



FEMA

**State of Alabama
COOPERATING TECHNICAL PARTNERS
PROGRAM MANAGEMENT MAPPING ACTIVITY
STATEMENT**

EARLY DEMONSTRATION MAS No. ED MAS No. FY10.AL

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated September 30, 2002 between the State of Alabama and the Federal Emergency Management Agency (FEMA), Early Demonstration Project Mapping Activity Statement (ED MAS) No. FY10.AL is as follows:

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SECTION 1—OBJECTIVE AND SCOPE

The objective of the Early Demonstration Project documented in this MAS is to recognize activities undertaken by CTPs as part of Risk MAP . For projects initiated in FY2009 or before, additional resources are being made available to demonstrate proof of concepts related to the Flood Risk Products and Datasets, community engagement, and a newer concept being referred to as Discovery. Early demonstration project funding could also be used by Cooperating Technical Partners (CTPs), to build a plan to increase their capability to successfully deliver Risk MAP. The desired outcomes and criteria for each of these areas are laid out below. Lessons learned from the early demonstrations will be applied to updating guidance, further refinement of concepts and products, and realizing production efficiencies and innovations. the active process of managing multiple projects for Inclusion of Dam Failure Risk Determination in the Upper Alabama Watershed and Development of Flood Risk Datasets and Risk MAP Communication Principles in Madison County. All processes and deliverables shall be completed in accordance to the Federal Emergency Management Agency's (FEMA's) *Guidelines and Specifications for Flood Hazard Mapping Partners* (G&S) and appropriate Procedure Memoranda (PMs). These documents can be found on FEMA's website at http://www.fema.gov/plan/prevent/fhm/gs_main.shtm and http://www.fema.gov/plan/prevent/fhm/gs_memos.shtm.

This Early Demonstration will be completed by the following Mapping Partners:

- Alabama Office of Water Resources
- AMEC Earth and Environmental
- PBS&J Corporation, Inc

Desired Outcomes

Among the desired outcomes from these initiatives:

1. Regions have an enriched understanding of the Risk MAP vision and experience in delivering Risk MAP products and concepts.
2. Projects demonstrate progress towards achieving the Risk MAP goals, specifically goals 2, 3 and 5 as outlined in the Risk MAP Multi-Year Plan.
3. Validation that new/enhanced Risk MAP products demonstrate increased value through Risk MAP to State, local, and tribal stakeholders or insight as to which products require refinement and whether or not new products are necessary to achieve Risk MAP goals.
4. The costs for developing and delivering the products to State, local, and tribal stakeholders are better understood.
5. A refined process for developing and delivering the products that accounts for new activities, eliminates unnecessary steps, demonstrates efficiencies and standardizes best practices from across the Regions is created.
6. Regions understand how products can be applied to projects underway.
7. Regions understand what is needed to appropriately set up efforts for production planning and scoping and support HQ development of guidance on the Discovery process.

Activities that can be accomplished under this Early Demonstration Project MAS are as follows:

- Flood Risk Datasets
- Discovery
- Risk MAP Communications
- CTP Capability Building

See Memo dated June 23, 2010 and attached for additional details on implementation of these Activities.

Pilot Project for Inclusion of Dam Failure Risk in the Upper Alabama Watershed Flood Risk Reports

Responsible Mapping Partner: Alabama Office of Water Resources

Scope:

As outlined in the 2010 Business Plan for the Alabama Floodplain Management program, OWR is committed to implementing programs and projects that align with complimentary risk management programs such as the National Dam Safety program. This goal is aligned with Risk MAP goal #5 which seeks *“to align Risk Analysis programs and develop synergies to enhance decision making capabilities through effective risk communication and management”*. OWR is in the process of developing an inventory of dams in the State of Alabama. This inventory includes a quick assessment of whether the dam is potentially a high hazard dam. This pilot project would cross reference the dam inventory with the HUC 8 watersheds in the State and develop a database of dams and potential dam failure risks for each watershed for reference in future Watershed Flood Risk Reports.

