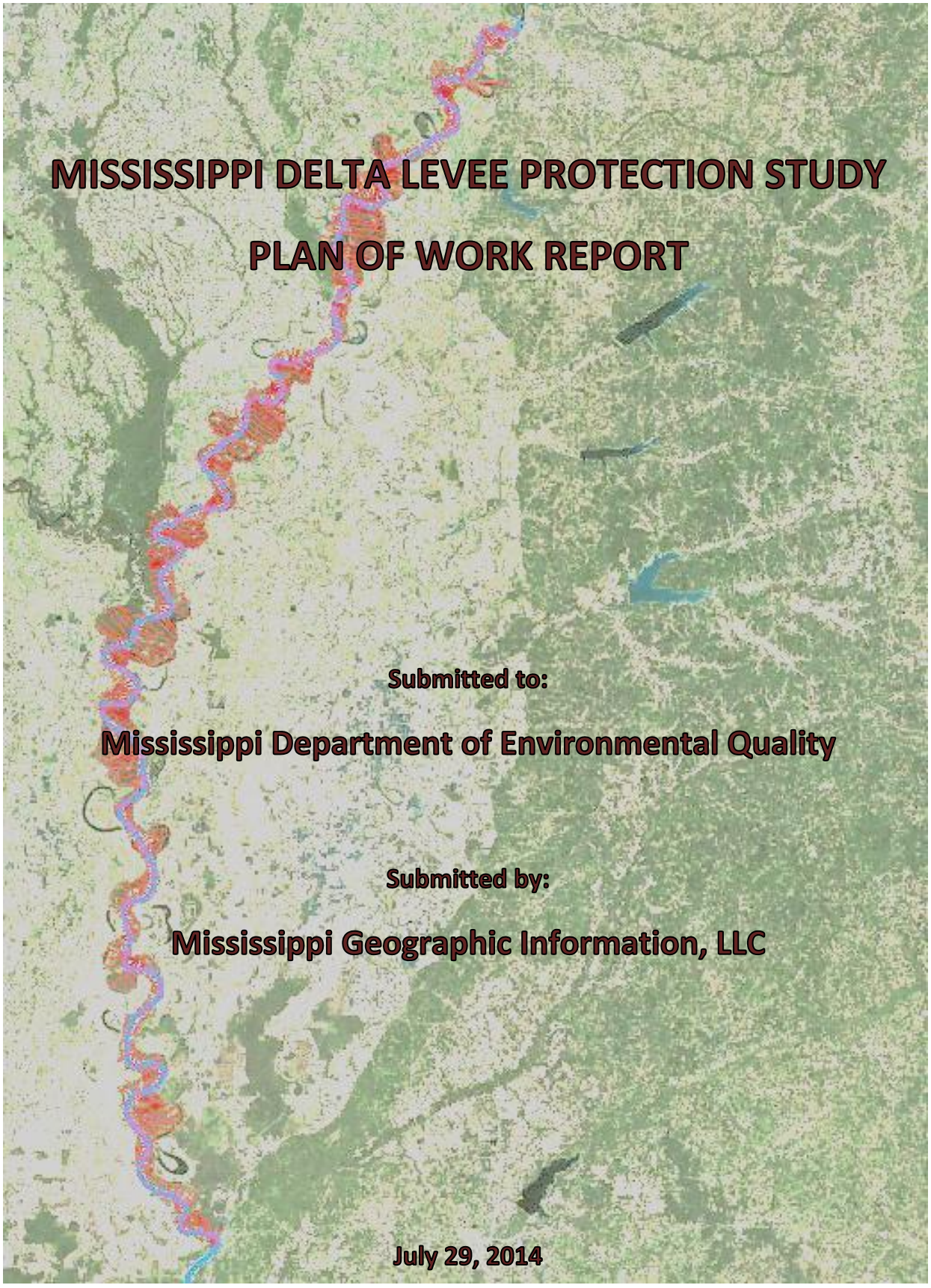


MISSISSIPPI DELTA LEVEE PROTECTION STUDY

PLAN OF WORK REPORT

Submitted to:

Mississippi Department of Environmental Quality

Submitted by:

Mississippi Geographic Information, LLC

July 29, 2014

MISSISSIPPI RIVER DELTA LEVEE PROTECTION STUDY

PLAN OF WORK REPORT

Contents

1. Introduction

This purpose of this report is to present a plan of work for the proposed Mississippi Delta Levee Protection Study, as prescribed under Work Order No. 113 between Mississippi Department of Environmental Quality (MDEQ) and Mississippi Geographic Information, LLC (MGI). This plan of work is the deliverable agreed to under this work order, which was conceived as a Planning Phase for the overall study project. By initiating this Planning Phase, MGI was able to evaluate different approaches to conducting the study, investigate existing data that may be available and could contribute to the study, and ensure that the projects' objectives are to be met within budgetary and scheduling constraints. The plan of work was developed through consultation and coordination with MDEQ, FEMA Region IV, and U.S. Army Corps of Engineers. The engineering and mapping phase(s) that carry out this plan of work will be initiated under separate work order(s).

1.1 Background

The Mississippi Delta is a distinct physiographic region of the State that is part of the Mississippi River's alluvial floodplain, created by regular flooding over thousands of years. The land is characterized by its extremely low relief and contains some of the most productive agricultural land in the U.S. The basic geographic extents of the Delta are depicted in **Figure 1**.

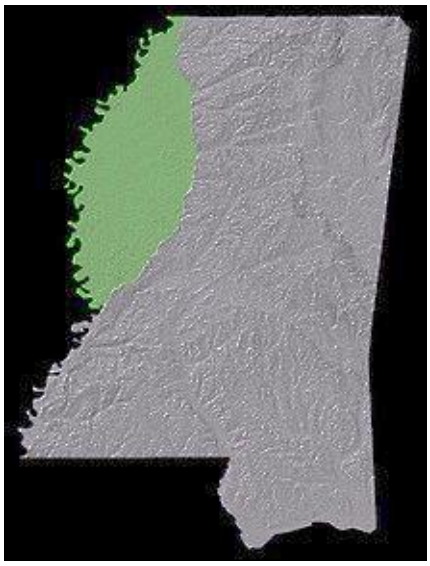


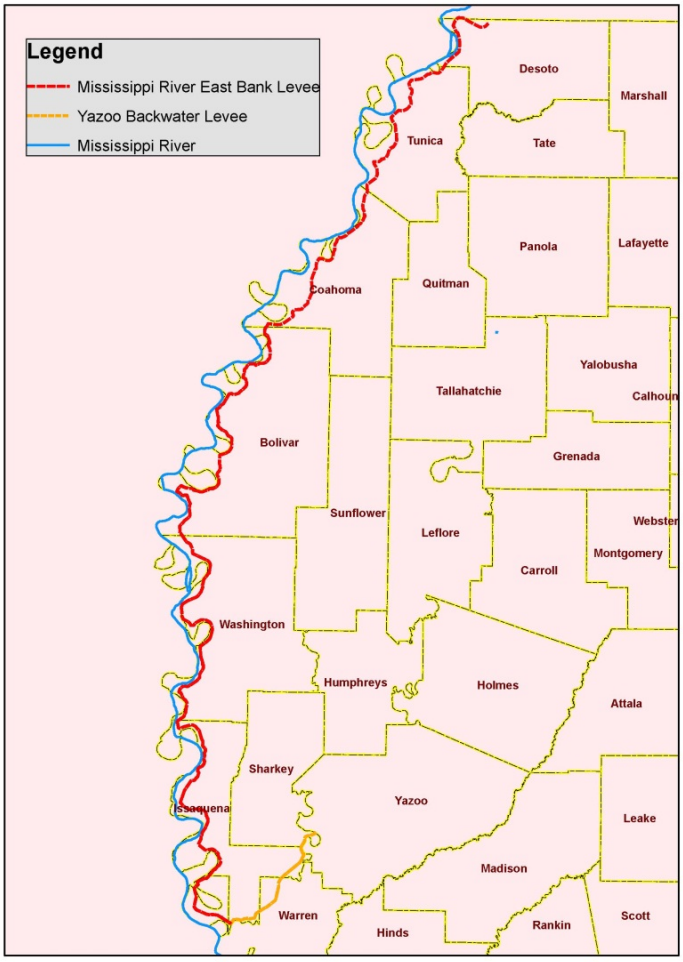
Figure 1 – Mississippi Delta

Following the Great Flood of 1927 and the subsequent Flood Control Act of 1928, the Mississippi River and Tributaries (MR&T) Project was created to, among other objectives,

control floods of the Mississippi River from Head of Passes to Cape Girardeau, Missouri. The MR&T Project included a plan for levees, channel improvements, reservoirs, and floodways.

Under the MR&T Project, the existing levees along the Mississippi River were gradually widened and heightened. Today the Mississippi River levees average about 40 feet in height and about 700 feet in width when including the riverside and landside berms. The levee is designed to protect landward areas from a flood event on the Mississippi River far in excess of the 1 percent annual chance flood. The system was put to a stern test during the Flood of 2011. Several river stage records were broken on the Lower Mississippi River during this flood, but the system performed as designed while using roughly 85 percent of its overall capacity.

Figure 2--Mississippi River East Bank Levee



The east bank Mississippi Levee protecting the Delta Region begins in DeSoto County at Hwy 61, a few miles south of the Mississippi-Tennessee state line. From this point, the levee runs south, generally following the course of the Mississippi River, through the counties of Tunica, Coahoma, Bolivar, Washington, Issaquena, and a portion of Warren where it ties into the Yazoo Backwater Levee. The total length of this levee is approximately 270 miles. A map depicting the course of the east bank Mississippi River levee through the Delta Region is provided in **Figure 2**.

Clearly, the flood risk reduction benefits afforded by the east bank Mississippi River levee extend over a large

geographic area. The sheer length of the levee indicates that these benefits are felt over at least seven counties—those bordering the Mississippi River. What's not as clear is how far to the east, across the remarkably flat expanse of the Delta Region, does this risk reduction possibly extend.

1.2 FEMA Mapping

Prior to Map Modernization, there was inconsistency in how the non-Special Flood Hazard Areas were depicted for the counties bordering the Mississippi River. DeSoto, Tunica, and Bolivar counties depict all areas outside the Special Flood Hazard Areas as areas of moderate flood risk, or shaded Zone X, with standard levee note applied. Coahoma and Washington depict these areas as Zone C, or low flood risk. Issaquena still had a Flood Hazard Boundary Map which did not label the non-Special Flood Hazard Areas, but they appeared similar to Zone C low flood risk.

