

**Wisconsin Department of Natural Resources  
Cooperating Technical Partner  
Mapping Activity Statement**

**Agreement WDNR-2003-05 – Scoping and Interim Data Preparation, including Hydrologic Analyses, Waukesha County Wisconsin**

In accordance with the Cooperating Technical Partner (CTP) Memorandum of Agreement dated September 14, 2001, between the Wisconsin Department of Natural Resources (WDNR) and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement WDNR-2003-5 is as follows:

**1. Statement Objective and Scope:**

**Objective 1.1:** The objective of this Mapping Activity is to complete Appendix I of the *Guidelines and Specifications for Flood Hazard Mapping Partners*, and evaluate and prepare the necessary data for remapping the floodplains in Waukesha County including incorporated communities. Common and comprehensive use of Appendix I (Project Scoping Toolbox) is envisioned to guide and expedite all remaining activities necessary to complete countywide Digital Flood Insurance Rate Map files for Waukesha County.

**Objective 1.2** Develop detailed hydrologic analyses for sub-basins of the Rock River, a total watershed area of 150 square miles, in coordination with the Southeastern Wisconsin Regional Planning Commission and local communities in Waukesha County. Hydrologic methods used for this analysis will generally consist of HMS watershed routing techniques except where datasets already exist and can be effectively incorporated. Discharges for the 10-, 2-, 1- and 0.5-percent annual chance storm events will be generated as the basis for a future hydraulic modeling and mapping phase.

**2. Period of Performance:** The period of performance will be in accordance with Cooperative Agreement Article II. It is anticipated that activities in this MAS will start October 1, 2003 and end September 30, 2004.

**3. Funding/Cost-Sharing:** 1

**4. Standards:** The following standards apply to this MAS:

- Standards and documents relevant to Objective 1.1 of this MAS can be found in Appendix I (Project Scoping Toolbox) of the *Guidelines and Specifications for Flood Hazard Mapping Partners*, April 2003. Appendix I can be found at [http://www.fema.gov/mit/tsd/dl\\_cgs.htm](http://www.fema.gov/mit/tsd/dl_cgs.htm).

- Detailed hydrologic and hydraulic analyses and floodplain mapping will follow the standards set forth in *Guidelines and Specifications for Flood Hazard Mapping Partners*, February 2002, which can be found at [www.fema.gov/mit/tsd/dl\\_cgs.htm](http://www.fema.gov/mit/tsd/dl_cgs.htm)
  - All computer models used for hydrologic and/or hydraulic analyses are limited to those included on FEMA's list of accepted numerical models for NFIP usage as found at [http://www.fema.gov/mit/tsd/en\\_modl.htm](http://www.fema.gov/mit/tsd/en_modl.htm).
  - Automated data processing and modeling algorithms for GIS-based modeling and mapping will be documented and provided to FEMA to ensure that they are consistent with the standards outlined above. Digital data sets (such as elevation, basin, or land use data) will be documented and provided to FEMA for approval prior to performing the analysis to ensure that they meet minimum requirements. If non-commercial (i.e., custom developed) software is used for the analysis, then full user documentation, technical algorithm documentation, and the software will be provided to FEMA for review prior to performing the scope of work.
5. **Products:** All supporting documentation for the activities in this Mapping Activity Statement shall be submitted in accordance with Appendix M, Section M.2.1 of the *Guidelines and Specifications for Flood Hazard Mapping Partners*, February 2002. These include:
- Digital copies of hydrologic and hydraulic modeling (input and output) files.
  - "Summary of Discharges" table(s) presenting discharge data for each flooding source.
  - Appropriate SC application/certification form for hydrology.
  - Table with range of Manning's "n" values.
  - Digital 1% and 0.2% annual chance floodplain and floodway boundaries.
  - Digital profiles of the 10%, 2%, 1%, and 0.2% annual chance water-surface elevations, representing existing conditions.
  - Flood Insurance Study (FIS) report.
  - Floodway Data Table(s) for each subject flooding source. The Floodway Data Table(s) must be compatible with the DFIRM database.
  - All back-up data used in the analyses or mapping, including work maps.
  - DFIRM mapping files, in one of the GIS file and database formats specified in FEMA's DFIRM Specifications.
  - Metadata files describing the DFIRM data, including the required information shown in the examples shown in FEMA's DFIRM Specifications.
  - Complete set of plots of the DFIRM panels showing all detailed flood hazard information at a suitable scale.
  - A QA/QC report that includes a description and the results of all automated or manual QA/QC steps taken during the preparation of the DFIRM.
  - For GIS-based modeling and mapping, WDNR will deliver all digital input and output data, intermediate data processing products, GIS data layers, and final products in the format of the Digital Flood Insurance Rate Map (DFIRM) database structure.