For the Upper Alabama Watershed, OWR will develop a template for inclusion in the Watershed Flood Risk Report that includes general information about each high hazard dam in the watershed including location, size, ownership, structures and infrastructure in the potential dam breach zone, etc. OWR will also develop a checklist for initial screening for dam breach analysis and/or dam inspection need. For up to 12 dams, (anticipated to be those with the highest risk in the watershed) OWR will research existing studies and perform a dam breach analysis using available data and standard engineering practices. The resulting dam breach areas will be mapped for inclusion as applicable in the Watershed Flood Risk Report. This project aligns well with the overall vision of Risk MAP to provide clear communication regarding dam failure risks as outlined below.

*“Specifically for the National Dam Safety Program, FEMA must effectively communicate dam failure risk so that communities and the American public can understand their risk and make informed decisions to safeguard or avoid that risk. It is imperative that dam safety public awareness and dam failure risk communication become a major component of the program. By linking risk communication efforts, FEMA can leverage the diverse stakeholder communities to further the message of dam failure risks. This information must be easily accessible to local officials in communities affected by dams; this can be delivered through the Risk MAP systems”.*¹

The desired results of this pilot project are as follows:

- 1) Refined process for screening/modeling high hazard dams for inclusion in Watershed Flood Risk Reports.
- 2) Understanding baseline costs for future inclusion of dam hazard analyses in Risk MAP studies.
- 3) Coordinating results with local officials to validate the usefulness and viability of dam breach hazards being identified in the Flood Risk Reports (engaging local risk managers/community officials through a final coordination meeting).
- 4) Develop a process in which screening results can be integrated into the Discovery process to develop a list of high hazard dams that communities can utilize to develop a request list for inclusion in Risk MAP projects.

Deliverables: The Alabama Office of Water Resources shall deliver the following to the FEMA Regional Project Officer in accordance with the schedule outlined in Section 4– Schedule.

- Mid Term Progress Report
- Pre-project scoping meeting
- Watershed Flood Risk Report Template

Standards: All processes and deliverables shall be completed in accordance to the Federal Emergency Management Agency’s (FEMA’s) Guidelines and Specifications for Flood Hazard Mapping Partners (G&S) and appropriate Procedure Memoranda (PMs).

Focus Areas:

- Flood Risk Products and Datasets
- Flood Risk Reports
- Discovery
- CTP Capability Building

Pilot Project for Development of Flood Risk Datasets and Risk MAP Communication Principles in Madison County, AL

Responsible Mapping Partner: Alabama Office of Water Resources

Scope:

The Alabama Office of Water Resources (OWR) received Fiscal Year 2009 funding for flood map updates in Madison County, Alabama. OWR is proposing the execution of a pilot project in Madison County that will result in the development of Flood Risk Datasets and the implementation of Risk MAP communication principles. This pilot project will provide FEMA Region IV and the AL OWR with invaluable experience in delivering Risk MAP products including the Flood Risk Database, Flood Risk Report and Flood Risk Map, as well as a better understanding of the costs associated with developing and delivering these products. Additionally, the early implementation of Risk MAP concepts will provide essential stakeholder feedback regarding the usefulness and potential refinement of the products which will ultimately help FEMA meet the Risk Map goal of producing a measurable increase in public understanding and awareness of flood risk.

The AL OWR intends to produce the following Flood Risk Datasets for Madison County, AL:

- **Flood Risk Database**
 - Changes Since Last FIRM data
 - using local parcel/structure data for Cities of Huntsville and Madison
 - including Contributing Engineering Factors
 - including Water Surface Elevation Change Grid
 - Flood Risk Probability Grids
 - Percent annual chance of being flooded
 - Percent chance of being flooded in a 30-year period
 - Depth grids for 10%, 4%, 2%, 1% and 0.2% annual chance flood events
 - HAZUS results (at the census block level) from the AAL for unrevised flooding sources
 - HAZUS results (at the census block level) using depth grids created for new/revised flood studies
 - Annualized Loss analysis for new or revised flooding sources using the 10%, 4%, 2%, 1% and 0.2% depth grids (using local parcel/structure data)
 - Velocity grids
 - Identification of areas of potential mitigation benefit and significant development

- **Flood Risk Report**
 - Community Risk Assessment Summary tables
 - Changes since last FIRM (tabular)
 - Areas of potential mitigation benefit
 - Tabular Contributing Engineering Factors
 - HAZUS loss estimates