During Map Modernization, it was decided that all counties bordering the Mississippi River should depict non-Special Flood Hazard Areas as shaded Zone X, to reflect areas protected from the 1-percent annual chance flood by levee. As a result of this simplification, the boundary between shaded and un-shaded Zone X, as the default non-Special Flood Hazard Area, generally follows the county boundaries dividing counties bordering the Mississippi River from those immediately to the east. The exceptions are Sharkey County, which was deemed to be close enough to the Mississippi River to warrant shaded Zone X for the default, and Humphreys County, which may be subject to both Mississippi and Yazoo River levee protection.

So while some consistency was gained during Map Modernization, the division between levee-protected areas and other non-Special Flood Hazard Areas is clearly not based on an actual technical analysis. The true boundary should fall along topographic high ground based on some level of hydraulic analysis that estimates the inundation extents resulting from a 1-percent annual chance flood on the Mississippi River without levee protection. A composite depiction of the existing shaded X areas in the Mississippi Delta Region are displayed in gray in **Figure 3—Flood Hazard Zones in the Delta Region**. Note that as of this date, the flood hazard data for Bolivar, Quitman, Tallahatchie, and Carroll counties shown in Figure 3 is preliminary.

1.3 Study Objective

The objective of this study is to generate a technically-based, contiguous Zone X (shaded) boundary along the geographic length of the Mississippi Delta Region to more accurately depict

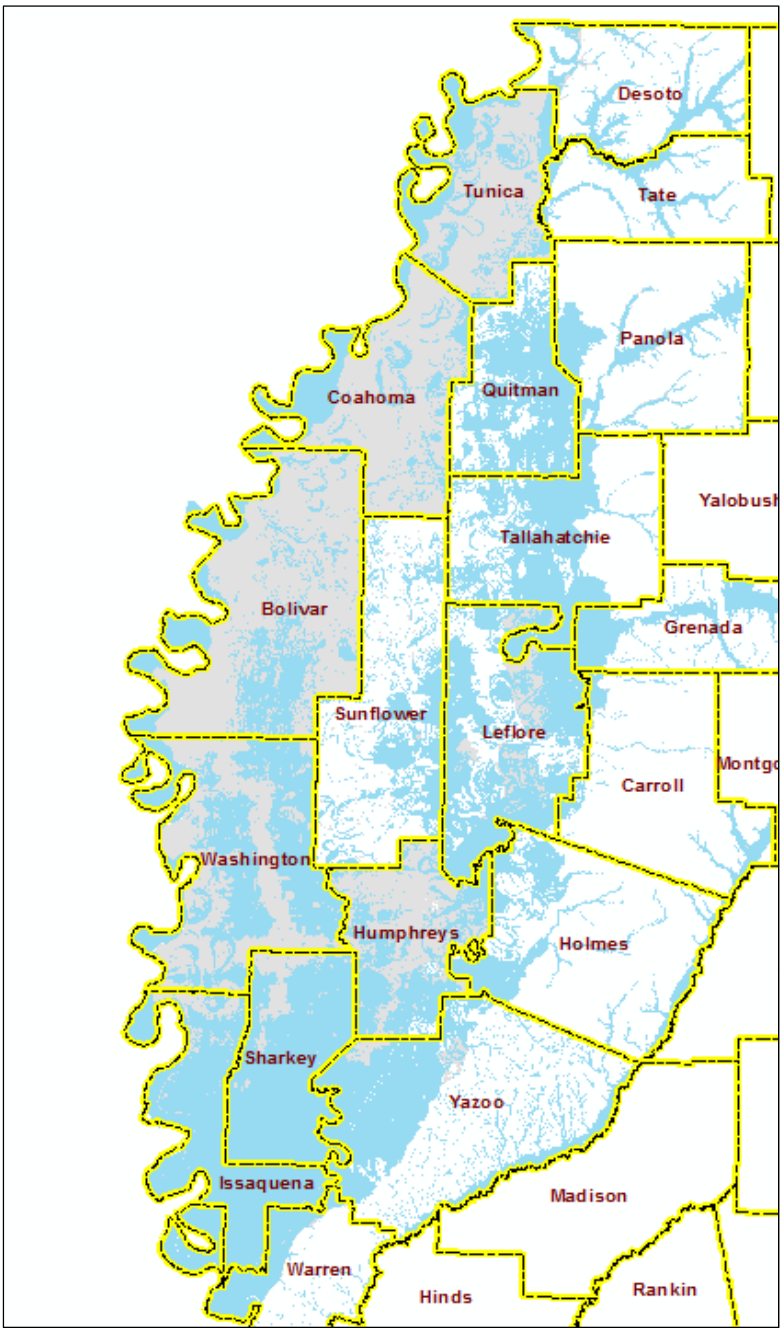


FIGURE 3—Flood Hazard Zones in the Delta Region

the areas protected by levee from the 1-percent annual chance flood on the Mississippi River. The deliverable is a S_FLD_HAZ_LN feature class that meets current FEMA DFIRM Database specifications and is topologically sound. Because the project area covers multiple counties (a minimum of seven and perhaps as many as eleven), it is not fiscally feasible under the current project to revise and re-issue DFIRM panels within the entire project footprint as part of this project. And since the project will not affect flood insurance rates, it is probably not sensible to do so anyway. Rather, the finished boundary will be available for use in future DFIRM revisions

that occur within the project area. In cases where the boundary is superseded by interior Special Flood Hazard Areas, the Zone X (shaded) line endpoint will be snapped to a Special Flood Hazard Area vertex so that the new Zone X (shaded) polygon can be readily generated. The raw (unedited) boundary line will also be delivered so that any future contractions to the Special Flood Hazard Area can be more easily accommodated without leaving gaps between the existing Zone X (shaded) and proposed Special Flood Hazard Area.

2. Levee Certification/Accreditation

Over the course of Map Modernization, FEMA's guidance with respect to levee certification and accreditation evolved through a series of procedural memoranda (PMs). Probably the most significant of these was PM 43—Guidelines for Identifying Provisionally Accredited Levees (PALs). This guidance provided a mechanism by which mapping projects could move forward to preliminary and effective DFIRM issuance before full compliance with the levee accreditation requirements, as defined in 44 CFR 65.10 had been documented.

Many county mapping projects involving levees in the Delta Region of Mississippi were aided by PM 43. Most of the levees in the Delta were deemed to be eligible for provisional accreditation, and PAL agreements were drafted and signed by levee owners in 2010. The Mississippi River east bank levee actually consists of two segments with separate ownership and management responsibility. The first segment runs from DeSoto County to the Coahoma/Bolivar county boundary and is owned by the Yazoo-Mississippi Delta Levee District, based in Clarksdale, Mississippi. This section was provisionally accredited on March 15, 2010. The second segment runs from the Coahoma/Bolivar county boundary to Warren County and it is owned by the Board of Mississippi Levee Commissioners, based in Greenville, Mississippi. This section was provisionally accredited on February 24, 2010. PAL agreements provide the levee owner and/or community 24 months to compile the data and documentation needed to demonstrate the levee's compliance with 44 CFR 65.10 specifications.

The U.S. Army Corps of Engineers—Vicksburg District agreed to perform these NFIP levee evaluations on behalf of the local levee districts and communities for structures within the MR&T system, including the mainline Mississippi River levees. The first levee segment, from DeSoto County to the Coahoma/Bolivar county boundary was certified by Vicksburg District on February 15, 2011. The second segment has not been certified as of this date. According to Craig McRaney, Levee Safety Program Manager at Vicksburg District, the levee is being repaired in the Buck Chute area to correct seepage problems. It is estimated that this segment of levee should be certified in July of 2014.

3. Mississippi River Flood of 2011

A major flood event occurred on the Lower Mississippi River during the months of April, May and June of 2011. This flood broke numerous stage records and produced some of the highest flows ever recorded along the River from Cairo, Illinois to the Morganza Floodway in Louisiana. This historic flood was caused by above average snowfall over the Upper Mississippi Valley and heavy rain events from February to early May in the Ohio and Middle Mississippi River Valleys. A record crest of 57.1 feet occurred at Vicksburg on May 19, 2011.

Three significant flood fight operations along the mainline Mississippi River levee were conducted during the course of the 2011 flood. These included a sand boil near Rosedale in Bolivar County, a sand boil and levee slide in Issaquena County, and a series of sand boils north of Buck Chute, near Eagle Lake. The locations of these areas are highlighted in **Figure 4— Key Flood Fight Locations in the Vicksburg District**. These areas were stabilized by emergency construction within several days of discovery. Following the flood's subsidence, more permanent repairs to these areas have been completed or, in the case of Buck Chute, are being completed.

The MR & T Post-Flood report included several preliminary recommendations. One such recommendation was to consider an updated hydraulic flow line study for the System. Since the report's release, the USACE has undertaken a System Performance Study which includes updated hydraulic modeling, using data and information collected during the 2011 flood.

