THE STATE OF MISSISSIPPI

THE MISSISSIPPI EMERGENCY MANAGEMENT AGENCY &
THE MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

FLOOD MAP MODERNIZATION INITIATIVE

FY2004-2008 BUSINESS PLAN
2005 UPDATE

PREPARED FOR:
THE FEDERAL EMERGENCY MANAGEMENT AGENCY

February 14, 2005
STATE OF MISSISSIPPI
FLOOD MAP MODERNIZATION INITIATIVE

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INTRODUCTION

The State of Mississippi is included in the Federal Emergency Management Agency’s (FEMA) Region IV, which has suffered the majority of the nation's disaster declarations since 1965. Eleven of the declarations have been issued in Mississippi since 1998. The state annually experiences the threat and frequent consequences of the natural hazards associated with flooding, hurricanes, ice storms, severe weather, and tornadoes. With more than 5.2 million acres of floodplain (over 15% of the state's total area), Mississippi has the 5th largest floodplain in the United States. Floods have been, and continue to be, the most destructive natural disasters in terms of economic loss to the citizens of Mississippi. Since 1978, Mississippi flood insurance policy holders have received over $276 million in claim payments. Currently there are 41,678 policies in effect in Mississippi. The state’s vulnerability to hurricanes and flooding makes it imperative that communities and property owners have accurate, up-to-date information about flood risk. However, in 2004, available hazard information within the State of Mississippi was and still is very poor as evidenced by the following:

- Fifty percent (50%) of the flood hazard maps in Mississippi are over fifteen (15) years old, and eighty-nine percent (89%) are over ten (10) years old.
- Sixty-one (61) communities in the state of Mississippi are not mapped.
- Out of Mississippi’s eighty-two (82) counties, only one county (Rankin) has a countywide Digital Flood Insurance Rate Map (DFIRM) with new FEMA specifications, one county (Harrison) with non-countywide DFIRMs with new specifications, two counties (Lee and DeSoto) with countywide DFIRMs with old
The ability to plan for flood hazards and mitigation begins with accurate, updated flood maps. For years, this ability has been hampered by funding and time constraints placed on the system. Recognizing the need for adequate and accurate map production, FEMA developed the Flood Map Modernization Program (FMMP) to modernize the flood hazard mapping program, focused on enhancing and converting maps to a digital format. Mississippi, through a joint effort between the Mississippi Emergency Management Agency (MEMA) and the Mississippi Department of Environmental Quality (MDEQ), is participating with FEMA Region IV as a Mapping State and a Cooperating Technical Partner (CTP) by an agreement which was signed January 28, 2003. To implement this agreement and to manage the state's flood mapping activities, the Mississippi Flood Map Modernization Initiative (MFMMI) was created.

I. OVERVIEW

A. Purpose of Plan

By developing the FMMP, FEMA has created an opportunity for Cooperating Technical Partners (CTP) to manage flood map development, enhancement, and production. A copy of the current CTP agreement, between Mississippi and FEMA, is shown in Appendix A. Implementation of the FMMP will include a consideration and prioritization of areas of high growth, of high population densities, with excessive repetitive loss claims, with higher National Flood Insurance Program (NFIP) policy bases, and with the ability to leverage other resources.

This business plan will provide a clear overview of the MFMMI's current status, goals for the future, an explanation of how the MFMMI is organized, how program management
will be achieved, and a description of the funding needed to properly support this program.

B. Goals and Objectives
The MFMMI is designed to meet FEMA’s four Government Performance and Results Act (GPRA) goals:

1. State population (by counties) with digital GIS flood data on line.
2. State population (by counties) with adopted final flood maps.
3. Percent leveraged effort toward digital GIS flood data; and
4. Allocation percentages of funding through to state and local CTPs.

Additional state goals for MFMMI include the following:

- Reduce the average age of Mississippi's FIRMs from over 16 years to six years or less.
- Produce county-wide digital flood hazard maps with up-to-date flood hazard data for entire State.
- Develop flood hazard maps for the unmapped, flood prone communities.