- **Flood Risk Map**
 - 1% flood loss estimates at census block level (composite from AAL and new HAZUS analysis)
 - Claims Data
 - Contributing Engineering Factors and Areas of Mitigation Interest
 - Other base product elements (i.e. changes since last FIRM, depth grids, etc.) if elements can be depicted clearly

This pilot project will include two in-person opportunities to build risk awareness at the local level:

- **Initial Flood Risk Review Meeting:** This meeting will provide local stakeholders the opportunity to provide refined risk assessment data, local building data and preliminary contributing flood risk factors. This meeting will also provide an opportunity to discuss the usefulness of base versus enhanced products and to set expectations for project deliverables.
- **Final Flood Risk Review Meeting:** This meeting will provide local officials an opportunity to review the Flood Risk Datasets, take ownership of the products, and deliver the results of the project to the local citizenry. This meeting will also provide another opportunity to discuss the usefulness of the products and to formulate recommendations to FEMA for streamlining or improving the products and the process for development.

Deliverables: The Alabama Office of Water Resources shall deliver the following to the FEMA Regional Project Officer in accordance with the schedule outlined in Section 4– Schedule.

- Mid Term Progress Report
- Flood Risk Database
- Flood Risk Report
- Flood Risk Map

Standards: All processes and deliverables shall be completed in accordance to the Federal Emergency Management Agency’s (FEMA’s) Guidelines and Specifications for Flood Hazard Mapping Partners (G&S) and appropriate Procedure Memoranda (PMs).

Schedule: Mid Term Progress Report: Development of Flood Risk Database, Flood Risk Report and Flood Risk Map and completion of initial Flood Risk Review Meeting by November 30, 2010. Completion of final Flood Risk Review Meeting and Lessons Learned synthesized by February 2011.

Focus Areas:

- Flood Risk Products and Datasets
- Risk MAP Communications
- CTP Capability Building

SECTION 2—PERIOD OF PERFORMANCE

The activities outlined in this MAS will be completed as specified in the Agreement Articles of the Cooperative Agreement. The Mapping Activities may be terminated at the option of FEMA or Alabama Office of Water Resources in accordance with the provisions of the Partnership Agreement dated September 30, 2002. If these mapping activities are terminated, all products produced to date must be returned and the remaining funds from uncompleted activities, provided by FEMA for this MAS, will be returned to FEMA. Deliverables for these Early Demonstration Projects will be delivered no later than February 28, 2011.

SECTION 3—FUNDING/LEVERAGE

FEMA is providing funding, in the amount of \$195,000, to the Alabama Office of Water Resources for the completion of this Early Demonstration Activity. The Alabama Office of Water Resources shall provide any additional resources required to complete the assigned activities for this Program Management Activity. The leverage listed below is based on blue book values or actual costs where Blue Book values don’t exist. The current Blue Book is dated January 2009 and can be downloaded from FEMA’s Information Resource Library at <http://www.fema.gov/library/viewRecord.do?id=2473>.

Table 3.1 Contribution and Leverage

Project Task	FEMA Contribution	Partner Contribution	% Partner Leverage of Total Project Cost	Total Project Cost
Dam Failure Risk				
Flood Risk Datasets				
TOTAL FUNDING AMOUNTS	\$	\$	%	\$

SECTION 4—STANDARDS

Mapping partners working on a Early Demonstration Project are responsible for complying with all related PMs published by FEMA as of the date of this agreement. Relevant standards can be found in the G&S and PMs, FEMA’s Federal Regulation 44 CFR and the appropriate year CTP Guidance. CTPs should also coordinate with their Regional office to determine additional standards that should be met.

G&S may be downloaded from the FEMA Flood Hazard Mapping website at http://www.fema.gov/plan/prevent/fhm/dl_cgs.shtm.

SECTION 5—SCHEDULE

The activities documented in this MAS shall be completed in accordance with Table 5.1 but not to extend beyond February 28, 2011. A mid-term progress report will be due by November 30, 2010. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner. Please also identify to whom the products associated with each task are to be submitted to (i.e. the MIP, FEMA Regional Office, etc.).

