodplain Administrator
Mr. Randle Drane	Copiah County	EMA Director
Mr. Jimmie Lewis	Hinds County	EMA Director
Mr. Tommy Malone	Leake County	EMA Director
Mr. Bob Wedgeworth	Rankin County	EMA Director
Mr. Steve Champlin	MDEQ	Flood Mapping Director
Mr. Charles Curcio	RSC	Project Manager
Mr. Stacey Ricks	MEMA	State NFIP Coordinator
Mr. Bill Brown	MEMA	Deputy Director
Mr. Bill Patrick	MEMA	Plans Bureau Director
Ms. Jana Henderson	MEMA	State Hazard Mitigation Officer
Ms. Kristen Martinenza	DHS - FEMA Region IV	Regional Project Officer
Mr. Richard Flood	DHS - FEMA Region IV	Mitigation Specialist
Ms. Camille Crain	DHS - FEMA Region IV	HMA Specialist
Mr. James McClellan	MDEQ Office of Land Safety	Director, Dam Safety Division
Mr. Mike Chaney	Mississippi Insurance Department	State Insurance Commissioner
Mr. Mickey Plunkett	USGS--MS Water Science Center	Director
Ms. Melinda McGrath	Missisippi Dept. of Transportation	Executive Director
Mr. Homer L. Wilkes	NRCS	State Conservationalist
Ms. Katy Breaux	USACE –Vicksburg District	Engineer
Ms. Kay Whittington	MDEQ Office of Pollution Control	Director, Basin Management
Ms. Amanda Roberts	NOAA	Senior Hydrologist

While the overall list of stakeholders is broad and inclusive, the Regional Study Team identified a “short list” of primary contacts consisting of community Floodplain Administrators and county Emergency Management Agency Directors. Initial contact with these primary stakeholders was made via personal letter signed by MEMA and MDEQ with appropriate attachments, including a map of the Middle Pearl-Strong watershed and its member communities, a FEMA brochure giving background on the Risk MAP Program, and a Coordinated Needs Management Strategy request form. This mailing was sent on June 1, 2012, approximately 4 weeks prior to the Discovery meeting.

On June 8 (about 3 weeks prior to Discovery meeting), a general invitation was extended to all of the remaining stakeholders listed above in the form of a memorandum. These memos were sent

via e-mail to all contacts for whom we had a verified e-mail address. For those contacts for whom we did not have e-mail, the memos where sent by regular mail. The body of the memo and supporting attachments were similar to the letter and attachments sent to primary stakeholders.

About 1 week prior to the meeting, an e-mail reminder was sent to all stakeholders for whom which we had on file a verified e-mail address. Examples of all correspondence can be found in Appendix G—Community Correspondence.

IV. Data Analysis

This section outlines the data that has been collected in conjunction with the Discovery process to date. Some datasets are known to exist and are accessible but have not yet been acquired. Very little if any new community-based data has been obtained. Post-Discovery meeting follow up yielded no new data from the communities. Most of the data is from State and Federal government sources.

Table 10. Data Collection for the Middle Pearl Watershed

Data Types	Deliverable/Product	Source
Demographics	Geospatial Data/Reports	U.S. Census Bureau
Insurance Policies	CAV reports	MEMA Floodplain Management Bureau
Mitigation Plans	PDF Document	Mississippi EMA
Claims Data	CAV reports	MEMA Floodplain Management Bureau
Letter of Map Change (LOMCs)	Excel Spreadsheets, Spatial Files	MSC
Repetitive Loss	Discovery Map Geodatabase	FEMA RIV
Medium/High Hazard Dams	Discovery Map Geodatabase	MDEQ—Dam Safety Division
Boundaries: Community	Discovery Map Geodatabase	MARIS
Boundaries: County and State	Discovery Map Geodatabase	MARIS
Boundaries: Watersheds	Discovery Map Geodatabase	U.S. Geologic Survey
Effective Floodplains: Modernized SFHAs	Discovery Map Geodatabase	FEMA's Regional Flood Hazard Layer
Future or recent highway improvement, bridge, culvert, levee locations	Discovery Map Geodatabase	MDOT—Bridge Division, USACE—Vicksburg District
Hydrography	Discovery Map Geodatabase	Mississippi Digital Earth Model
Mitigation Projects: Recent, ongoing, planned, desired FEMA/OFA/local projects	Discovery Map Geodatabase	FEMA/MEMA
Recent land changes (development, wildfires, landslides, etc.)	Discovery Map Geodatabase	TBD
Stream Gages	Discovery Map Geodatabase	U.S. Geologic Survey
Study Needs: FEMA	Discovery Map Geodatabase	Coordinated Needs Management System (CNMS)
Study Needs: Recent, ongoing, planned, desired FEMA/OFA/local studies	Discovery Map Geodatabase	various