During the 2002 Legislative Session, the Mississippi State Legislature directed the MDEQ to initiate the development of a digital mapping program of the State of Mississippi, hereafter referred to as the Mississippi Digital Earth Model (MDEM). MDEM is defined as a three-dimensional representation of natural and man-made features of Mississippi including the following seven framework data elements defined by the Federal Geographic Data Committee (FGDC):

- Geodetic Control
- Digital Orthophotography
- Digital Elevation Models and Contours
- Property Ownership
- Hydrography
- Transportation
- Governmental Boundaries

All of the MDEM data elements will be digital, accurate, standardized, seamless, and Internet accessible. MDEQ initiated the MDEM program in 2001 through the
development of a prototype covering one county (DeSoto). This prototype was a collaborative effort among MDEQ, DeSoto County, and the Mississippi Space Commerce Initiative (MSCI).

The MDEM program is an integral part of the development of a more accurate, current, and digital MFMMI. The digital orthophotography will be used as the primary base map for the DFIRMs. The high-resolution topographic data and accurate Digital Elevation Models (DEMs) will be utilized to perform engineering studies to develop up-to-date, accurate flood hazard data and floodplain mapping.

The following are program objectives planned for the enhancement of MFMMI where funding will permit:

- Acquisition and production of natural color digital orthophotography at scale of 1" = 100' for urban areas and 1" = 400' for rural areas of the state.
- Acquisition of high-resolution topographic data and development of accurate DEMs.
- Use of DEMs to perform engineering studies and modeling to develop up-to-date, accurate flood hazard data and floodplain mapping.
- Use of the updated flood hazard data and floodplain mapping to produce seamless DFIRM coverage.
- Production of DFIRMs on a countywide basis with the county and its incorporated municipalities shown on the same set of maps.
- Implementation of Information Technology (IT) infrastructure to allow users and the public to access the MDEM data and the DFIRMs via the Internet.

C. Current Status
Mississippi's first Mapping Activity Statement (MAS) was signed in October of 2003 between MDEQ, MEMA and FEMA. In January 2004, MDEQ selected MGI as the state’s map modernization contractor. Mississippi has eighty-two (82) counties. A total of twelve (12) county-wide DFIRM mapping projects are underway in Mississippi.
Under FY2003 and FY2004 funding the State CTP is actively working on nine (9) county-wide DFIRM mapping projects (Desoto, Harrison, Benton, Choctaw, Hancock, Jackson, Kemper, Tunica and Warren). These projects have all been scoped and are in the engineering/flood mapping stage. One additional county-wide DFIRM project is actively underway in the state but funded directly by FEMA as a separate CTP (Pearl River). The State CTP is adding two new county-wide DFIRM flood mapping projects to use unspent FY2003 monies (Tate and George). Scoping activities for these two counties are scheduled to begin in mid February. Under FY2005 FEMA MAP MOD funding the State CTP is expecting to add eight (8) more county-wide DFIRM flood mapping projects this year (Copiah, Forrest, Hinds, Jones, Lamar, Lauderdale, Lee and Madison). Scoping activities should begin on these projects in June of this year (2005).

As stated earlier in this business plan, the State of Mississippi has plans to develop the Mississippi Digital Earth Model (MDEM). The vision for MDEM is to develop the seven framework layers on the statewide basis at scales which support local government parcel mapping. The seven layers are: Geodetic Control, Elevation and Bathymetry, Orthoimagery, Hydrography, Transportation, Government Boundaries, and Cadastral. Although efforts have been made to fund the acquisition of the statewide ortho, the legislature has not appropriated the necessary budget. When funding is secured, the state will acquire the statewide digital ortho which will serve as the state base map. Until the state acquires the statewide digital ortho, the Mississippi Flood Map Modernization Initiative (MFMMI) will rely on the best available data on a county-by-county basis.

