

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

**Agreement WDNR-2003-02c – Digital FIRM Production for the Oak Creek Watershed,
Milwaukee County**

In accordance with the Cooperating Technical Partner (CTP) Memorandum of Agreement dated September 14, 2001, between the Wisconsin Department of Natural Resources and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement WDNR-2003-02c is as follows:

- 1. Statement Objective and Scope:** The objective of this Mapping Activity is the conversion of effective Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs) to a digital format that conforms to FEMA's Digital Flood Insurance Rate Map (DFIRM) specifications. This Mapping Activity covers the digitization of 16 FIRM panels for the Oak Creek Watershed in Milwaukee County (Milwaukee County contains no unincorporated areas). Revisions to the FIRM and/or FBFM made through FEMA Letters of Map Change (LOMCs) issued since September 29, 1978 will also be incorporated into the DFIRM.
- 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 July 1, 2004 and end December 31, 2004.
- 3. Funding/Cost-Sharing:**
- 4. Standards:** The following documents are relevant to the creation of DFIRMs and this Mapping Activity:
 - Base maps will comply with the *Guidelines and Specifications for Flood Hazard Mapping Partners*, February 2002, which can be found at http://www.fema.gov/mit/tsd/dl_cgs.htm, especially Volume 1, Sections 1.3 and 1.4 and Appendices A and B.
 - Digital mapping submissions will comply with the requirements in Volume 1, Section 1.4 of *Guidelines and Specifications for Flood Hazard Mapping Partners*, February 2002, which can be found at http://www.fema.gov/mit/tsd/dl_cgs.htm.
 - *Standards for Digital Orthophotos* (U.S. Geological Survey, National Mapping Program, December 1996).
 - *Content Standards for Digital Geospatial Metadata* (Federal Geographic Data Committee, 1998).

5. Products: WDNR shall make the following products available:

- Quarterly status reports that include the percentage of work completed for this Mapping Activity, major accomplishments made during the quarter, any major problems encountered, and the resolution of any major problems encountered.
- DFIRM mapping files in one of the GIS file formats specified in FEMA's DFIRM Specifications. These files should be provided on CD-ROM.
- DFIRM database files in one of the database formats specified in FEMA's *Standard DFIRM Spatial Database Specifications*. These files should also be provided on CD-ROM.
- Metadata files describing the DFIRM data. These files will include the required information and follow the examples shown in FEMA's DFIRM Specifications.
- A complete set of plots of the DFIRM panels showing all detail at the scale(s) approved under the first milestone.
- A Quality Assurance/Quality Control (QA/QC) report that includes a description and the results of all automated or manual quality assurance steps taken during the preparation of the DFIRMs.

6. Schedule and Milestones:

Milestone 1, Planning Phase (6-30-04 to 7-31-04) : Products for the first milestone to be provided to the FEMA Project Officer include:

- A description of the proposed DFIRM base map including digital base map information checklist.
- A diagram showing the proposed DFIRM panel layout for the new panels that includes the community and/or county boundary(s) and scale of all panels.
- A copy of the current FIRM index.
- A QA/QC report.

Milestone 2, Pilot Data Review (7-31-04 to 9-30-04): Products for the second milestone to be provided to the FEMA Project Officer include:

- A set of digital files containing DFIRM data for one FIRM panel. The digital files will include the base map data as well as all FIRM information converted to DFIRM format.
- The mapping files will be accompanied by the appropriate DFIRM database tables described in FEMA's *Standard DFIRM Spatial Database Specifications*.
- Metadata files describing the DFIRM data.
- A plot of the DFIRM panel showing all detail at the scale approved under the first milestone. The plot should conform to the standards outlined in FEMA's DFIRM Specifications.
- QA/QC report.

Milestone 3, Final Products (10-1-04 to 12-31-04): Final products to be provided to the FEMA Project Officer include:

- A set of digital files containing all DFIRM data for the watershed defined in Section 1 of this Mapping Activity. The digital files will include the base map data as well as all FIRM information converted to DFIRM format.

- The mapping files will be accompanied by the appropriate DFIRM database tables described in FEMA's *Standard DFIRM Spatial Database Specifications*.
 - Metadata files describing the DFIRM data.
 - A complete set of plots of the DFIRM panels showing all detail at the scale(s) approved under the first milestone. The plots should conform to the standards outlined in FEMA's *DFIRM Graphic Specifications*.
 - QA/QC report.
7. **Certification:** WDNR is responsible for obtaining certifications on certain kinds of data used in the survey, modeling and mapping process. This includes a requirement that DFIRM metadata files include a description of the horizontal and vertical accuracy of the base map and floodplain information. Further guidance can be found Section 7 of the Consolidated Mapping Activity Statement which can be found at the following website:
www.fema.gov/fhm/dl_atemp.shtm.
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 included 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 4 of this Mapping Activity Statement conform to standards outlined under Section 3 of this Mapping Activity Statement. Additionally, an independent review for compliance with these standards will be undertaken by WDNR.

Procedures used for the independent review may include a mixture of manual and automated QA/QC procedures and will address the following:

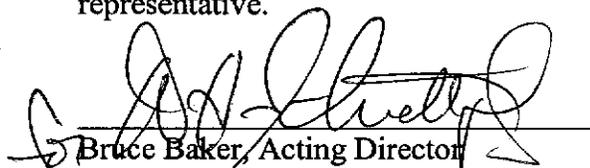
- a. Comprehensive data capture of all required DFIRM features without distortion (other than that resulting from the addition of horizontal control and/or edgematching);
- b. Topological fidelity of the DFIRM files, including assurance that the files contain no overshoots or dangles, gaps, node errors, label errors, or pseudo nodes and assurance that all area features are closed;
- c. FEMA's horizontal and vertical accuracy requirements for DFIRMs;

- d. Resolution of all discrepancies in edge-matching hard-copy and community-based panels, including the resolution of graphical and engineering (base flood elevations and floodway) data;
- e. Comprehensive data capture of all required DFIRM database features, including the conduct of logical data encoding checks to assure consistency within the DFIRM database (e.g., features shall be correctly located in range and domain specified for the feature type); and
- f. Legible hardcopy DFIRM plotted at the scale(s) agreed upon after the first milestone of this MAS.

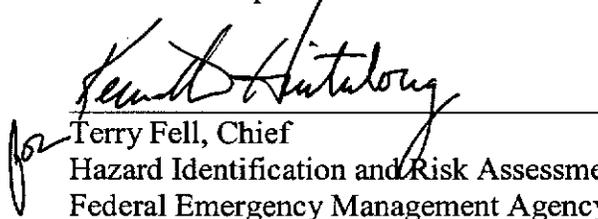
11. Reporting: Reporting requirements will be in accordance with Cooperative Agreement Articles V & VI. WDNR shall work with the FEMA Project Officer to establish an acceptable protocol for entry of project information into the Monitoring of Contracted Studies (MICS) database at the beginning of each 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>.

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