Topographic Availability	Discovery Map Geodatabase	Mississippi Digital Earth Model
Transportation: Railroads	Discovery Map Geodatabase	MARIS
Transportation: Roads	Discovery Map Geodatabase	Mississippi Digital Earth Model
Community Contacts	Excel Spreadsheets	Local websites, State/FEMA updates

i. Data that can be used for Flood Risk Products

This subsection describes specific data that may be used in the development and support of new Flood Risk Products for the Middle Pearl-Strong watershed. There exists a variety of topographic data throughout the watershed. These various types and their details are listed in Table 11 below. The coverage areas for this data sources are illustrated in Figure 10.

Table 11: Topographic Data Sources

Topographic Dataset Type	Coverage Area	New/Existing OR Leveraged	Accuracy & Year Acquired	Source/ Data Vendor	Contact Information
Points and Breaklines	Copiah, Leake, Scott, Smith, and Simpson Counties	Existing MDEM Stereo-compiled topo	DEMs from 2-ft pixel orthos; support 5' contours. Data captured in 2006..	Public domain,	Steve Champlin-MDEQ, Office of Geology
LiDAR	Hinds County	Existing MDEM LiDAR	RMSE 18.5cm Vertical Accuracy; 2007.	Public domain, Fugro Earthdata for State of Mississippi	Steve Champlin-MDEQ, Office of Geology
LiDAR	Madison County	New MDEM Lidar	Horizontal Accuracy meets the required NSSDA of 2.20 ft and the vertical meets the NSSDA RMSE of 0.61 ft. 2012	Public domain,	Steve Champlin-MDEQ, Office of Geology
LiDAR	Rankin and Simpson Counties	New MDEM Lidar	Horizontal Accuracy meets the required NSSDA of 2.20 ft and the vertical meets the NSSDA RMSE of 0.61 ft. 2012	Public domain,	Steve Champlin-MDEQ, Office of Geology

ii. Other Data and Information

In addition to the topographic data described in the previous section, other GIS data layers have been inventoried and assessed for the project, as given in Table 13. Most of the layers originate from either the Mississippi Digital Earth Model (MDEM) or the Mississippi Automated Resource Information System (MARIS).