In the fall of 2004, the Mississippi legislature did authorize $1 million in bond money in order to develop the state’s clearinghouse for remote sensing and GIS data. Mississippi Information Technology Services (ITS) is the agency charged with developing and hosting the state clearinghouse. Although the hardware and software are not as yet selected, there has been a clear policy statement regarding developing Digital Flood Insurance Rate Maps (DFIRMs). ITS will host and distribute the new DFIRMs for the state.
DRAFT

While the state clearinghouse and MDEM development will take some time to develop, the Office of Geology (MOG) is moving forward with its own efforts to host MFMMI data. MOG received a grant from the United States Geological Survey (USGS) for $21,500 for hosting and distributing a meta data node as well as making data available on the web. The system that results from this grant and our previous capabilities is a spatially enabled internet site. We will be using a sequel database with SDE and IMS. With this system we will develop our Flood Map Modernization website. The hardware and software will be assembled in December, 2004, and January, 2005. We will then begin to experiment with data and design our website. Ultimately we will post our current activities and outreach information on the website as well as making completed county data and maps available. When the state clearinghouse becomes operational, we will transfer the website and data to the clearinghouse while retaining ownership of the site maintenance.

II. Strategy

A. Program Management

MDEQ and MEMA have developed a team approach for MFMMI program management, in order to leverage resources and enhance the modernization of flood maps in Mississippi. In early 2004, MDEQ contracted with Mississippi Geographical Information, LLC (MGI), as a management consultant, technical manager, staff, and contractor. MGI was jointly formed by Waggoner Engineering, Inc. (WEI), EarthData International of Maryland LLC (EarthData), and Watershed Concepts. Independent QA/QC will be handled by Dewberry & Davis and Vargis. Figure 1 is an organizational chart showing the structure and key personnel of MFMMI. The FEMA Region 4 RAT TOOL is provided in the attached Appendix E.
MDEQ’s primary activities in MFMMI are program management and supervision, budget management, contracts and grants administration, program planning, coordination and outreach. FY2004 MMMS funded activities undertaken by MDEQ are listed below:

- Revisions to the Business Plan.
- Digital Base map inventory.
- Development of IT systems to facilitate MapMod activities.
- Coordination and management of scoping activitie.
• Development of processes and capabilities for management of multiple mapping projects, including scope, schedule, and budget tracking and reporting.

• Management and/or coordination of outreach activities, community meetings, website postings, and multi-media promotional activities.

MEMA’s primary activities, through the State NFIP Coordinator, are coordination and outreach, planning, post-preliminary processing activities and map/ordinance adoption.

MGI’s activities may include all of the following:

• Recommend prioritization of projects
• Outreach
• Scoping for individual projects
• Preparation of Mapping Activity Statements with FEMA
• Contract Management of other outside engineering and GIS consultants
• Management of budget
• Graphical and database QA/QC
• Engineering QA/QC
• Recommend the annual update of State Business Plan
• Gathering and refining base mapping, topographic, and GIS resources
• Panel layout and preparation of graphical information
• Database completion
• Development of hydrologic and hydraulic analyses
• DFIRM production
• Completion of preliminary maps, report, and database and submittal to FEMA
• Post-preliminary processing activities

B. 5-Year Plan

1. General

The MFMMI is committed to developing a flood map program that incorporates mapping needs assessment, project scoping, map production, and quality control for the entire state. A detailed implementation schedule, including additional information about the counties is shown in Appendices B and C. The 5-year plan implementation schedule of county DFIRM mapping projects by FY funding is shown below:
FY2003 (5 Counties-Figure 2)
DeSoto
Harrison
Kemper (previously in FY2004)
George (Recent addition because of unspent funds)
Tate (Recent addition because of unspent funds)

FY2004 (7 Counties-Figure 2)
Benton
Choctaw
Hancock
Jackson
Tunica
Warren
Pearl River (Separate CTP directly funded by FEMA)

FY2005 (8 Counties-Figure 3)
Copiah
Forrest
Hinds
Jones
Lamar
Lauderdale
Lee
Madison

FY2006 (17 Counties-Figure 4)
Chickasaw
Covington
Franklin
Lafayette
Lincoln
Lowndes
Neshoba
Oktibbeha
Pike
Tippah
Tishomingo
Walthall
Washington
Webster
Wilkinson
Winston
Yalobusha