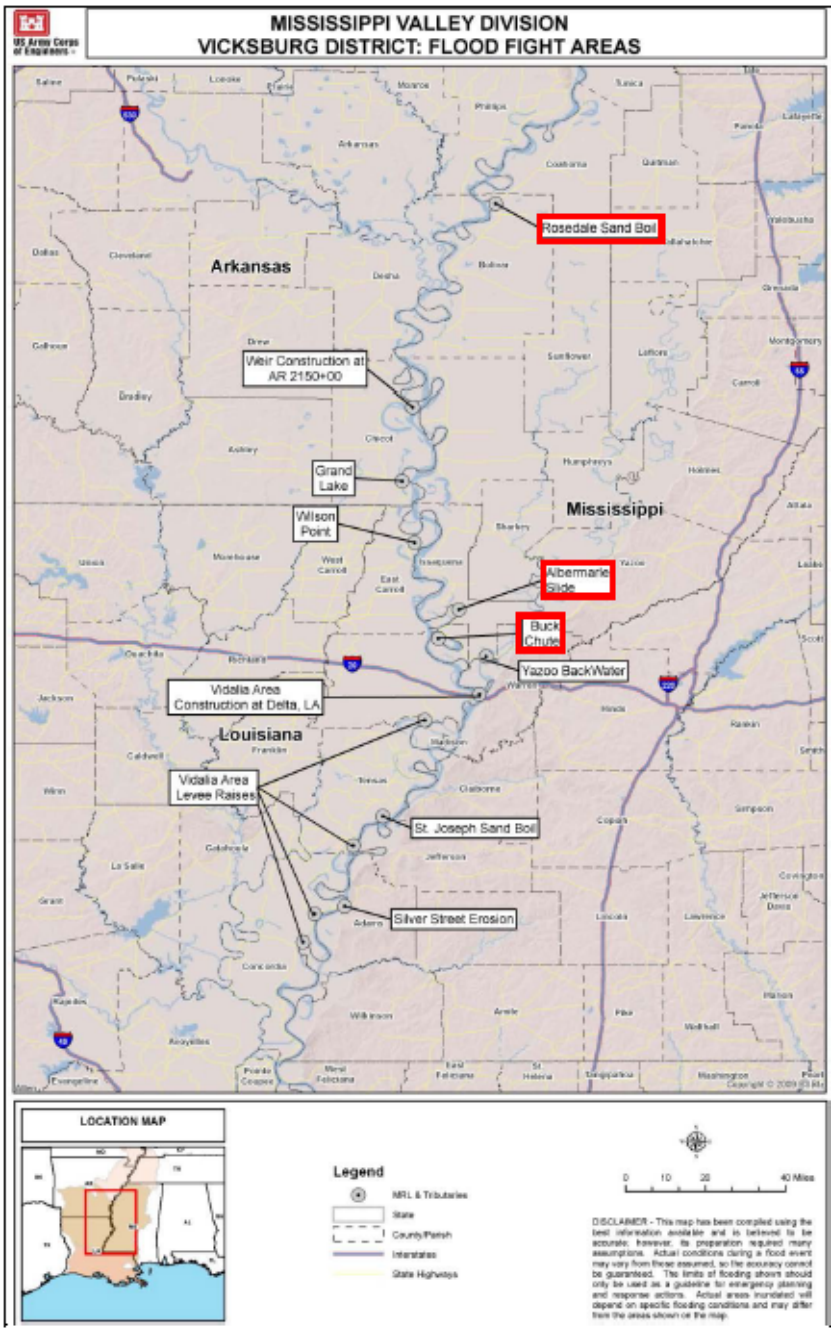


Figure 4 -- Key Flood Fight Locations in the Vicksburg District (from MR&T Post-Flood Report).

4. Evaluation of Study Approaches

MGI hosted a conference call with FEMA Region IV and the Regional Study Coordinator (Michael Baker) to discuss possible study approaches for the project. This conference call was

held on May 10, 2013. MGI introduced four conceptual approaches for generating the revised shaded-X (levee-protected) zone. They are listed below in order of highest to lowest relative cost:

1. Establish the limits of the protected area by completing a series of breach analyses along the levee, using 2-dimensional, unsteady flow modeling. This approach is similar to the structurally deficient approach used in the new Levee Analysis and Mapping Procedures (LAMP) guidance.
2. Establish the limits of the protected area by completing a "without levee" analysis, using 1-dimensional, steady flow modeling. This approach is similar to the natural valley approach used in the new LAMP guidance.
3. Establish the limits of protection by projecting the Mississippi River 1-percent annual chance elevation profile landward until it intersects "natural" high ground, mapping the boundary along this profile.
4. Establish the limits of protection by setting the boundary along an apparent topographic "barrier", such as Highway 61, that roughly parallels the Mississippi River levee to the east.

Option 1 would be a very costly approach due to the length of the levee. A very high number of breach locations would be needed along the 270 mile length in order to produce a uniform boundary that is not spatially biased, depending on proximity to the breach location. This approach also requires a flood hydrograph input for the Mississippi River, which would be difficult to estimate for a river system of such complexity. Noting that the final results will not affect the Special Flood Hazard Area, the cost and complexity of Option 1 can't be justified for this study.

Option 2 essentially allows for conveyance of flood flows across the protected area as if the levee does not exist. This approach is not as technically sound as Option 1, since in actuality the levee would remain in place in all areas that did not experience a breach. However the approach is more manageable and less prone to spatial bias since the entire levee is rendered ineffective, instead of using discrete breach points.

Option 3 would be even more cost effective than Option 2 since there would be no need to perform any hydraulic modeling. Spatial bias would also be minimized. However, this approach would significantly overestimate the protected area since the 1-percent annual chance elevation profile would be lowered significantly by allowing conveyance landward of the levee. Option 3 would nullify this lowering effect.

Option 4 was considered to be too simplistic and too subjective. While a feature like Highway 61 may act as an effective hydraulic barrier in some locations, it is not very reasonable to

expect that if would do so in a consistent manner along its entire length. This option would also ignore any topographically higher features between the barrier and the levee that may be substantially raised above the expected flood elevation.

Ultimately, the participants chose to pursue Option 2. This decision was buoyed by the knowledge that the U.S. Army Corps of Engineers had available some preliminary HEC-RAS modeling, as part of the System Performance Study noted in Section 3.0, that could likely serve as a basis for constructing the "without levee" simulation.

5. Existing Modeling Data

Prior to the May 10, 2013 conference call, MGI made inquiry to the USACE--Vicksburg District Hydraulics Section to ascertain whether or not any existing modeling was available that may be of benefit to this project. The existence and availability of hydraulic modeling, the type(s) of models developed, their completeness and applicability to the project objective would be an especially important factor in deciding which study approach to follow.

USACE—Vicksburg District informed MGI that HEC-RAS model geometry data was available for the Mississippi River for the area between the east and west bank levees. The overall model was in the process of being updated in response to the historic 2011 flood, as part of a System Performance Study. The Manning's roughness coefficients and flow values would be omitted from the HEC-RAS files, since these data were the specific input being refined as part of the System Performance Study. The Vicksburg District's model extends from the St. Francisville, LA river gage at River Mile 256.8 near the Highway 10 bridge upriver to Lake Whittington, just below the mouth of the Arkansas River, in Bolivar County at River Mile 577.

The Vicksburg District provided MGI with a contact at USACE—Memphis District for obtaining HEC-RAS data for the remaining reach of Mississippi River up through DeSoto County. Memphis District staff provided a HEC-RAS geometry file for the Mississippi River running from River Mile 539.1, which is just above the U.S. Highway 82 bridge and the Greenville, MS river gage, upstream to River Mile 749 at the Memphis river gage.

The two models overlapped a section of the Mississippi River about 38 miles from Greenville to the mouth of the Arkansas River. The two reaches were merged and truncated upstream and downstream in order to produce a single model from Memphis to Vicksburg. The model geometry schematic is shown in Figure 5—Layout of Mississippi River HEC-RAS model river centerline and cross-sections.

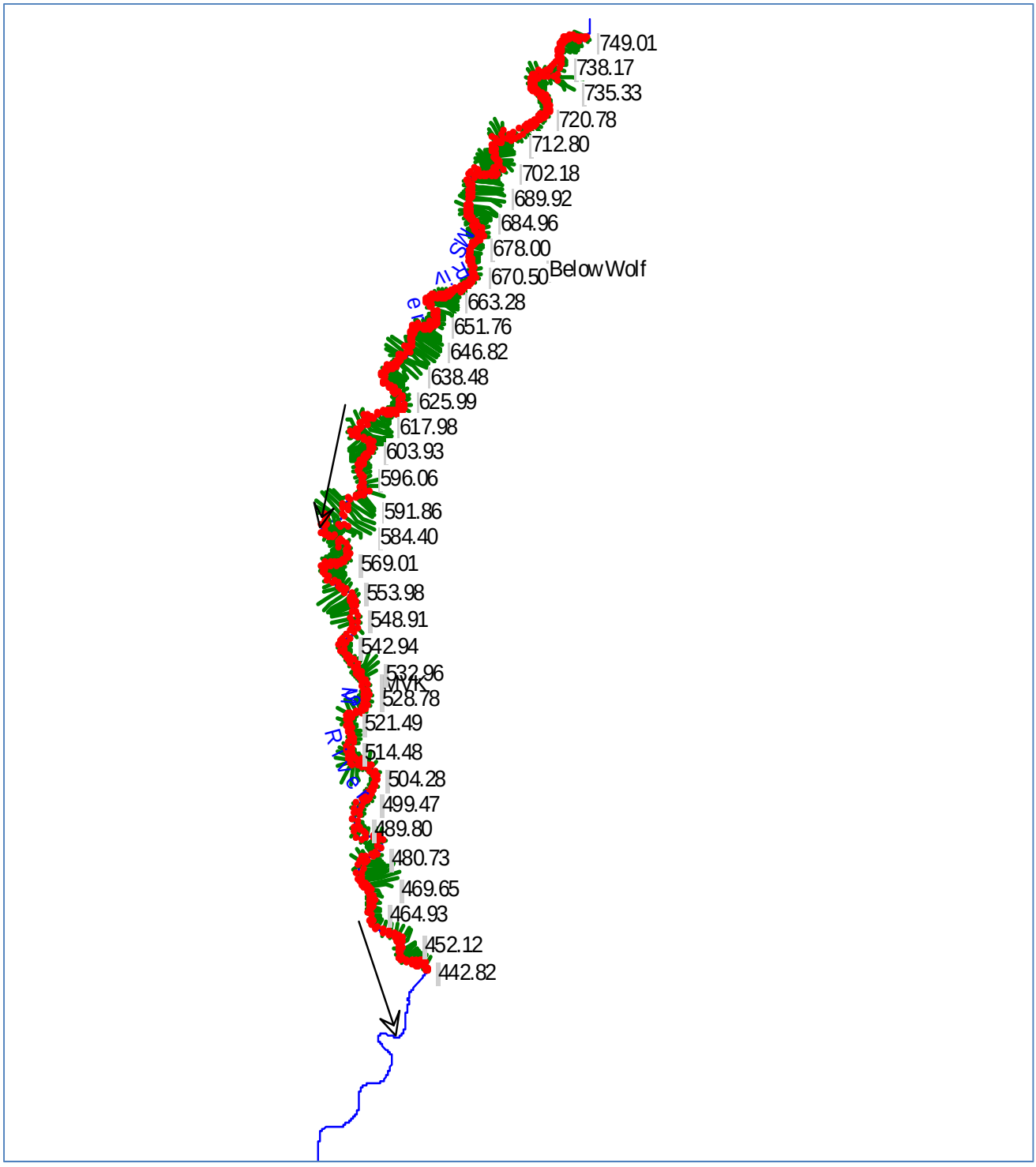


Figure 5—Layout of Mississippi River HEC-RAS model river centerline and cross-sections, from Vicksburg to Memphis. Stationing is in miles upriver from Head of Passes.