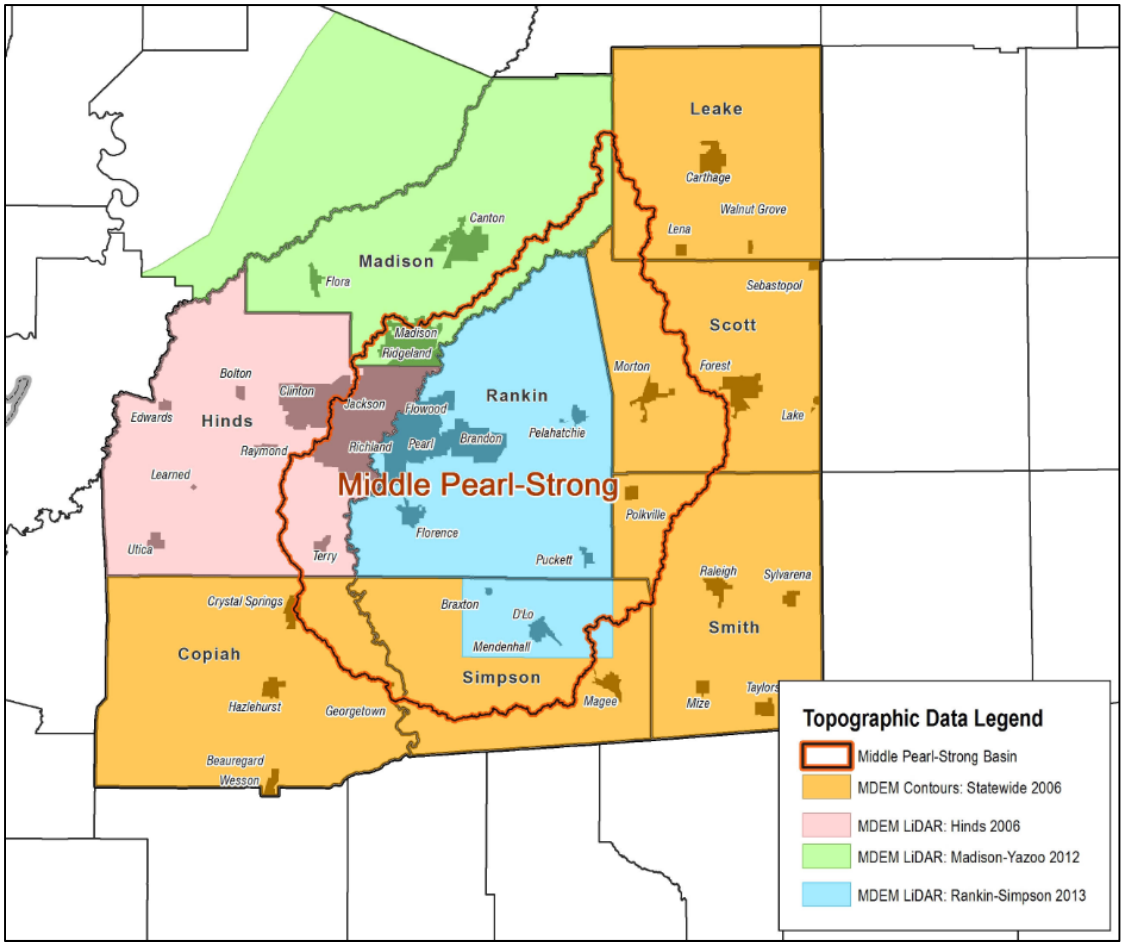

Figure 10: Topographic Data Coverage for the Middle Pearl-Strong watershed

A Hazard Mitigation Plan is a document that assesses the potential hazards which could occur within communities and it typically includes a detailed list of "Mitigation Actions" that could be taken to prepare the communities for these possible hazards. The Plan must be updated every 5 years and it includes detailed descriptions of mitigation goals and project implementation. The status of current hazard mitigation plans is shown in Table 12: Status of Hazard Mitigation Plans

Table 12: Status of Hazard Mitigation Plans

Community	Hazard Mitigation Plan Status	Plan Type
Copiah County	Expires 11/04/2015	Multi-Jurisdictional (MJ) (includes Georgetown)
Hinds County	Expires 11/29/2016	MJ
Leake County	Expires 10/03/2017	MJ
Madison County	Expires 11/21/2016	Single Jurisdiction (SJ)

Rankin County	Expires 09/29/2016	SJ
Scott County	Expires 09/17/2017	MJ (includes Morton)
Simpson County	Expires 09/28/2015	MJ (includes Braxton, D'Lo)
Smith County	Approved—Adoption Pending	MJ (includes Polkville)
Brandon	Expires 02/24/2016	SJ
Byram	Expires 05/17/2017	SJ
Crystal Springs	Expires 09/29/2016	SJ
Florence	Expires 01/25/2016	SJ
Flowood	Expires 09/20/2016	SJ
Jackson	Expires 06/27/2016	SJ
Madison	Expires 01/11/2017	SJ
Mendenhall	Expires 04/18/2016	SJ
Pearl	Expires 01/18/2017	SJ
Pelahatchie	Expires 09/26/2016	SJ
Puckett	Expires 12/15/2016	SJ
Richland	Expires 09/13/2016	SJ
Ridgeland	Expires 04/25/2016	SJ
Terry	Expires 09/20/2016	SJ

There are four levee systems that are known in this watershed. Two of these are USACE program levees along the east and west banks of the Pearl River. They are commonly known as the East Jackson and Jackson Fairgrounds Flood Control levees, respectively. These levees were certified by the USACE in February, 2010. Two non-USACE program levees are the Savanna Street Waste Water Treatment Plant levee, owned by the City of Jackson, and the Pearson Levee owned by the City of Pearl. The Savanna Street levee is intended to protect the treatment plant from flooding on the Pearl River. Its provisional accreditation expired in April, 2011. The Pearson Levee was built to protect a small residential area from flooding on Richland Creek. It has a provisional accreditation that will expire in April, 2014.

According to MDEQ records, the Middle Pearl-Strong watershed has 33 dams classified as high hazard (failure could result in loss of life) and 6 classified as significant hazard. Of the high hazard dams identified, four do not have Emergency Action Plans completed.