FY2007 (18 Counties-Figure 5)
Adams
Alcorn
Attala
Clay
Grenada
Holmes
Itawamba
Marion
Marshall
Newton
Pontotoc
Prentiss
Quitman
Scott
Simpson
Sunflower
Union
Yazoo
<table>
<thead>
<tr>
<th>Counties</th>
<th>Fiscal Year 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amite</td>
<td>Lawrence</td>
</tr>
<tr>
<td>Bolivar</td>
<td>Leake</td>
</tr>
<tr>
<td>Calhoun</td>
<td>Leflore</td>
</tr>
<tr>
<td>Carroll</td>
<td>Monroe</td>
</tr>
<tr>
<td>Claiborne</td>
<td>Montgomery</td>
</tr>
<tr>
<td>Clarke</td>
<td>Noxubee</td>
</tr>
<tr>
<td>Coahoma</td>
<td>Panola</td>
</tr>
<tr>
<td>Greene</td>
<td>Perry</td>
</tr>
<tr>
<td>Humphreys</td>
<td>Sharkey</td>
</tr>
<tr>
<td>Issaquena</td>
<td>Smith</td>
</tr>
<tr>
<td>Jasper</td>
<td>Stone</td>
</tr>
<tr>
<td>Jefferson</td>
<td>Tallahatchie</td>
</tr>
<tr>
<td>Jefferson Davis</td>
<td>Wayne</td>
</tr>
</tbody>
</table>
Figure 2 - FY03 and FY04 county mapping projects. Rankin County was completed prior to CTP agreement.
Figure 3 - FY05 county mapping projects.
Figure 4 - FY06 county mapping projects.
Figure 5 - FY07 county mapping projects.
Figure 6 - FY08 county mapping projects.
2. Map Modernization

MFMMI is Mississippi’s effort to support FEMA’s nationwide Map Modernization program. The primary goal of the MFMMI is the development of reliable digital flood hazard maps and data in a county-wide format for every county in Mississippi. All county-wide DFRIM mapping projects will be completed following the guidelines and specifications established by FEMA for the Flood Hazard Mapping Program and the NFIP regulations (Title 44 of the Code of Federal Regulations, Parts 59-77). As discussed previously in this plan, a schematic of the digital FIRM (DFIRM) production process (absent the outreach component, which spans the entire project life) is shown in Figure 7.

Since each project is unique, the MASs and detailed project scoping will clearly depict the map enhancement and production process. This process, in addition to outreach activities, will include the elements necessary for the successful completion of each mapping project. Outreach activities are associated with all steps of the mapping projects to help avoid protests or appeals and assure map adoption. Outreach activities will include but not be limited to the following:

- Development of a website which will provide internet access to DFIRM mapping project scheduling and other flood mapping information.
- “Meet & Greet” pre-scoping meeting with the community to introduce the MFMMI team, explain map modernization, the importance of MAP MOD to the NFIP, the mapping plan and technical aspects, and the post-preliminary processing and map adoption.
- The use of a “DFIRM Adoption Process” handout at all meetings with map project communities to help explain the map adoption process to the community’s leaders, officials and citizens to help insure map adoption.
- Newspaper articles placed in local newspaper after a community scoping meeting announcing the mapping project and requesting citizen assistance in the form of high watermarks and other flood information.
- A post scoping meeting with the mapping project community leaders and officials to review scoping results.
The scoping phase allows for an in-depth analysis of the project which includes a needs assessment, inventory of existing data, and leverage and analyses of how the specific project compares to the goals provided by FEMA. The outcome of the scoping phase is a clear schedule, scope and budget for the completion of the project. Additionally, post-preliminary processing and map adoption are explained and discussed with the community leaders and officials.

The engineering and floodplain mapping phases include all necessary data collection, studies, and reports. Data and input will be gathered from other entities in addition to the planned map project communities. These may include other State agencies such as MDOT, Regional agencies and other Federal agencies such as the Corps of Engineers. There are QA/QC functions in the engineering and floodplain mapping phases. County-wide DFIRM mapping projects will be a combination of study types listed below:

- New detailed studies (limited).
- Redelineation of effective flood data using updated topographic data.
- And refinement or creation of approximate A zones.