6. River Gage Data

Because the HEC-RAS files provided by the USACE did not include any flow data or Manning's roughness coefficients for the Mississippi River, MGI would need to use gage data along the river to develop these components. Ideally, these gages would need to possess records of both stage and flow. Using statistical procedures as described in Guidelines for Determining Flood Flow Frequency--Bulletin 17B of the Hydrology Subcommittee, Interagency Advisory Committee on Water Data, frequency curves can be generated to estimate 1 percent annual chance flow rates, and if included, 1 percent annual chance peak stages at the gage locations. The flow analyses could then be used to construct an appropriate HEC-RAS flow file. Using initial estimates of channel and overbank Manning's n values, the HEC-RAS model could then be calibrated to reproduce the peak stage results at the gage locations within a reasonable tolerance.

A total of seven river gages between Vicksburg and Memphis were identified using the website RiverGages.com. These gages are listed in Table 1 – Mississippi River Gages between Memphis and Vicksburg.

Table 1 – Mississippi River Gages between Memphis and Vicksburg

Gage	Period of Record	Type
Mississippi River at Vicksburg	1901 to present	Stage and Flow
Mississippi River at Greenville	1902 to present	Stage
Mississippi River at Arkansas City	1911 to present	Stage and Flow
Mississippi River at Helena	1871 to present	Stage and Flow
Mississippi River at Tunica River Park	1911 to present	Stage
Mississippi River at Memphis	1885 to present	Stage and Flow

The four gages in Table 1 of type 'Stage and Flow' are expected to be used for purposes of calibrating the HEC-RAS model for simulating the 1 percent annual chance flood event with both east and west bank levee systems in place. The statistical analyses of flow and stage data at these four gages have been completed using HEC-SSP. These results are provided in **Appendix A—Frequency Analyses of Mississippi River Gage Data**.

7. Topographic Data

This project will be able to capitalize on a recent topographic data development project that covers the entire Delta region. The USACE, through their vendor Photo Science, Inc., collected and processed Light Detection and Ranging (LiDAR) points and breaklines for the entire Delta Region and for some additional headwaters areas in Phase 2. The project coverage is illustrated in **Figure 6—LiDAR project coverage**. The LiDAR points were collected on average of 1.0 meter spacing or better with a vertical accuracy of 15.0 centimeters of better to support 2-ft. contour generation when combined with the breaklines. The project area was flown in February, 2009 during leaf-off and snow free conditions.

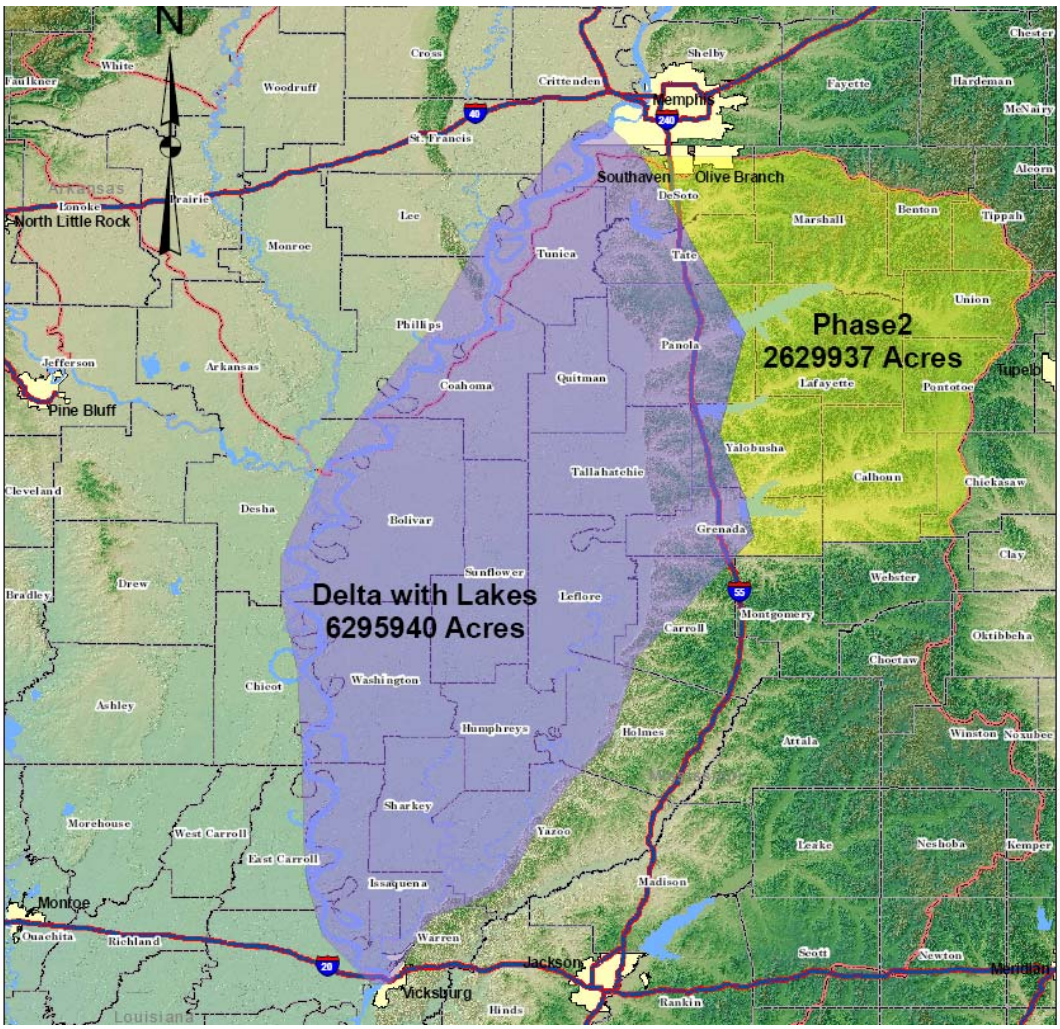


Figure 6—2009 LiDAR project coverage.

8. 'Natural Valley' Model Development

Upon completing the calibration of the HEC-RAS model, selected cross-sections can then be modified to extend the station/elevation data eastward of the existing top of levee to allow conveyance in the levee-protected area. Each cross-section that is extended will need to terminate a location of topographic high ground that is above the anticipated flood profile elevations. This may require a process of trial and error to achieve a reasonable model and may include the introduction of lateral weirs to deduct flow into storage areas. The Manning's roughness coefficients for the newly added conveyance areas will be estimated from aerial photography. A sample cross-section plot from the existing model is provided in **Figure 6—Plot of typical Mississippi River HEC-RAS cross-section**. The cross-section's station-elevation points representing ground elevations would be appended to in the left direction so that flood flow may be permitted to convey on both sides of the East Bank Levee. The 'Natural Valley' model treats the area landward of the levee as hydraulically connected to the area riverward of the levee. No alteration to the West Bank Levee will be necessary, as that system will be expected to remain fully functional under this scenario. Station-elevation points on the appended cross-sections may require filtering to avoid exceeding the 500 station/elevation point limit per cross-section set by the HEC-RAS program.

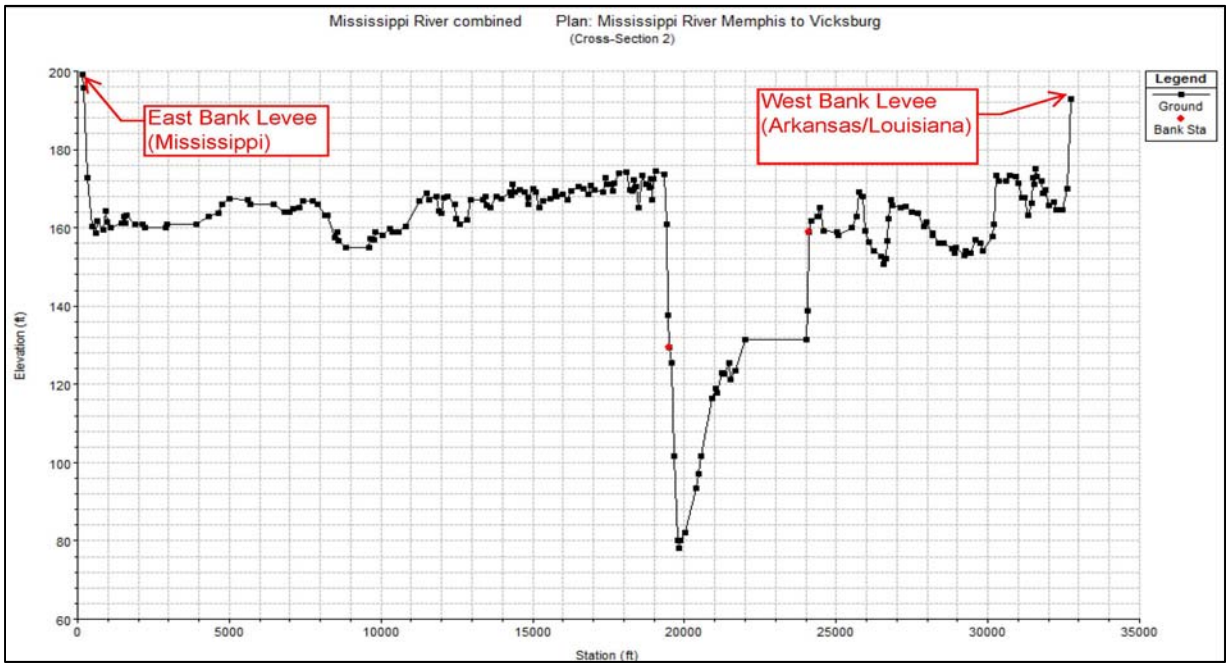


Figure 6—Plot of Mississippi River HEC-RAS typical cross-section

9. Outreach

During the May 10, 2013 conference call, FEMA and the Regional Study Coordinator remarked that although this is a unique mapping project that does not result in changes to the FEMA Special Flood Hazard Area, some level of public outreach should be conducted to inform property owners and communities in the region of this work. In order to fulfill this request, MGI has drafted a letter for distribution to communities and other likely interested parties. This letter summarizes the project work and would include an email link to this Plan of Work Report for those that wish to obtain additional information. An example of this letter is included in **Appendix B—Sample Outreach Letter to Stakeholders**. The text in the letter includes a clear explanation that the mapping data that results from the study will not result in any revisions to the FEMA designated Special Flood Hazard Area or Regulatory Floodway. Therefore, the NFIP flood insurance purchase requirement or premium rate for properties within the project footprint will not be subject to change as a result of this study.