At this time, Copiah, Hinds, Madison, Rankin, and Scott are known to have digital parcel data. Hydrographic data (waterlines/waterbodies) were produced as part of the MDEM stereo-compiled topographic data outlined in the previous section. County and municipal boundaries were updated in the fall of 2010. The National Agriculture Imagery Program (NAIP) 2012 collection was due to become available in November, 2012. Transportation data is available from MDEM's road centerline project for all counties except Smith, digitized from 2006 imagery. For the remaining counties, transportation features are derived from the most recent TIGER database. Additional MDEM roads data may be available for incorporating into final mapping products. No extraterritorial jurisdictions are known for the study area, based on a review of the Community Status Book for Mississippi. Table 13 provides a listing of known GIS data layers that may be available to support this project.

Table 13: GIS data layers available

GIS data available	Source (ie, State, Local, Federal)	Acquisition Date	Vertical Datum	Horizontal Datum	Use Restrictions?
Cadastral Data	Local (Copiah, Hinds, Madison, Rankin, Scott	Varies	n/a	unknown	yes
Hydrography	State	2006-2007	NAVD88	NAD83	no
Flood Hazard Information	Federal	2004-2009	NAVD88	NAD83	no
County Boundary Data	State	2010	n/a	NAD83	no
Municipal Boundary	State	2010	n/a	NAD83	no
Digital Orthophoto	Federal	2012 (pending)	n/a	NAD83	no
Publicly Owned Lands Data	State	2010	n/a	NAD83	no
Transportation Data	State	2010	n/a	NAD83	no
Elevation Data	See Table 11				
ETJ Data	n/a	n/a	n/a	n/a	n/a

Once the elevation and imagery data is obtained from the anticipated sources, the National Digital Elevation Program (NDEP) Project Tracking System and the National Digital Orthophoto Program (NDOP) Tracking Systems will be updated with information required. NDEP Project tracker entries for both the Madison-Yazoo and Rankin-Simpson LiDAR acquisition projects have been initiated with assistance from Geospatial Data Coordination staff. A NDOP Project tracker entry will be initiated once the selected Orthoimagery base map source data is obtained.

During the Discovery phase, a review of current mitigation activities in the Middle Pearl-Strong watershed was conducted. Based on this review, seven mitigation projects are underway or recently completed. These include property buyouts in Brandon (4), Florence (2), and Mendenhall (1). Brashear Creek in the City of Madison has had two detention ponds placed in the stream to alleviate flooding.

iii. Project Status

The project schedule is significantly delayed as compared to Table 6.1—Mapping Activities Schedule in the Mapping Activities Statement No. FY10.09. This is due to a couple of reasons. First, the MAS template was based on a traditional MapMod project schedule and did not account for the additional research and analysis that comprise the pre-Discovery phase, as opposed to a standard Scoping phase. Second, between the time the MAS was executed and the commencement of work, the State of Mississippi required some time to internally reassess its role as a Cooperating Technical Partner under Risk MAP, as the specifics of the Risk MAP program began to take shape. With a much greater emphasis on mitigation and planning elements in the overall Risk MAP vision and goals, MEMA and MDEQ needed to examine and clarify their respective roles and ensure that a firm commitment to pursuing these objectives was put forth by all partners, within the context of their own established goals, visions, and functions. An updated MIP Baseline Budge Form is included to provide a project schedule with more realistic project delivery dates, taking into account the delays previously explained.

Unmet Needs

No known and valid community study requests are being declined under this proposed plan of work, although several streams that are determined to be unverified via the CNMS Phase 3 validation process are unable to be studied due to budgetary constraints. As noted in the project scope description, 50 study streams were determined to be unverified. An updated study is planned for the streams listed in Table 3. To date, the City of Jackson has requested that Hardy Creek Tributary 1 and Town Creek Tributary 2 be studied. The City of Brandon has had issues with an unstudied stream near State Highway 18. Several properties have been acquired due to flooding. The City of Richland requested Squirrel Branch near U.S. Highway 49 be restudied, however, the area in question is within the backwater of the Pearl River. The City of Flowood has had issues with flooding at Laurel Park Apartment complex from Hog Creek. The City of Mendenhall mentioned on-going flooding issues for Sellers Creek, however the study is not found to be unverified.

Project Status

The MIP Baseline details the schedule and available funding for the Middle Pearl-Strong Watershed study. Funding for Discovery within the Middle Pearl-Strong Watershed is being provided through Mapping Activity Statement (MAS) No. FY10.09. Funding for the engineering and mapping study of the Middle Pearl-Strong Watershed is being funded through MAS No. FY10.09. There are no major changes to scope from the original MAS anticipated scope.