Lastly, the map production phase is comprised of the actual DFIRM creation, map and FIS QA/QC, and post preliminary processing. MDEQ and MGI will ensure through the QA/QC process that all components of the study are in compliance with FEMA guidelines and standards. MDEQ, MEMA and MGI (in close coordination with FEMA Region 4) will all be involved in the post-preliminary processing and the map adoption. The DFIRM and FIS adoption process is explained in a six page document which is attached to this business plan in Appendix D.
III. PERFORMANCE GOALS

A. Goals
The MFMMI is designed to meet FEMA’s four GPRA goals:

1. State population (by counties) with digital GIS flood data online;
2. State population (by counties) with adopted final flood maps;
3. Percent leveraged effort toward digital GIS flood data; and
4. Allocation percentages of funding through to state and local CTPs.
The information in Table 1 presents the state population percentages that are projected
to be achieved as related to goals 1 and 2 during each year of the plan assuming early
receipt of FY funding.

Table 1 – GPRA Goals #1 and #2 with Projected MFMMI Performance

<table>
<thead>
<tr>
<th>FY</th>
<th>Population with Flood Data in Digital Format</th>
<th>Population with Accepted DFIRMs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FEMA Goal Projected</td>
<td>FEMA Goal Projected</td>
</tr>
<tr>
<td>2004</td>
<td>4.05%</td>
<td>20.0%</td>
</tr>
<tr>
<td>2005</td>
<td>14.49%</td>
<td>50.0%</td>
</tr>
<tr>
<td>2006</td>
<td>51.03%</td>
<td>65.0%</td>
</tr>
<tr>
<td>2007</td>
<td>67.31%</td>
<td>75.0%</td>
</tr>
<tr>
<td>2008</td>
<td>83.73%</td>
<td>85.0%</td>
</tr>
<tr>
<td>2009</td>
<td>100.00%</td>
<td>100.0%</td>
</tr>
<tr>
<td>2010</td>
<td>100.00%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 2 illustrates how goal #3 will be met at the FEMA target of 20% leverage for the
entire 5-year plan. The FEMA net contribution to map modernization over this period of
time is estimated at $15,849,293 with the Mississippi net leverage projected at
$3,231,930. It is important to note that the 20% leverage shown will be achieved from
state and local contributions that will be identified in the scoping phase of each mapping
project. The state and local leverage totaled together are estimated to exceed the 20%
figures shown in Table 2.

Table 2 – Leverage Goal

<table>
<thead>
<tr>
<th>FY</th>
<th>FEMA contribution</th>
<th>Mississippi contribution</th>
<th>Total Funding</th>
<th>% Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>1,765,293*</td>
<td>415,130</td>
<td>2,180,423</td>
<td>23.5%</td>
</tr>
<tr>
<td>2005</td>
<td>3,324,000</td>
<td>664,800</td>
<td>3,988,800</td>
<td>20.0%</td>
</tr>
<tr>
<td>2006</td>
<td>2,948,000</td>
<td>589,600</td>
<td>3,537,600</td>
<td>20.0%</td>
</tr>
<tr>
<td>2007</td>
<td>2,915,000</td>
<td>583,000</td>
<td>3,498,000</td>
<td>20.0%</td>
</tr>
<tr>
<td>2008</td>
<td>4,897,000</td>
<td>979,400</td>
<td>5,876,400</td>
<td>20.0%</td>
</tr>
<tr>
<td>Totals</td>
<td><strong>$15,849,293</strong></td>
<td><strong>$3,231,930</strong></td>
<td><strong>$19,081,223</strong></td>
<td><strong>20.4%</strong></td>
</tr>
</tbody>
</table>

* Excludes Pearl River County (funded by FEMA as a separate CTP).
FEMA’s goal #4 of allocating percentages to states and CTPs will be achieved because the State of Mississippi is a CTP.