10. Project Deliverables

At the conclusion of the project, MGI will finalize and deliver the following items:

1. HEC-SSP statistical analysis input and output files for selected Mississippi River gages
2. HEC-RAS input and output files for the calibrated model of the Mississippi River base flood, from Vicksburg to Memphis, with East Bank levee in place
3. HEC-RAS input and output files for the calibrated model of the Mississippi River base flood, from Vicksburg to Memphis, under the 'natural valley' (East Bank levee not protecting) condition
4. GIS polylines representing Mississippi River model cross-sections that have been extended landward (east) across the levee protected area
5. GIS polylines representing the raw (unedited) Zone X boundary, based on the 'natural valley' model's base flood profile elevations covering the levee-protected area.
6. GIS polylines representing the edited, topologically sound Zone X boundary covering the levee-protected area.
7. Text description of the study methodology, suitable for use in Flood Insurance Study report updates.

The edited Zone X boundary will be available for incorporating into republished Flood Insurance Rate Map panels within the study footprint, that occur in conjunction with future Special Flood Hazard Area or Floodway revisions. For example, three Risk MAP projects that are currently underway in the Delta region are very likely to be able to utilize the shaded Zone X boundary data proposed under this Plan of Work. These three are the Big Sunflower, Tallahatchie, and

Coldwater HUC-8 Basin projects, which are in various stages of Discovery and scope development. All reasonable efforts to make these mapping results available to those Basin projects will be put forth. Mapping areas from this project that overlap with proposed FIRM panel updates in the three HUC-8 Basin projects will receive priority, especially with regard to zone boundary editing and topology, so that there is a greater likelihood that both projects' mapping results can be reflected on the updated FIRM.

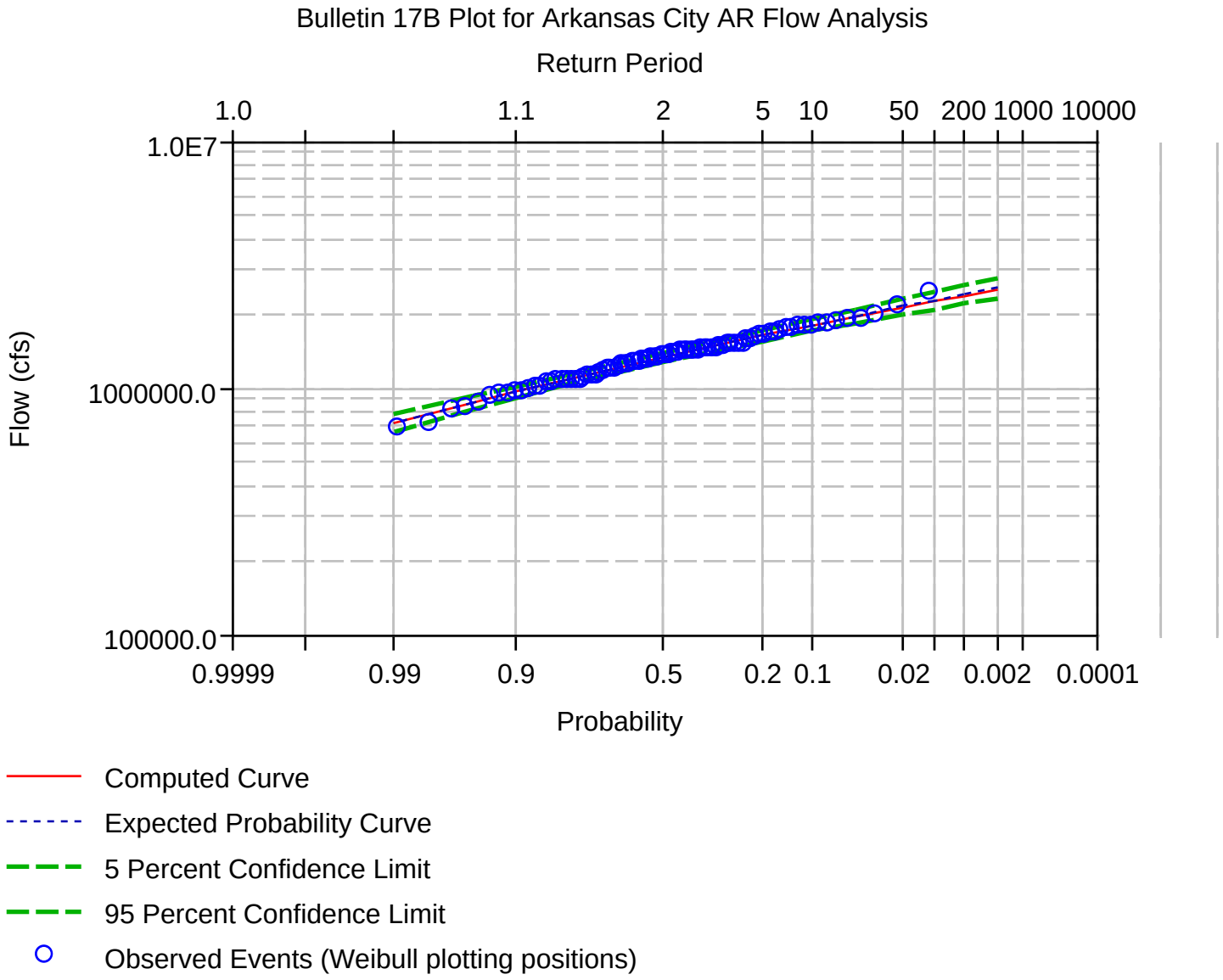
Engineering and Mapping activities completed in conjunction with this project will be expected to meet FEMA's current guidelines and specifications for flood hazard mapping products, as applicable to non-Special Flood Hazard Area zone delineations. The engineering and mapping contractor will submit draft deliverables to the designated QA/QC review partner as necessary to ensure that final products meet or exceed these guidelines and specifications.

11. Project Budget and Schedule

Grant No. EMA-2011-CA-5146, as described in amended Mapping Activity Statement No. FY11.11, allocates $400,000 for completion of the Delta Region Levee Protection (Shaded X refinement) study. The State of Mississippi plans to divert $75,000 of this sum to help supplement four (4) under-budgeted Discovery projects. Deducting the amount already spent for the project planning phase of this project leaves a total of $287,000 for engineering and mapping. Deliverables 1 through 3, as listed on page 14, would be provided by the State within 4 months of notice-to-proceed. Deliverables 4 through 7 would be provided within 10 months of notice-to-proceed. A Mapping Information Platform project baseline form, providing a more detailed breakdown of task cost and scheduling, will be completed and submitted within 2 weeks of FEMA's concurrence with this Plan of Work report and State of Mississippi's selection of a mapping contractor.

