



**CITY OF MANDEVILLE**  
**Federal Emergency Management Agency**  
**Cooperating Technical Community**  
**Mapping Activity Statement #2 of 2**

**Agreement #CTC-02 – The Mandeville DFIRM Project**

In accordance with the Cooperating Technical Community (CTC) Memorandum of Agreement dated June 5, 2000 between the City of Mandeville and the Federal Emergency Management Agency (FEMA), Agreement #CTC-02 is as follows:

**1. Objective and Scope:**

The objective of this Mapping Activity is the conversion of effective Flood Insurance Rate Maps (FIRMs) and Flood Boundary Floodway Maps (FBFMs) to a digital format that conforms with FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications for the City of Mandeville in St. Tammany Parish, Louisiana.

The Cooperating Technical Community (CTC) program is a new program for both parties (The City of Mandeville and FEMA), an incremental approach is proposed for the DFIRM conversion project. The objective of this CTC project is to perfect the DFIRM process and to establish production procedures. The results learned from this effort would then be applied, under a separate agreement, to the larger area encompassing the St. Tammany Parish area in southeast Louisiana.

The scope of this agreement includes the production of a set of DFIRM map panels for Mandeville, Louisiana a city in St. Tammany Parish along the central north shore of Lake Pontchartrain in southeast Louisiana. The Community Panel numbers to be produced include: 220202 0001 C and 220202 0002 C. Other impacted areas should be added, as required, to represent current streets and annexed areas.

The City of Mandeville was selected because the area has experienced a significant increase in growth, since the maps were last updated in 1983. This growth has resulted from the annexation of adjacent land, in an effort to provide more contiguous City Limit boundaries. This growth in population has also resulted in Mandeville being recognized as a City, rather than a Town, in 1985. Hydrologic or hydraulic engineering analysis is not planned under this task agreement.

The scope of this agreement, CTC-02, will include the collection, preparation, evaluation, and correction of graphic data which may or may not include: AutoCAD maps and data, ArcView data, drainage studies, geographical referencing, survey information, and other relevant data pertinent to the digital mapping activity

**2. Period of Performance:**

This Mapping Activity will begin on October 1, 2000 and end no later than September 30, 2001. This CTC Agreement may be terminated at the option of FEMA or the City of Mandeville, in accordance with the provisions of the CTC Memorandum of Agreement dated June 5, 2000.

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

FEMA expects to be able to provide approximately \_\_\_\_\_ to the City of Mandeville under this CTC agreement and mapping activity. The City of Mandeville expects to provide a 25% match or \_\_\_\_\_ for staff contribution under this CTC agreement and mapping activity. The period of performance will be in accordance with Agreement Article II.

**4. Standards:**

The DFIRMs will be created using the version, in effect during the period of this agreement, of the following standards and documents:

- *Guidelines and Specifications for Study Contractors (FEMA 37)* available via the Internet at [http://www.fema.gov/mit/tsd/EN\\_req.htm](http://www.fema.gov/mit/tsd/EN_req.htm).

- *Guidelines and Specifications for Flood Map Production Coordination Contractors (Draft February 17, 1999)*

- *Base Map Standards for DFIRMs (FEMA)*. This document provides minimum base map standards for DFIRMs. These include the following requirements for DFIRM base map data:

- ~ Cover the community;
- ~ Be distributed by FEMA to the public;
- ~ Meet the minimum accuracy requirements outlined in the document; and
- ~ Include all required features.

- *Digital Flood Insurance Rate Map (DFIRM) Specifications*. (FEMA is in the process of developing specifications for its new DFIRM product. Once those specifications are complete, they will apply to this CTC Agreement). This document will provide information about graphic specifications for hardcopy DFIRM products as well as minimum standards for the DFIRM database that accompanies the mapping files, file formats, transfer media, etc. The "Basic DFIRM" tables and items in the DFIRM database apply; optional table and items are not required.

- *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:**

The City of Mandeville shall make the following products available:

DFIRM mapping files, which conform to the format specified in FEMA specification: *Digital Insurance Rate Map*. All files will be delivered on CD-ROM.

Metadata Files. Metadata files describing the DFIRM data will be provided. The files will include the required information and follow examples shown in FEMA's *Digital Flood Insurance Rate Map (DFIRM) Specifications*.

DFIRM Panel Plots. A complete set of panel plots of the DFIRM maps will be provided, which show all detail at the scales approved. Acceptable DFIRM scales are 1" = 500', 1" = 1000', and 1" = 2000'.

Summary Report. A report documenting the procedures and results of all automated and manual quality assurance steps taken during the production of the DFIRM will be provided.