Table 5.1 Project Activities Schedule

Dam Failure Risk – Upper Alabama Watershed			
Activities	Responsible Partner(s)	Cost	Delivery Date
Develop Watershed Inventories	AMEC, OWR		11/30/2010
Develop Screening Process	AMEC, OWR		11/30/2010
Detailed Dam Analyses	AMEC, OWR		2/28/2011
Report Development	AMEC, OWR		2/28/2011

Community Coordination Meeting	AMEC, OWR		2/28/2011
Recommendations to FEMA	AMEC, OWR		2/28/2011
TOTAL COST			

Flood Risk Datasets – Madison County			
Activities	Responsible Partner(s)	Cost	Delivery Date
Add 25 yr Event	AMEC, OWR		11/30/2010
Create Effective Grids	AMEC, OWR		11/30/2010
CSLM Products	AMEC, OWR		11/30/2010
Flood Hazard Grid Products	AMEC, OWR		11/30/2010
Flood Risk Grid Products	AMEC, OWR		11/30/2010
HAZUS Products	AMEC, OWR		11/30/2010
Points of Interest	AMEC, OWR		11/30/2010
Flood Risk Report	AMEC, OWR		11/30/2010
Flood Risk Map	AMEC, OWR		11/30/2010
Mid-Term Progress Report	AMEC, OWR		11/30/2010
Final Report	AMEC, OWR		02/15/2011
Risk Meetings	AMEC, OWR		02/15/2011
TOTAL COST			

SECTION 6—CONTRACTORS

The Alabama Office of Water Resources intends to use the services of AMEC Earth and Environmental as a contractor for this Early Demonstration Project. The Alabama Office of Water Resources shall ensure that the procurement for all contractors used for this Early Implementation Project complies with the requirements of 44 CFR 13.36.

SECTION 7—REPORTING

Financial Reporting: Because funding has been provided to the Alabama Office of Water Resources by FEMA, financial reporting requirements for the Alabama Office of Water Resources will be in accordance with Cooperative Agreement Articles. Alabama Office of Water Resources shall also refer to 44 CFR 13.41.

The Alabama Office of Water Resources shall provide financial reports to the FEMA Regional Project Officer and Assistance Officer in accordance with the terms of the signed Cooperative Agreement for this MAS.

Status Reporting: Status reports will be submitted on a quarterly basis in accordance with the financial reporting submittals. The Alabama Office of Water Resources shall refer to 44 CFR 13.4 to obtain minimum requirements for status reporting. The Project Officer, as needed, may request additional information on status.

The Alabama Office of Water Resources may meet with FEMA and/or its contractor up to bi-weekly, or more frequently if needed, to review the progress of the project in addition to the quarterly financial and status submittals. These meetings will alternate between FEMA's Regional Office, the Alabama Office of Water Resources office, and conference calls, as necessary.

Earned Value Data Entry:

As there are no tasks within the Mapping Information Platform (MIP) Workflow associated with Early Demonstration Project, the MIP cannot be used to set baselines and track progress against these baselines. However, the FEMA Regional office and the CTP should set a cost and schedule baseline at the beginning of the project and review it quarterly when assessing the status of the project. The Project Officer may request additional information regarding status on an ad-hoc basis.

SECTION 8—PROJECT COORDINATION

Throughout the project, all members of the PMT will coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities shall include:

- Meetings, teleconferences, and video conferences with FEMA and other PMT members;
- Telephone conversations with FEMA and other PMT members on a scheduled basis (second Wednesday of the month) and an ad hoc basis, as required;
- E-mail, facsimile transmissions, and letters, as required.

SECTION 9—POINTS OF CONTACT

The points of contact for this Early Demonstration Project are Kristen Martinenza, P.E., CFM, the FEMA Regional Project Officer; Leslie Durham, P.E., the Project Manager for the Alabama Office of Water Resources; or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. When necessary, any additional FEMA assistance should be requested through the FEMA Regional Project Officer.

Each party has caused this MAS to be executed by its duly authorized representative.



Leslie Durham, P.E.
Project Manager
Alabama Office of Water Resources

9/28/10

Date



Kristen Martenza, P.E., CFM
Regional Project Officer
Federal Emergency Management Agency, Region IV

9/30/10

Date