APPENDIX A

FREQUENCY ANALYSES OF MISSISSIPPI RIVER GAGE DATA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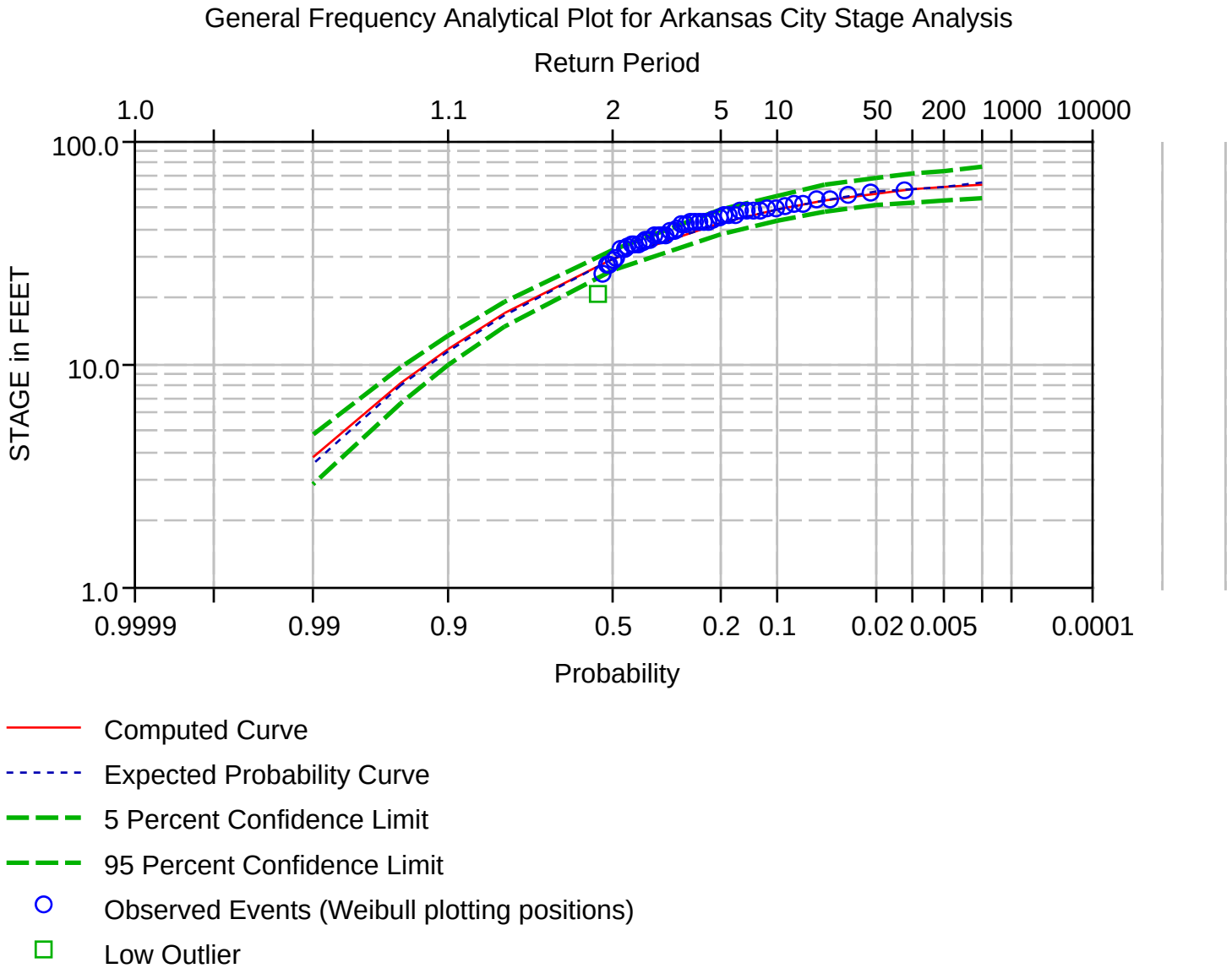
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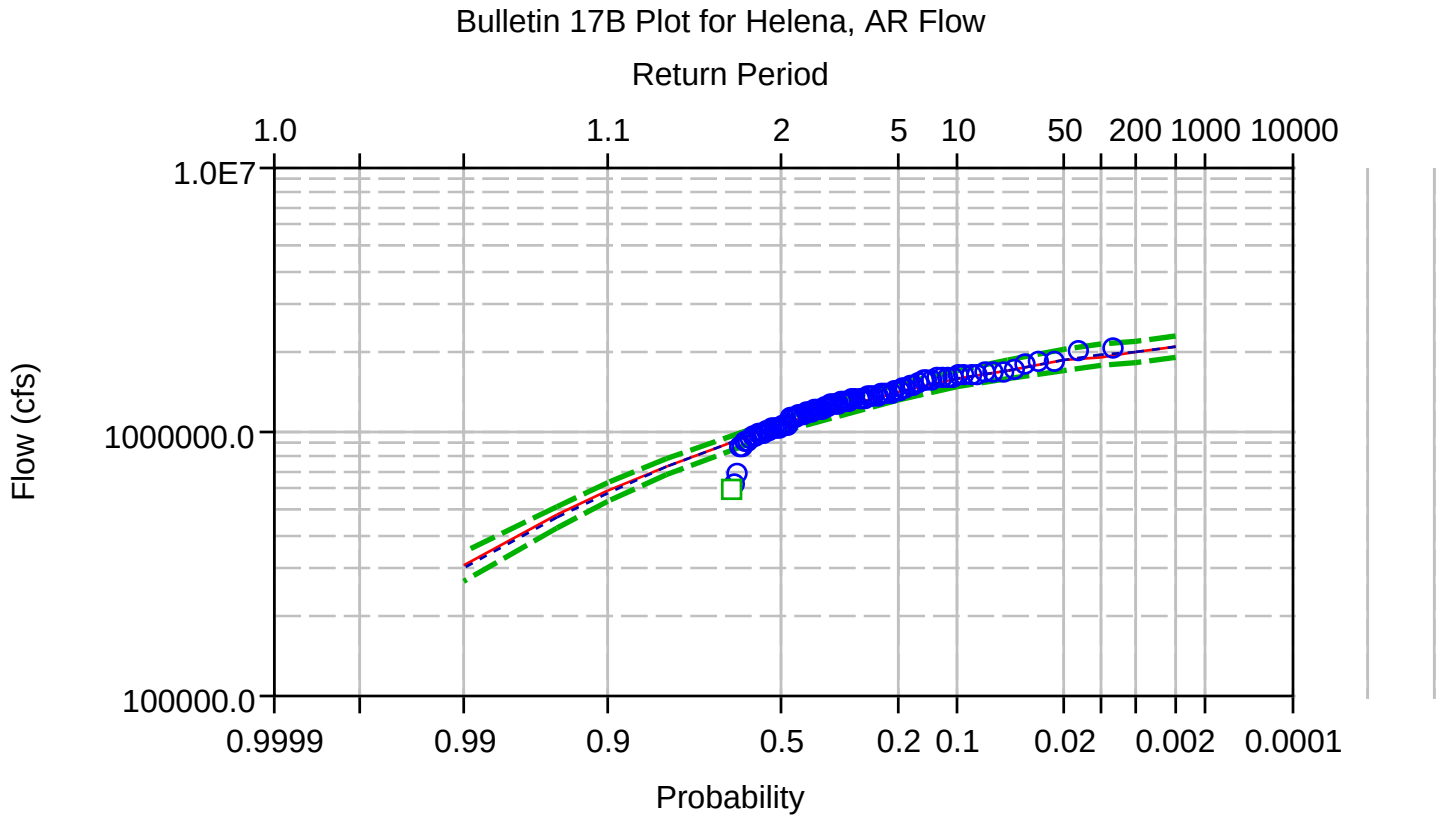
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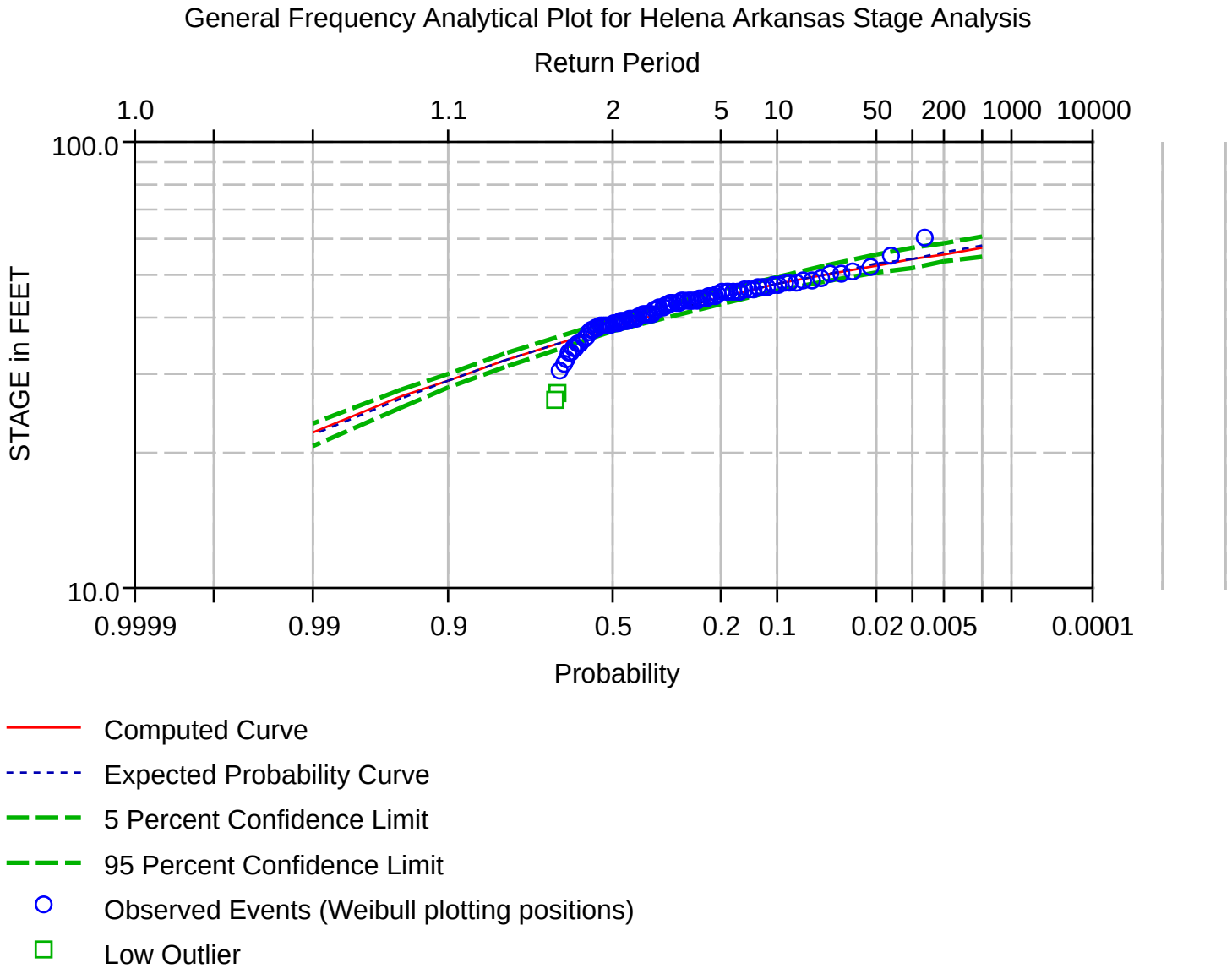
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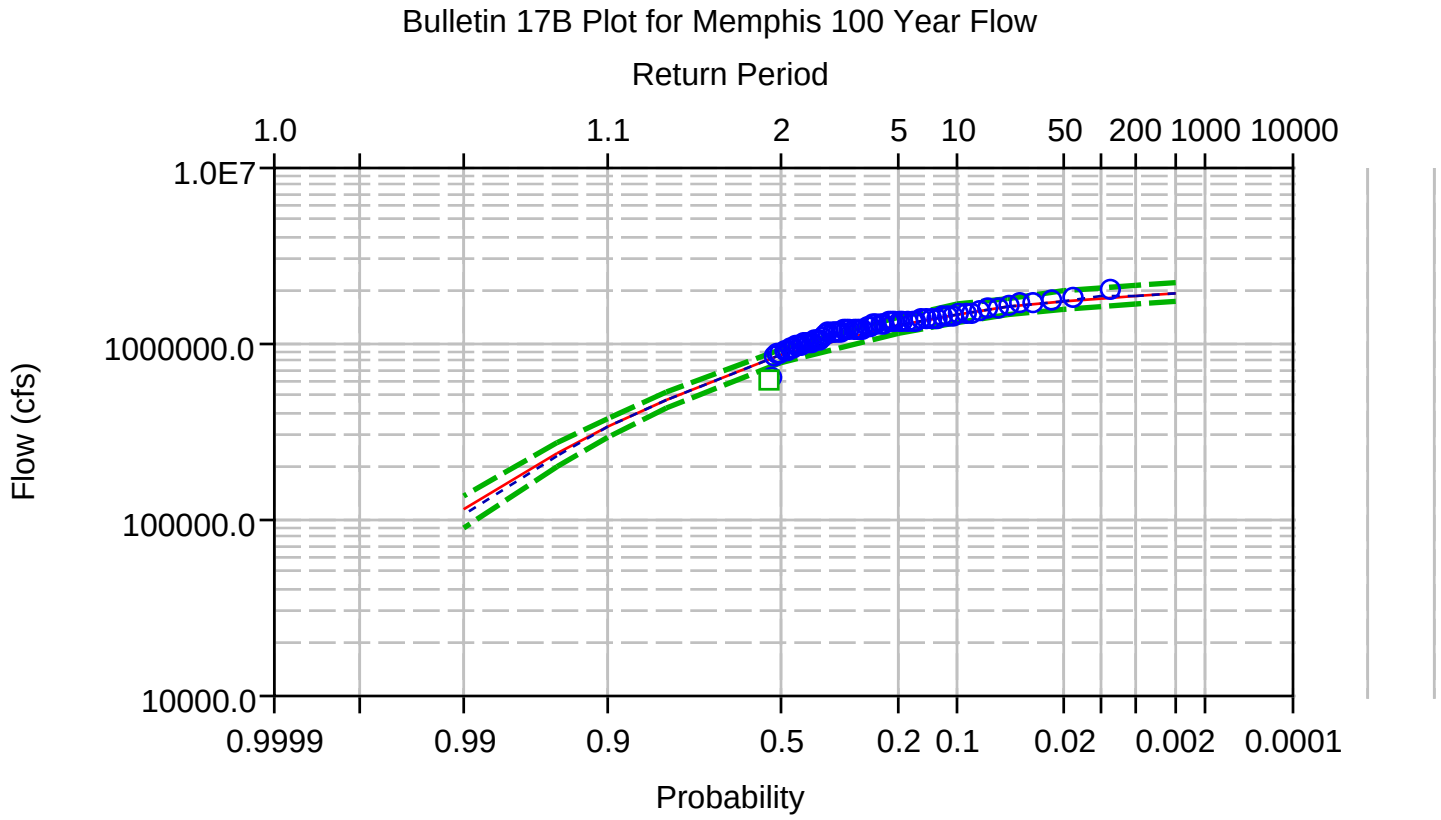