In addition to the above discussed goals the MFMMI plan, if funded as planned, will have other measures which will be achieved. With the anticipated FY2005 funding Mississippi will have county-wide DFIRM mapping projects underway that will cover 51.03% of the State’s population, 75.37% of the State’s NFIP policies, 69.49% of the total claims, 64.62% of the repeat loss properties, and 64.55% of the repeat loss claims. Table X below shows the cumulative percentages covered by the current county mapping schedule with FEMA funding. County NFIP policy and loss data is included with Appendix E.

Table 3. % of NFIP Policies and Losses FY Map Funded.

<table>
<thead>
<tr>
<th>FY Year of Funding</th>
<th>Cumulative % of Population</th>
<th>Cumulative % of Policies</th>
<th>Cumulative % of Claims</th>
<th>Cumulative % of Repeat Loss Properties</th>
<th>Cumulative % of Repeat Loss Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.05%</td>
<td>3.08%</td>
<td>1.57%</td>
<td>1.50%</td>
<td>1.37%</td>
</tr>
<tr>
<td>2003</td>
<td>16.42%</td>
<td>28.22%</td>
<td>19.26%</td>
<td>18.67%</td>
<td>20.08%</td>
</tr>
<tr>
<td>2004</td>
<td>26.95%</td>
<td>55.85%</td>
<td>50.58%</td>
<td>46.14%</td>
<td>47.14%</td>
</tr>
<tr>
<td>2005</td>
<td>51.03%</td>
<td>75.37%</td>
<td>69.49%</td>
<td>64.62%</td>
<td>64.55%</td>
</tr>
<tr>
<td>2006</td>
<td>67.31%</td>
<td>86.21%</td>
<td>82.49%</td>
<td>78.51%</td>
<td>79.20%</td>
</tr>
<tr>
<td>2007</td>
<td>83.73%</td>
<td>91.17%</td>
<td>88.49%</td>
<td>85.30%</td>
<td>85.66%</td>
</tr>
<tr>
<td>2008</td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

B. Costs and Monitoring
The implementation of the Management Information Portal (MIP) will enable FEMA to monitor project progress by mapping partners. MDEQ/MGI will provide, populate and update information for the MIP, as specified by FEMA, to the National Service Provider (NSP). MDEQ will continue to perform the financial management activities required such as accounting for Federal funds and preparing financial reports. MDEQ at a minimum will continue to provide quarterly financial reports and quarterly project progress reports to FEMA as required and in a timely manner.
IV. Funding Request and Analysis

The key funding elements of MFMMI are Mapping and Program Management. The MFMMI will require total funding for map modernization of $19,081,223 for FY 2004-2008. The funds requested from FEMA during this period are $15,849,293 under the Map Mod program. Additionally, funding to support the program management of MFMMI for FY2004-2008 is requested from FEMA under its MMMS program. MFMMI program management will require total funding of $1,092,605 for FY 2004-2008. The funds requested from FEMA during this period are $877,624 under the Cap Map Phase II program. Both requests are described below.

A. Funding Requests

1. Mapping

Total MFMMI mapping costs over the 5-year plan FY2004-2008 are estimated at $19,081,223. The program has a 20% state leverage target which places Mississippi’s and local partners’ estimated contribution target over the 5-year plan at $3,231,930. A large portion of the local partners’ leverage contributions will only be determined during the scoping step of the mapping process. FEMA’s estimated contribution over the 5-year plan would total $15,849,293. The following Table 4 shows FEMA mapping contributions, Mississippi leverage contributions and estimated total funding for the 5-year plan for each year of funding (FY2004-2008).
2. Program Management

Mississippi is requesting additional FEMA funding support for the MFMMI program management under the MMMS funding. As new county-wide DFIRM projects are added to the MFMMI program each year additional resources will have to be committed to the MFMMI effort from MDEQ staff.

MDEQ FY04 management costs for MFMMI are estimated at approximately $151,000 including salaries, fringe and indirect costs. FEMA’s FY04 MMMS funding to support MDEQ’s management of MFMMI is $125,000 or approximately 80% of costs. Total MFMMI/MDEQ program management costs over the 5-year plan FY2004-2008 are now estimated at $1,092,605. These figures do not include MEMA support to the MFMMI program (CAP-SSSE funding is limited to MEMA). MDEQ is requesting FEMA support to MFMMI/MDEQ over the FY2004-2008 period in the total amount of $877,000 (approximately 80%). MDEQ’s net estimated contribution over the 5-year plan would be estimated at $214,981. The following Table 5 shows, Mississippi (MDEQ) costs, requested FEMA MMMS funding contributions and Mississippi (MDEQ) net costs for the 5-year plan (FY2004-2008). The FEMA Resource Allocation Tool (RAT) is included as Appendix G.