**6. Schedule and Milestones:**

The estimated completion of this project is within 12 months of our Contract start date. With an October 1, 2000 contract start date, the projected completion will be September 30, 2001. However, with the DFIRM procedure being a new method of processing a review of the project should be made during February 2001. As part of this review, a decision would be made to determine if a time period in excess of the projected 12 months is realistically needed to complete the final product.

In order to monitor project progress, a series of Milestones are planned:

**Milestone 1: DFIRM Base Map and Panel Layout**

Deliverables for Milestone 1 will be submitted within 60 days of the approval of flood zones in Agreement CTC-01 but no later than 10 months after project start date.

**Milestone 2: DFIRM Prototype Panel**

Deliverables for Milestone 2 will be submitted within 90 days of the approval of flood zones in Agreement CTC-01 but no later than 11 months after project start date.

**Milestone 3: DFIRM Final Production**

Deliverables for Milestone 2 will be submitted within 150 days of the approval of flood zones in Agreement CTC-01 but no later than 12 months after project start date.

Each milestone will contain a set of digital files containing DFIRM data, base map data and all FIRM information converted to DFIRM format. All mapping files will be accompanied by the appropriate DFIRM database tables described in FEMA's *Digital Flood Insurance Rate Map (DFIRM) Specifications*. Metadata files describing the DFIRM data will be provided. A complete set of plots of the DFIRM panels showing all details at the scale(s) approved under the first milestone will also be provided.

**7. Certification:**

Hassan S. Mashriqui of Louisiana State University, is a research associate for the Center for Coastal, Energy, and Environmental Resources and a registered Civil Engineer. Hassan S. Mashriqui will certify the accuracy of the new flood zones.

**8. Technical Assistance and Resources:**

FEMA will provide the City of Mandeville with copies of FEMA-issued Letters of Map Change (LOMC), archived engineering backup data and data collected as part of the Five-Year Mapping Needs Assessment from FEMA's Mapping Coordination Contractor (MCC). The MCC may be contacted at 1-877-FEMA-MAP.

General technical and programmatic information can be downloaded from FEMA's Flood Hazard Mapping web site ([www.fema.gov/mit/tsd/](http://www.fema.gov/mit/tsd/)). Specific technical and programmatic support may be provided through FEMA's MCC; such assistance should be requested through FEMA Project Officer specified in Section 12 of this agreement and may include:

- preparation of a DFIRM panel layout and panel grid in electronic format;
- example DFIRM mapping and database files;
- technical assistance in the form of training and technical guidance; and
- DFIRM production tools, software, cell libraries, automated QA/QC tools, etc., that FEMA has developed for its own use.

**9. Subcontractors:**

The City of Mandeville will subcontract portions of the work to the City's engineering consulting firm Meyer Engineers, Ltd. of Metairie, Louisiana. Meyer Engineers has been working with the City of Mandeville's Public Works Department since 1993. They are presently administering a Water Improvements Program for the City, which focuses on Mandeville's water distribution system.

In addition, the City of Mandeville will also subcontract portions of the work to Louisiana State University's Institute for Environmental Studies (IES). Associate Professor John C. Pine, Ed.D. will serve as the IES principal investigator. Dr. Pine,

whose research interests include GIS applications in emergency management, is presently involved with a similar and more extensive CTC project encompassing the Amite River Basin Drainage and Water Conservation District.

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:** The electronic summary data files shall be checked against the source data to verify accuracy of data entry prior to submission to FEMA. The procedures used may include a mixture of manual and automated QA/QC procedures, as follows:

- Complete data capture of all required DFIRM features will be assured.
- Data capture without distortion (other than that resulting from the addition of horizontal control and/or edgematching) will be assured.
- Topological fidelity of the DFIRM files will be assured. This includes 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.
- FEMA's horizontal and vertical accuracy requirements for DFIRMs will be met. All internal edgematching between panels will be resolved.
- Complete data capture of all required DFIRM database features will be assured. In addition, logical data encoding checks should be performed to assure consistency within the DFIRM database. For example, feature attributes will fall within the specified range and domain for that feature type.
- Hardcopy DFIRM will be legible and plotted at the scale(s) agreed upon after the first milestone of this Mapping Activity.

The review of output will be conducted by Meyer Engineers, Ltd. and Louisiana State University in conjunction with the City of Mandeville administration.

**11. Reporting:**

*{For FEMA Funded Agreements}* Reporting requirements will be in accordance with Agreement Articles V & VI.

**12. Points of Contact:**

The FEMA Project Officer is Gary Zimmerer and the City of Mandeville's Project Manager is Wayne Berggren, or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities.

Each part has caused this Task Agreement to be executed by its duly authorized representatives.

Way Benz  
CTC Partner's authorized representative

9-5-00  
date

Cary J. Zimmerman  
FEMA authorized representative

9-6-00  
date