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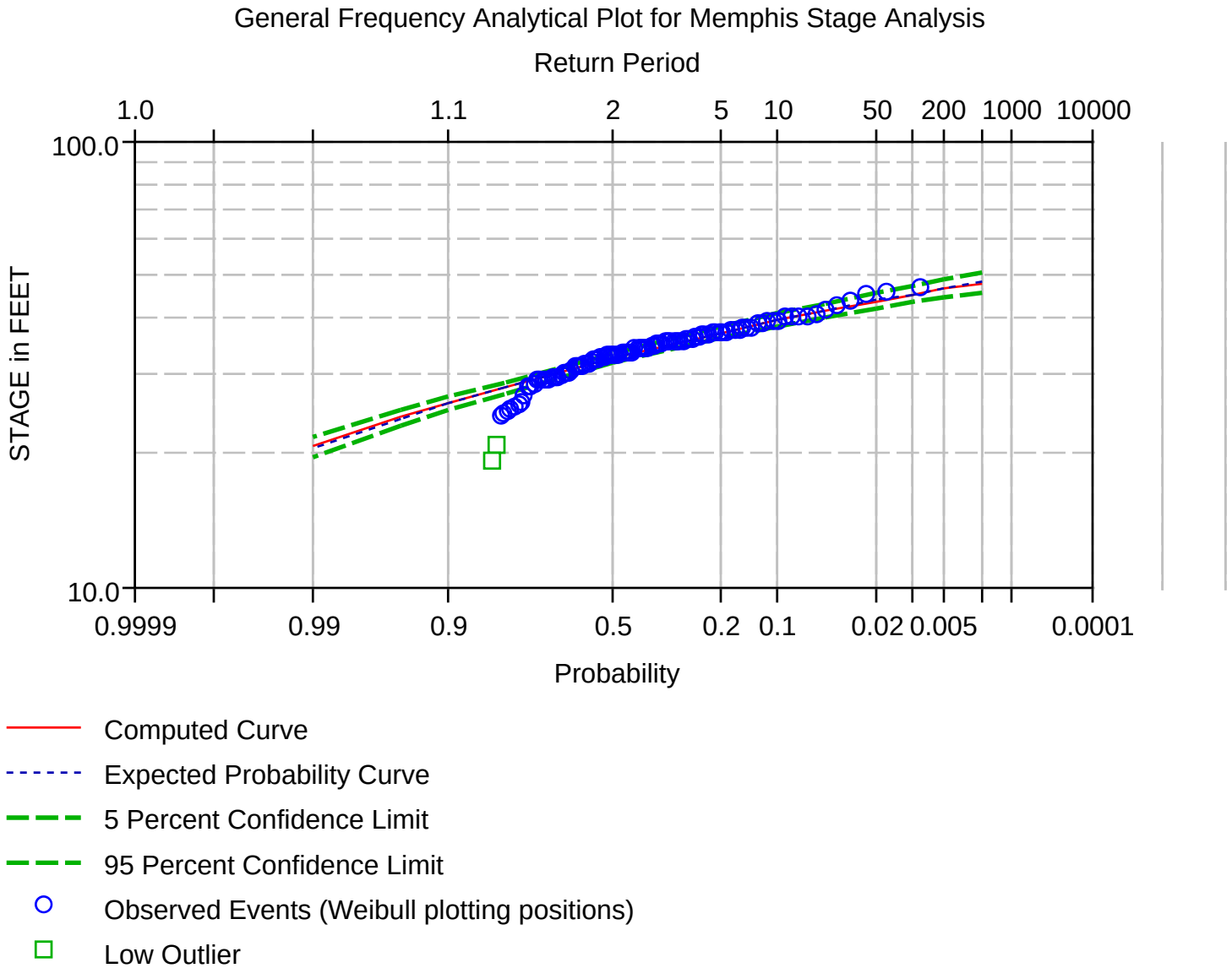
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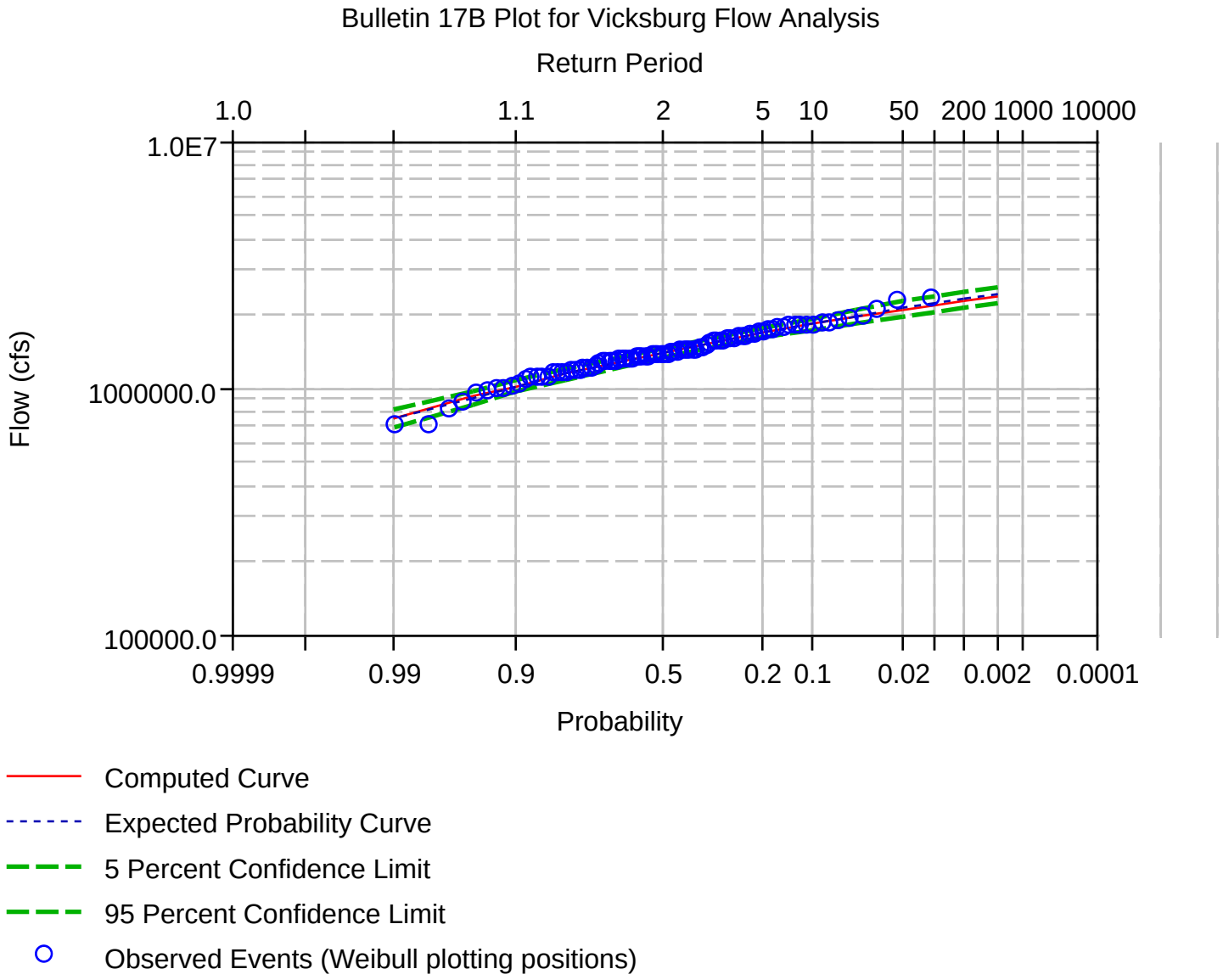
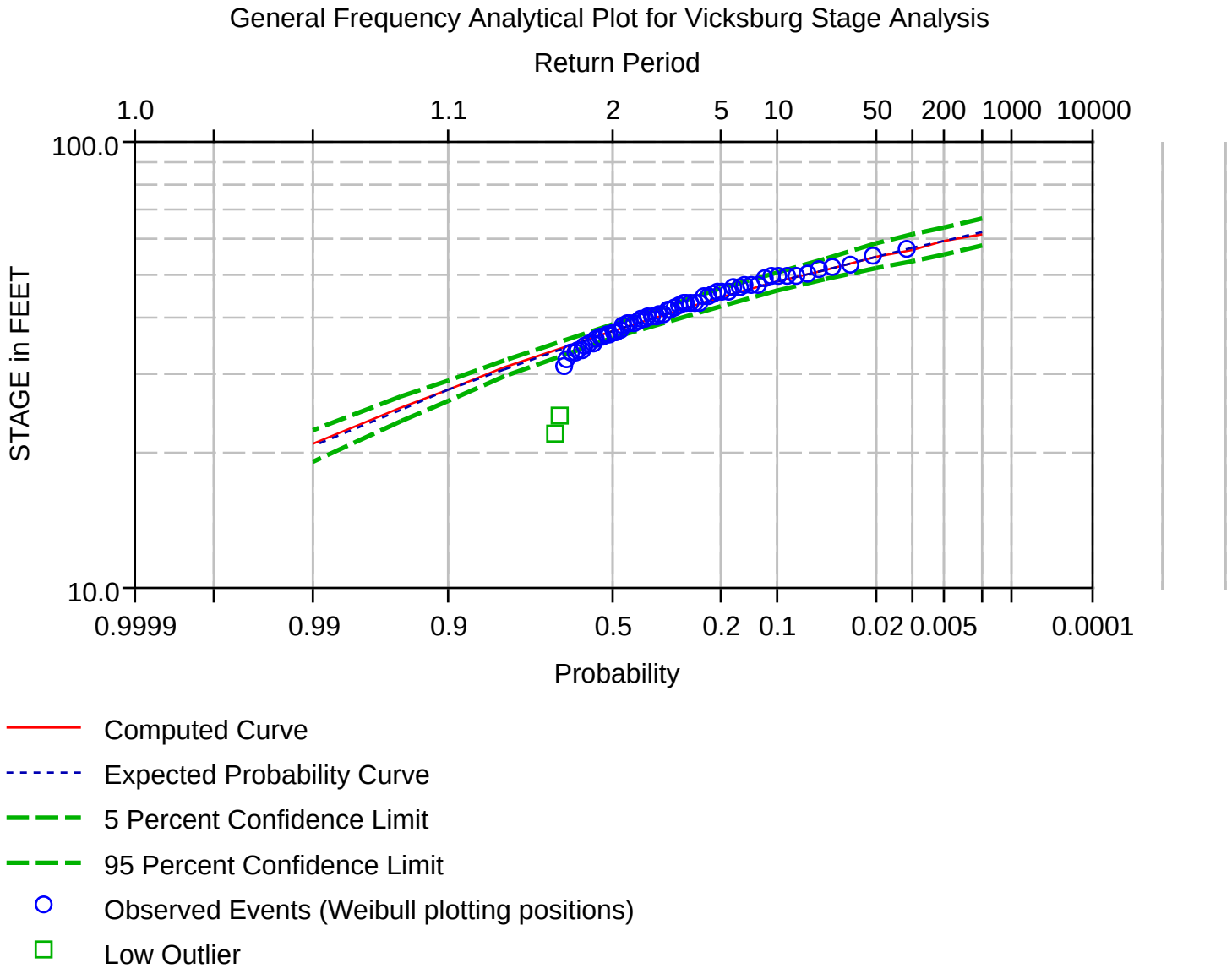
100.0
10.0
STAGE in FEET
0.9999
0.99
0.9
0.5
0.2
0.1
0.02
0.005
0.0001
Probability
Computed Curve
Expected Probability Curve
5 Percent Confidence Limit
95 Percent Confidence Limit
Observed Events (Weibull plotting positions)
Low Outlier