### Table 4 – MFMMI Mapping Funding MAP MOD FY2004-2008

<table>
<thead>
<tr>
<th>FY</th>
<th>FEMA contribution</th>
<th>Mississippi contribution</th>
<th>Total Funding</th>
<th>% Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>1,765,293*</td>
<td>415,130</td>
<td>2,180,423</td>
<td>23.5%</td>
</tr>
<tr>
<td>2005</td>
<td>3,324,000</td>
<td>664,800</td>
<td>3,988,800</td>
<td>20.0%</td>
</tr>
<tr>
<td>2006</td>
<td>2,948,000</td>
<td>589,600</td>
<td>3,537,600</td>
<td>20.0%</td>
</tr>
<tr>
<td>2007</td>
<td>2,915,000</td>
<td>583,000</td>
<td>3,498,000</td>
<td>20.0%</td>
</tr>
<tr>
<td>2008</td>
<td>4,897,000</td>
<td>979,400</td>
<td>5,876,400</td>
<td>20.0%</td>
</tr>
<tr>
<td>Totals</td>
<td>$15,849,293</td>
<td>$3,231,930</td>
<td>$19,081,223</td>
<td>20.4%</td>
</tr>
</tbody>
</table>

* Excludes Pearl River County (funded by FEMA as a separate CTP).
Table 5 - MFMMI Program Management Funding (MMMS) FY2004-2008

<table>
<thead>
<tr>
<th>FY Year</th>
<th>Mississippi/ MDEQ Management Cost Est.</th>
<th>FEMA MMMS Funding</th>
<th>Mississippi/ MDEQ Management NET Cost Est.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>$ 151,825</td>
<td>$ 125,000</td>
<td>$ 26,825</td>
</tr>
<tr>
<td>2005</td>
<td>200,390</td>
<td>160,312</td>
<td>40,078</td>
</tr>
<tr>
<td>2006</td>
<td>200,390</td>
<td>160,312</td>
<td>40,078</td>
</tr>
<tr>
<td>2007</td>
<td>270,000</td>
<td>216,000</td>
<td>54,000</td>
</tr>
<tr>
<td>2008</td>
<td>270,000</td>
<td>216,000</td>
<td>54,000</td>
</tr>
<tr>
<td>Totals</td>
<td>$1,092,605</td>
<td>$877,624</td>
<td>$214,981</td>
</tr>
</tbody>
</table>

2. Total Funding Request

The following Table 6 shows the total MFMMI estimated mapping and program management costs for the 5-year plan (FY2004-2008). Mississippi's and FEMA's funding contributions are shown on an annual basis for both Mapping and Program Management. Total funding necessary for MFMMI over the 5-year plan is estimated at $20,173,828.

Table 6 – MFMMI Mapping and Program Management Total Costs FY2004-2008

<table>
<thead>
<tr>
<th>FY</th>
<th>Mapping</th>
<th>Program Management</th>
<th>Total Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FEMA contribution</td>
<td>Mississippi contribution</td>
<td>FEMA MMMS contribution</td>
</tr>
<tr>
<td>2004</td>
<td>1,765,293*</td>
<td>415,130</td>
<td>$125,000</td>
</tr>
<tr>
<td>2005</td>
<td>3,324,000</td>
<td>664,800</td>
<td>160,312</td>
</tr>
<tr>
<td>2006</td>
<td>2,948,000</td>
<td>589,600</td>
<td>160,312</td>
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<tr>
<td>2007</td>
<td>2,915,000</td>
<td>583,000</td>
<td>216,000</td>
</tr>
<tr>
<td>2008</td>
<td>4,897,000</td>
<td>979,400</td>
<td>216,000</td>
</tr>
<tr>
<td>Totals</td>
<td>$15,849,293</td>
<td>$3,231,930</td>
<td>$877,624</td>
</tr>
</tbody>
</table>

* Excludes Pearl River County (funded by FEMA as a separate CTP).
The following Table 7 shows the total requested FEMA funding for both elements of the MFMMI. Combining Mapping (Map Mod) funding of $15,849,293 and Program Management (MMMS) funding of $877,624 creates a total request of FEMA funding to MFMMI over the 5-year plan (FY2004-2008) of $16,726,917.