## 6. Schedule and Milestones:

**Milestone 1, Planning and Initial Coordination Phase:** WDNR will facilitate formation of a Project Management Team, prepare a Preliminary Project Management Plan, and initiate contact with all municipalities in the Waukesha County. Products forwarded to the FEMA Project Officer (PO) at the end of Milestone 1 will include Project Management Plan. The target date for Milestone 1 is November 30, 2003.

**Milestone 2, Project Formation Phase:** WDNR, in coordination with the Project Management Team, will conduct research sufficient to compile a Draft Scope of Project in accordance with the template provided in Appendix I (pages 41-47).

Products forwarded to the FEMA Project Officer (PO) at the end of Milestone 2 will include the Draft Scope of Work, MNUSS Data Worksheets (if generated), summary of effective flood study and other available data, and a checklist of potential obstacles. The documentation should also include contact reports/memoranda and meeting minutes. Sample templates are contained in Appendix I and are listed on Page I-2. The target date for Milestone 2 is January 31, 2004.

**Milestone 3, Scoping Meeting and Task Assignment Phase:** DNR, in coordination with the Project Management Team, will coordinate and oversee the following activities.

- Coordinate and document a scoping meeting, with invitation made to all Waukesha County communities, intended to vet the Draft Scope of Work and solicit assistance in the conduct of various tasks as envisioned by the Draft Scope of Work;
- Solicit and assist the development of Community Partner and Cooperating Technical Partner MOAs;
- Compile the Task Assignment and Scheduling Worksheet in accordance with the template provided in Appendix I (page 63); and
- Revise the draft Scope of Project where necessary.

Products forwarded to the FEMA Project Officer (PO) at the end of Milestone 3 will include a scoping meeting attendance sheet and meeting minutes, the Task Assignment and Scheduling Worksheet, and the revised Draft Scope of Project (as appropriate). The target date for Milestone 3 is February 28, 2004.

**Milestone 4, Post-scoping Meeting Activities:** DNR, in coordination with the Project Management Team, will coordinate, support and direct the development of draft Statements of Work or draft Mapping Activity Statements sufficient to execute the Task Assignment and Scheduling Worksheet and revised Scope of Project. A detailed statement of work to be used in development of hydrologic analyses of the Rock River tributaries (Objective 1.2.), addressing nature, location and methodology of the analyses, shall be compiled as part of this milestone.

Products forwarded to the FEMA Project Officer for Milestone 4 will include all draft Statements of Work or draft Mapping Activity Statements generated under this phase. The target date for Milestone 4 is March 31, 2004.

**Milestone 5, Hydrologic Modeling:** Products to be provided to the FEMA Project Officer include all hydrologic analyses in accordance with the TSDN format. A QA/QC report documenting the results of the independent review of all computational and data processing procedures shall also be included. The target date for Milestone 5 is September 30, 2004.

7. **Certification:** The following certifications apply to this Mapping Activity (as appropriate):
  - Hydrologic and/or hydraulic analyses and data will be certified by a registered Professional Engineer or Licensed Land Surveyor in accordance with 44 CFR 65.6(f).
  - Topographic information will be certified by a registered Professional Engineer or Licensed Land Surveyor in accordance with 44 CFR 65.5(c).
  - If fill is to be considered in the mapping to raise land areas to or above the 1% annual chance flood elevation, certification of the fill will be provided in accordance with 44 CFR 65.5(a)(6) by the community's NFIP permit official, a registered Professional Engineer, or a Licensed Land Surveyor.
  - Any levee systems to be accredited as discussed in Section 4 of this Mapping Activity Statement will be certified in accordance with 44 CFR 65.10(e).
  