V. Discovery Meeting

The Middle Pearl-Strong watershed Discovery meeting was held on June 26 and 27, 2012, at the Mississippi Department of Environmental Quality in Jackson, MS. The meeting was attended in person by representatives from Mississippi Department of Environmental Quality, Mississippi Emergency Management Agency, Federal Emergency Management Agency, local government staff, and CTP's mapping contractor. Additional FEMA staff attended the meeting by remote access. The meetings lasted from 2:00 PM to approximately 4:00 PM. A copy of the sign-in sheet and meeting minutes is included in Appendix G.

Ever since the Easter Flood in April, 1979, various ideas and proposals for comprehensive flood control on the Pearl River in the Jackson metro area have been rendered. Some of these include improvements to the Pearl River levees, a flood detention reservoir upriver from the Ross Barnett reservoir, lakes downriver of the Barnett Reservoir, and various combinations of these. On May 14, 2012, the Rankin-Hinds Pearl River Flood and Drainage Control District reached an agreement with the USACE to move forward with what is unofficially called the One-Lake plan. A privately-funded feasibility study is currently underway and is scheduled for completion in the summer of 2014. Previous versions of this concept had been opposed by certain communities downriver of Jackson that were concerned such a project would exacerbate flooding for them.

The City of Jackson has undertaken a drainage study to assess recurring drainage and flooding locations throughout the City. An example of one such area is Belhaven Creek, where most of the repetitive flood problems are upstream of FEMA's limit of study. The study is expected to produce a plan of prioritization for corrective measures. Charles Williams, City Drainage engineer, was named as the contact person for this study. Jackson is also planning channel improvement projects for sections of Eubanks Creek and Town Creek Tributary 3. These projects are primarily aimed at stabilization of banks that are experiencing severe erosion, but they will likely result in improved conveyance of flood waters as well. A Hazard Mitigation Grant Project is in the application stage for channel improvements along a section of Lynch Creek between St. Charles Avenue and Robinson Road.

The Mississippi Department of Transportation has several road construction projects in the pipeline that are likely to involve bridge or major culvert replacements. Typically, these projects are completed in close coordination with FEMA whenever the stream crossing involves a Special Flood Hazard Area. Most of the projects listed are widening projects with additional travel lanes added. The location of such future projects are displayed on Appendix D—Flood Risk Map.

As the vast majority of the greater Jackson metropolitan area is contained within the Middle Pearl—Strong watershed, future land development is expected to occur. Most of the larger commercial and industrial development is expected to occur along or in close proximity to established transportation corridors. These include Interstates 20, 55 and 220, U.S. Highways 80, 49, 51 and 25, and active railroads currently owned by Canadian National/Illinois Central and Kansas City Southern. Some of the larger planned areas for industrial use, which appear to coincide with floodplain areas, are Hawkins Field Industrial Park, Twin Lakes Business Park, East Metropolitan Center, North Richland Industrial and Commercial Park, and Indian Creek

Industrial Park. Commercial development appears to be flourishing along Lakeland Drive in Flowood and Riverwind Drive in Pearl.

It was noted that several of the communities within the watershed did not receive an initial outreach letter to invite them to the meeting. The communities that did not have an initial outreach letter sent to them are: Braxton, D'Lo, Florence, Flowood, Mendenhall, Pelahatchie, Pearl, Polkville, and Richland. These communities were sent a letter explaining the oversight and included a map of the communities within the watershed with a worksheet to fill out and return to the Contractor. Offers were also extended to meet with the uninvited communities face-to-face. Three of these communities returned the completed worksheets and/or maps. Attempt to engage the other communities by phone in September, 2012 were not successful.

Funding for Discovery within the Middle Pearl-Strong Watershed is being provided through Mapping Activity Statement (MAS) No FY10.09. Funding for the engineering and mapping study of the Middle Pearl-Strong Watershed is being funded through MAS No FY10.09. There are no major changes to scope from the original MAS anticipated scope.

VI. List of Appendices

Appendix A: Discovery Flood Hazard Map

Appendix B: Discovery Flood Risk Map

Appendix C: Map of Effective Studied Streams (with Panel Scheme)

Appendix D: Map of Proposed Studied Streams (with Panel Scheme)

Appendix E: Community Contact List

Appendix F: Community Correspondence

Appendix G: Discovery Meeting Minutes and Sign-In Sheet

Appendix H: Community Assistance Visit Reports

Appendix I: Quality Assurance/Quality Control Plan

Appendix J: Project Charters

Appendix K: Letters of Map Change List