



**FEMA**

**Kentucky Division of Water  
COOPERATING TECHNICAL PARTNERS  
PROGRAM MANAGEMENT MAPPING ACTIVITY  
STATEMENT**

**EARLY DEMONSTRATION MAS No. FY10.08.4**

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated August 16, 1999 between the Kentucky Division of Water (KDOW) and the Federal Emergency Management Agency (FEMA), Program Management Mapping Activity Statement (PM MAS) No. FY10.08.4 is as follows:

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## SECTION 1—OBJECTIVE AND SCOPE

The objective of the Early Demonstration Projects 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 for the projects described in this MAS are: North Elkhorn Creek (HUC 05002050801) – Flood Risk Datasets and Discovery – Salt River (HUC 05140102). 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](http://www.fema.gov/plan/prevent/fhm/gs_main.shtm) and [http://www.fema.gov/plan/prevent/fhm/gs\\_memos.shtm](http://www.fema.gov/plan/prevent/fhm/gs_memos.shtm).

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

- Kentucky Division of Water (CTP);
- URS Corporation (SC);
- Stantec Consulting Services, Inc (SC).

### *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.

## Project Title and Description

Responsible Mapping Partner: CTP/SC

Scope – Flood Risk Datasets:

KDOW is offering this early demonstration project as a case study to FEMA to determine how best to bring all the required components together in one HUC 12 watershed, which will serve as microcosm of the efforts required to deliver Risk MAP on a HUC 8 level. The outcome of this project aligns with Risk MAP Goals 2, 3 and 5 by increasing public awareness, educating and engaging state and local communities in risk-based mitigation planning, and by developing synergistic relationships between programs and government entities. KDOW has coordinated with the major players in this project; no controversial matters are anticipated.

Flood Risk Datasets. KDOW will include elements of the “base” and “enhanced” Risk MAP products for a selected HUC 12 watershed where flood hazard analysis is being conducted as part of the FY 2009 MAS Cooperative Agreement in Fayette County, KY. This project will serve to provide information that will complement HAZUS analyses, communicate risk to local governments and private citizens, and aid in mitigation planning efforts.

Under this early implementation project, KDOW will:

- Compile flood risk datasets for a 47 square mile HUC 12 watershed (North Elkhorn Creek – HUC 051002050801) in Fayette County, KY
  - Data collected countywide as part of FY 2009 MAS
    - Countywide LiDAR
    - Number of detailed miles being studied - 11
    - Number of LDS miles being studied – 71.6
    - Redelineation – 8.2
  - Changes since last FIRM
    - County has effective DFIRM
    - Identify Contributing Engineering Factors
    - Water surface elevation change grid
    - Obtain parcel/structure data from local community
  - Create Multi-Frequency Flood Depth and Analysis Grids
    - 10, 25, 50, 100, and 500-year depth grids (based on FY 2009 engineering scope) for new detailed studies
      - 10, 50, 100, and 500-year depth grids for redelineations
    - 100-year depth grid for LDS
    - Percent chance depth grid
    - Annualized depth grid
  - HAZUS flood risk assessment
    - Completed for all streams in project area at 100-year recurrence interval
    - Use local structure data
  - 4 project meetings with community officials and citizens
    - Discovery/introduction meeting work with community to ID what types of data are useful (include FP administrator, local emergency management, engineering, PVA staff)
    - Products overview meeting (representatives from above and elected officials)

- Preliminary data delivery meeting
- Final meeting to discuss deliverables, contributing engineering factors, and areas of mitigation interest
- Develop flood risk report for HUC 12
- Develop flood risk database for HUC 12

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).

Deliverables: The CTP supported by the SC shall deliver the following to the FEMA Regional Project Officer in accordance with the schedule outlined in Section 4– Schedule.

- Documented actual level of effort vs. proposed effort for each subtask.
- Documented mitigation action steps planned or executed by the communities within this watershed as result of this project, and potential losses avoided as a result.
- Recommended changes to the program messages or product specifications.

Scope - Discovery:

This project will serve to conduct a comprehensive assessment of the needs for flood risk identification in the Salt River watershed (HUC 05140102) in north-central KY. The watershed is comprised of the urbanized Louisville metropolitan area and a rapidly developing area to the south along the Interstate 65 corridor. Development in the watershed is also heavily influenced by the US Military's Base Realignment And Closure (BRAC) initiatives related to the Fort Knox Army base. Jefferson and Bullitt County, KY are located in the Salt River Watershed (HUC 05140102) along with all or parts of Anderson, Mercer, Henry, Oldham, Shelby, Spencer, Hardin, Nelson and Boyle Counties.