8. **Technical Assistance and Resources:** FEMA will provide copies of effective FIS hydraulic models, FEMA-issued Letters of Map Change (LOMCs), and archived engineering back-up data from FEMA's Mapping Coordination Contractor (MCC) or other contractors as assigned by FEMA for archive maintenance.

Specific technical and programmatic support from FEMA force contracts should be coordinated with the FEMA Project Officer. This may include a request for support in selection of data sources, selection of digital data accuracy standards, assessment of vertical data accuracy, selection of data collection methods, selection of sub-contractors, and GIS-based engineering and modeling training.
  
9. **Contractors:** Procurement of subcontractors using Federal funds provided as part of this Mapping Activity will comply with the requirements of 44 CFR 13.36.
  
10. **Quality Assurance/Quality Control (QA/QC) Procedures:** WDNR will undertake internal QC reviews to ensure that the products described under Section 5 of this Mapping Activity Statement conform with the standards outlined under Section 4 of this Mapping Activity Statement. Additionally, an independent review for compliance with these standards will be undertaken by WDNR.

For GIS-based, automated modeling and mapping techniques, QA/QC activities should ensure automated calculations are reasonable and in compliance with standard flood modeling and mapping approaches. WDNR will document internal QA/QC procedures to ensure all calculations and data processing were reviewed. Software tools used to perform

modeling routines that emulate a model on FEMA's accepted model list based on rewritten source codes must be submitted to FEMA for review and approval in accordance with the conditions outlined in Subparagraph 65.6(a)(6) (i), (ii), and (iii) of the NFIP regulations.

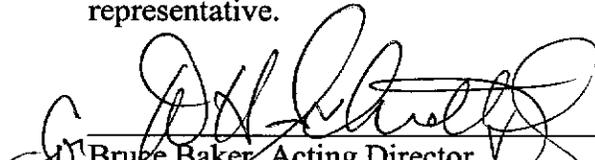
11. **Reporting:** Reporting requirements will be in accordance with Cooperative Agreement Articles V & VI. WDNR shall work with the FEMA Project Officer to establish an acceptable protocol for entry of project information into the Monitoring of Contracted Studies (MICS) database at the beginning of each project. WDNR will update MICS quarterly. If this report proves to be sufficient, the Assistance Officer may waive the written quarterly reports thereafter (reference 44 CFR Part 13.40, *Monitoring and Reporting Program Performance*). However, this shall not affect the financial reporting requirements (reference 44 CFR Part 13.41, *Financial Reporting*). The PO shall ensure that key WDNR staff have been provided access and passwords to MICS. The PO will also provide project-naming conventions for MICS. Once access is provided, MICS (including a tutorial) may be found at: <https://mics.fema.gov>.

In addition, MICS entries will be made at the completion of key documents conducted for Objective 1.1. These documents are:

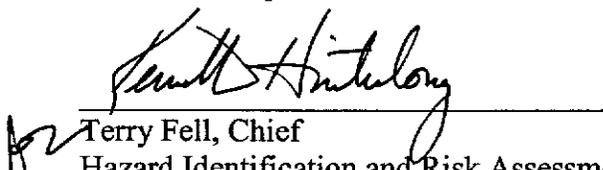
- Project Management Plan
- Task Assignment and Scheduling Worksheet
- Draft statements of Work(s)
- Cooperating Technical Partners Mapping Activity Statement(s)

12. **Points of Contact:** The CTP Project Manager is Alan Lulloff or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. The FEMA contacts are: Ken Hinterlong, Project Officer, and Lee Traeger, Technical Monitor.

Each party has caused this Mapping Activity Statement to be executed by its duly authorized representative.

  
Bruce Baker, Acting Director  
Bureau of Watershed Management  
Wisconsin Department of Natural Resources

9/29/03  
Date

  
Terry Fell, Chief  
Hazard Identification and Risk Assessment Branch  
Federal Emergency Management Agency, Region V

September 29, 2003  
Date