Table 7 – Total FEMA MAP MOD and MMMS Funding FY2004-2008

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mapping (MAP MOD)</td>
<td>$1,765,293*</td>
<td>$3,324,000</td>
<td>$2,948,000</td>
<td>$2,915,000</td>
<td>$4,897,000</td>
<td>$15,849,293</td>
</tr>
<tr>
<td>Program Management (MMMS)</td>
<td>$125,000</td>
<td>$160,312</td>
<td>$160,312</td>
<td>$216,000</td>
<td>$216,000</td>
<td>$877,624</td>
</tr>
<tr>
<td>Total Requested FEMA Funding</td>
<td>$1,890,293</td>
<td>$3,484,312</td>
<td>$3,108,457</td>
<td>$3,164,000</td>
<td>$5,113,000</td>
<td>$16,726,917</td>
</tr>
</tbody>
</table>

* Excludes Pearl River County (funded by FEMA as a separate CTP).

B Alternatives Analysis

1. Medium

With a two-thirds level of requested funding to MFMMI, population goals could still be achieved but the level of mapping would be primarily digital conversion of maps with limited updates to flood data. Assuming current FY2004 funding and FY2003 funding remains at the level recently indicated to MDEQ by FEMA Region 4, remaining funding levels would be sufficient to allow, on average, approximately $90,000 each for the remaining 61 counties to be mapped in the FY2006-FY2007 time period. This would only allow low end flood studies or digital conversions of existing flood maps. Significant mapping costs would be required in future mapping programs to provide accurate and up-to-date flood maps to support NFIP. The medium funding level is shown below in Table 8.
Table 8 - 2/3rds (Medium) Funding Level.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(MAP MOD)</td>
<td>$1,765,293*</td>
<td>$3,324,000</td>
<td>$1,822,112</td>
<td>$1,822,112</td>
<td>$1,822,112</td>
<td>$10,555,629</td>
</tr>
</tbody>
</table>

* Excludes Pearl River County (funded by FEMA as a separate CTP).

2. Low

At a one-third level of requested funding, the MFMMI program would be unable to meet FEMA’s goals or objectives. Assuming current FY2004 funding and FY2003 funding remains at the level recently indicated to MDEQ by FEMA Region 4, remaining funding levels would be insufficient to add new county-wide DFIRM mapping projects after FY2005. The low funding level is shown below in Table 9.

Table 9 - 1/3rd (Low) Funding Level.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(MAP MOD)</td>
<td>$1,765,293*</td>
<td>$3,324,000</td>
<td>$62,841</td>
<td>$62,841</td>
<td>$62,841</td>
<td>$5,277,815</td>
</tr>
</tbody>
</table>

* Excludes Pearl River County (funded by FEMA as a separate CTP).
Appendix A

Mississippi’s Cooperating Technical Partner (CTP) Agreement

MFMMI Business Plan

FY05 Update
Appendix B

PROJECT IMPLEMENTATION SCHEDULE

MFMMI Business Plan

FY05 Update
Appendix C

County Area, Stream Miles, Panel Numbers and Population By Scheduled Year of Funding

MFMMI Business Plan

FY05 Update
Appendix D

FIRM Adoption Process

MFMMI Business Plan

FY05 Update
Appendix E

County Population, NFIP Policy, Claims and Loss Data

MFMMI Business Plan

FY05 Update
Appendix F

FEMA Resource Allocation Tool

MFMMI Business Plan

FY05 Update
Appendix G

Acronyms and Abbreviations

MFMMI Business Plan

FY05 Update