Bulletin 17B Plot for Vicksburg Flow Analysis
Return Period
1.0
1.1
2
5
10
50
200
1000
10000
1.0E7
1000000.0
100000.0
Flow (cfs)
0.9999
0.99
0.9
0.5
0.2
0.1
0.02
0.002
0.0001
Probability
Computed Curve
Expected Probability Curve
5 Percent Confidence Limit
95 Percent Confidence Limit
Observed Events (Weibull plotting positions)


General Frequency Analytical Plot for Vicksburg Stage Analysis
Return Period
1.0
1.1
2
5
10
50
200
1000
10000
100.0
10.0
STAGE in FEET
0.9999
0.99
0.9
0.5
0.2
0.1
0.02
0.005
0.0001
Probability
Computed Curve
Expected Probability Curve
5 Percent Confidence Limit
95 Percent Confidence Limit
Observed Events (Weibull plotting positions)
Low Outlier

APPENDIX B

SAMPLE OUTREACH LETTER TO STAKEHOLDERS

<Date>

<Stakeholder Name>
<Stakeholder Address1>

<Stakeholder Address2>

RE: Delta Region Levee Protection Study

Dear Mr./Mrs. <Stakeholder>

This letter is intended to inform you of a FEMA mapping project that is under development by FEMA and the State of Mississippi. The purpose of this project is to more properly identify the Zone X areas in the Delta Region of Mississippi. The Zone X (shaded) is used on a Flood Insurance Rate Map (FIRM) to depict areas of moderate flood risk, including areas protected by levees from the one-percent annual chance flood. It is distinguished from the Zone X (unshaded), which depicts areas of low flood risk. The legend entries on the FIRM for Zone X areas are shown in **Attachment A**.

The boundary line between the Zone X (shaded) and Zone X (unshaded) represents the transition from areas of moderate flood risk to areas of low flood risk. In certain locations within the Delta Region, this boundary line coincides with a political (county) boundary which, in most cases, does not adhere to any actual physiographic feature, such as topographic relief, that would afford this apparent reduction in flood risk. **Attachment B** shows an example of this discontinuity in flood hazard zone along the boundary between Washington and Sunflower counties. This project aims to update the FIRM by generating a revised Zone X boundary, based on technically sound analyses. A more technically based Zone X boundary could improve floodplain management in the region by providing communities better guidance in locating and designing critical infrastructure, or by assisting communities that have opted to include standards for Zone X in their Flood Damage Prevention Ordinance.

The geographic extent of the revised data is unknown and will depend on the results of the study. Some locations may switch from shaded to unshaded Zone X, especially if they are on locally higher ground. Other locations may switch from unshaded to shaded Zone X, especially if they are in lower lying areas. All of the revised area for this project will be confined to the landward side of the Mississippi River levee. Areas on the riverside of the levee will not be affected.

It is important to understand that while this geographic extent of boundary revisions may be large and include portions of multiple counties, it will not affect the federal flood insurance purchase requirements or premium rates of property owners, since it is not resulting in any revision the Special Flood Hazard Area (Zones A, AE, AH, AO, AR or A99) or the regulatory floodway. Federal insurance is available for properties in the Zone X within communities that participate in the National Flood Insurance Program, but the purchase is not required under federal law. However, there are separate HUC-8 Basin studies underway in the Big Sunflower, Tallahatchie, and Coldwater basins that overlap this project area, and

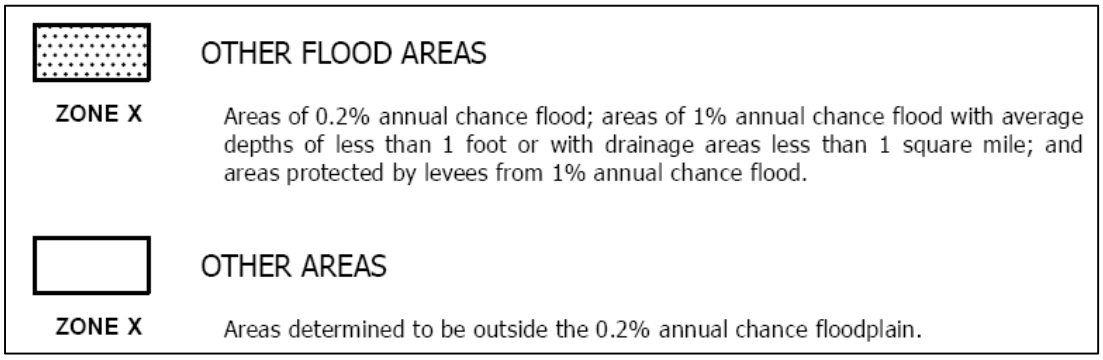
which may result in changes to Special Flood Hazard Areas. Such revisions will be subject to all statutory public review and due process requirements.

If you wish to learn more about this project, please visit the following URL that will link you to the project's Plan of Work report http://geology.deq.ms.gov/floodmaps/. You may also contact Steve Champlin at 601-961-5506 or Stephen_Champlin@deg.state.ms.us

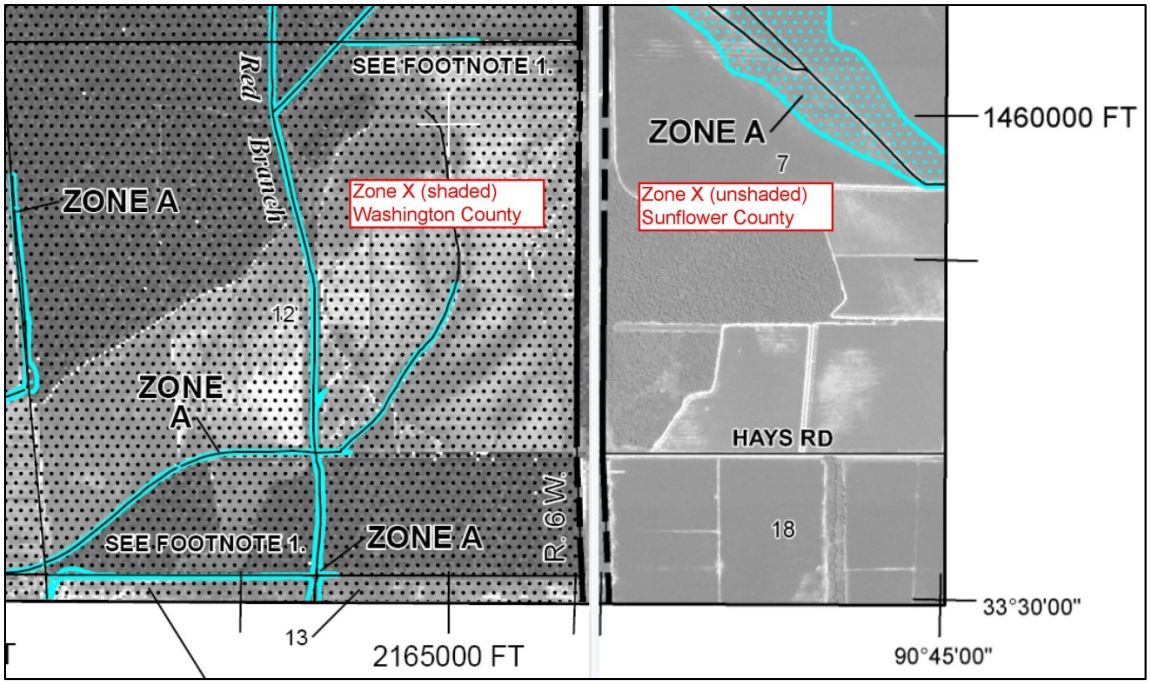
Sincerely,

Stephen Champlin, RPG,
Geospatial Resources Division/Flood Mapping Director
Office of Geology
Mississippi Department of Environmental Quality (MDEQ)

Attachment A—Legend Entry for Zone X areas on the Flood Insurance Rate Map.



Attachment B—Example of Zone X discontinuity along the boundary between Washington and Sunflower counties, Mississippi.


SEE FOOTNOTE 1.
Red Branch
ZONE A
Zone X (shaded)
Washington County
12
ZONE A
SEE FOOTNOTE 1.
ZONE A
R. 6 W.
13
2165000 FT
ZONE A
7
Zone X (unshaded)
Sunflower County
1460000 FT
HAYS RD
18
33°30'00"
90°45'00"