Under this early demonstration project, KDOW will:

- Complete and deliver CNMS databases
  - Report to stakeholders outlining CNMS including:
    - Intended uses
    - Potential outcomes
    - Overview of latest CNMS database with descriptions of applicable spatial files
  - Update CNMS databases with results from the discovery effort
  - Feedback from stakeholders for future improvements/uses of CNMS
- Conduct several Discovery Meetings in the watershed with partners and stakeholders including:
  - Elected officials
  - FP administrators and emergency management personnel
  - Louisville Metropolitan Sewer District (MSD)
  - Louisville & Jefferson County Information Consortium (LOJIC)
  - Local and regional planning authorities
  - City of Shepherdsville
  - Bullitt County Planning Department
  - Bullitt County GIS Department

- County PVA offices
- Prepare and deliver a Discovery map for the entire watershed with data collected during discovery such as:
  - Data that may be available for use in risk assessment products, including building footprint information, enhanced HAZUS analysis, etc.
  - Locations of past flooding inundation or flood damages
  - Information on local, state, and Tribal Mitigation plans (status of plan in Mitigation cycle, whether plan has “actionable” goals and objectives)
  - High-quality terrain data, local building footprint data, and essential facility data.

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).

Deliverables: The KDOW/CTP Contractor shall deliver the following to the FEMA Regional Project Officer in accordance with the schedule outlined in Section 4– Schedule.

Summary of findings from each of the subtasks; these deliverables specifically apply to this project.

- Updated CNMS inventory within the watershed;
- What communication/messaging worked and what did not;
- Discovery Map; and
- Recommended changes to the program messages or product specifications
  - Communication/messaging and recommended changes will be applied to all FY 2010 activities

## **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 KDOW in accordance with the provisions of the Partnership Agreement dated August 16, 1999. 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 \$\_\_\_\_\_, to KDOW for the completion of this Early Demonstration Activity. KDOW 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**

<b>Project Task</b>	<b>FEMA Contribution</b>	<b>Partner Contribution</b>	<b>% Partner Leverage of Total Project Cost</b>	<b>Total Project Cost</b>
<b>Data Collection and project start-up</b>				
<b>Changes since last FIRM</b>		0	0	
<b>Multi-frequency flood analysis and depth grids</b>				
<b>HAZUS Risk Assessment</b>				
<b>Project Meetings</b>				
<b>Flood Risk Report and Database</b>				
<b>Discovery</b>				
<b>TOTAL FUNDING AMOUNTS</b>				

\*Partner Contribution includes CTP staff time and outreach materials prepared by the CTP

## **SECTION 4—STANDARDS**

Mapping partners working on an 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](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.

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. A monthly teleconference will be conducted to discuss the project. The CTP will coordinate with the SC and FEMA to determine an appropriate time for the call.
- E-mail, facsimile transmissions, and letters, as required.

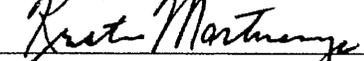
## SECTION 9—POINTS OF CONTACT

The points of contact for this Early Demonstration Project are Kristen Martinenza, P.E., CFM, the FEMA Regional Project Officer; Carey Johnson, the Project Manager for KDOW; 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.

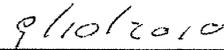
Each party has caused this MAS to be executed by its duly authorized representative.



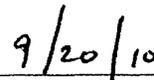
Carey Johnson  
Project Manager  
Kentucky Division of Water



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



Date



Date

**Table 5.1 Project Activities Schedule**

<b>Activities</b>	<b>Responsible Partner(s)</b>	<b>Cost</b>	<b>Delivery Date</b>
Discovery / Introduction Meeting	SC / CTP	*	Sep. 30, 2010
Products Overview Meeting	SC / CTP	*	Oct. 29, 2010
Engineering Analysis	SC / CTP	*	Dec. 17, 2010
Changes Since Last Firm	SC / CTP	*	Jan. 21, 2011
Flood Depth and Analysis Grids / HAZUS Risk Assessment	SC / CTP	*	Feb 4, 2011
Preliminary Data Delivery Meeting	SC / CTP	*	Feb. 11, 2011
Flood Risk Report and Database / Final Meeting	SC / CTP	*	Feb. 28, 2011
CNMS Updates	SC / CTP	*	Dec. 1, 2010
Conduct Discovery Meetings	SC / CTP	*	Jan. 1, 2011
Prepare / Deliver Discovery Map	SC / CTP	*	Feb. 1, 2011
Communication & Outreach	SC / CTP	*	Feb. 28, 2011
<b>TOTAL COST</b>			

\*Cost by task reported in Table 3.1

## **SECTION 6—CONTRACTORS**

KDOW intends to use the services of URS Corporation as a contractor for this Early Demonstration Project. KDOW 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 KDOW by FEMA, financial reporting requirements for KDOW will be in accordance with Cooperative Agreement Articles. KDOW shall also refer to 44 CFR 13.41.

KDOW 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. KDOW 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.

KDOW 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 KDOW 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