



**City of Corsicana, Navarro County, Texas
Cooperating Technical Partner
Mapping Activity Statement**

Agreement No. 3 – Digital FIRM Preparation

In accordance with the Cooperating Technical Partner (CTP) Memorandum of Agreement dated August 3, 2001, between, Navarro County, Texas and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement No. 3 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 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 2 FIRM and 2 FBFM panels for the community of the City of Corsicana. Revisions to the FIRM and/or FBFM made through FEMA Letters of Map Change (LOMCs) issued since January 1979 will also be incorporated into the DFIRM.

Period of Performance: This Mapping Activity will begin on October 1, 2001 and will be completed no later than September 30, 2002. This Mapping Activity may be terminated at the option of FEMA or the City of Corsicana in accordance with the provisions of the August 3, 2001, CTP Memorandum of Agreement.

The period of performance will be in accordance with Agreement Article II.

- 2. Funding/Cost-Sharing:** The City of Corsicana "in-kind" contribution to Mapping Activity Statement No. 3 includes technical data prepared for development of the City of Corsicana Flood Protection Planning Study, dated May 2001 including: Aerial topographic mapping (digital 2-ft. contour interval), HEC-HMS hydrologic modeling for existing and future fully urbanized watershed conditions for the 10-, 50-, 100-, and 500-year flood frequencies, HEC-RAS hydraulic models, and digital topography with hydraulic cross sections and future fully urbanized 100-year flood plain delineations.

FEMA funding will be utilized to develop digital DFIRM maps.

A summary of funding/cost sharing is provided in Attachment "B"

- 3. Standards:** The following documents are relevant to the creation of DFIRMs and this Mapping Activity:
- *Guidelines and Specifications for Study Contractors (FEMA 37).*
 - *Guidelines and Specifications for Flood Map Production Coordination Contractors (Draft February 17, 1999).*
 - *Base Map Standards for DFIRMs (FEMA).* The minimum base map standards for DFIRMs include the following requirements for DFIRM base map data:
 - cover the community(s) or county(s) completely;
 - be distributable by FEMA to the public;
 - meet the minimum accuracy requirements outlined in the document; and

- Include all required features.
- *DFIRM Graphic Specifications* (FEMA, Draft November 2000), and *Standard DFIRM Spatial Database Specifications* (FEMA, Draft May 2000).
- *Standards for Digital Orthophotos* (U.S. Geological Survey, National Mapping Program, December 1996).
- *Content Standards for Digital Geospatial Metadata* (Federal Geographic Data Committee, 1998).

4. Products: The City of Corsicana 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 Graphic 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 *Standard DFIRM Spatial Database Specifications*.
- A complete set of plots of the DFIRM panels showing all detail at the scale(s) approved under the first milestone. Acceptable DFIRM scales are 1"=500', 1"=1000', and 1"=2000'. Plots should conform to FEMA's *DFIRM Graphic Specifications*.
- 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.

5. Schedule and Milestones:

Milestone 1: 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 (available in FEMA 37);
- 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; and
- QA/QC report.

Milestone 2: Final products 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 Graphic Specifications*.
- QA/QC report.

Milestone 3 (Final Products): Final products to be provided to the FEMA Project Officer include:

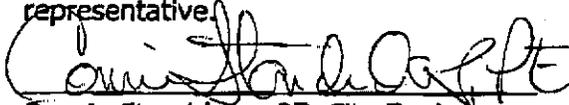
- A set of digital files containing all DFIRM data for the entire community(s) and/or county(s) defined in Section 1 of this Mapping Activity. The digital files will include the base map data as well as all FIRM information converted to DFIRM format.
 - The mapping files will be accompanied by the appropriate 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.
- 6. Certification:** The DFIRM metadata files will include a description of the horizontal and vertical accuracy of the DFIRM base map and floodplain information.
- 7. Technical Assistance and Resources:** The City of Corsicana will obtain copies of FEMA-issued Letters of Map Change (LOMCs), archived engineering back-up data, and data collected as part of the Mapping Needs Assessment Process from FEMA's Mapping Coordination Contractor (MCC). Specific technical and programmatic support may be provided through FEMA's MCC; such assistance should be requested through the FEMA Project Officer specified in Section 12 of this Mapping Activity Statement and may include:
- Preparation of a DFIRM panel layout and panel grid in digital format;
 - Sample 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.
- 8. Contractors:** The Services of Halff Associates, Inc. will be utilized to complete this Mapping Activity Statement. Procurement of subcontractors using Federal funds provided as part of this Mapping Activity will comply with the requirements of 44 CFR 13.36.
- 9. Quality Assurance/Quality Control (QA/QC) Procedures:** The City of Corsicana 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 PBS&J. The procedures used for the independent review may include a mixture of manual and automated QA/QC procedures and will concern the following:
- 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 problems with internal edgematching between panels will be resolved. If this Mapping Activity covers more than one community, any problems with edgematching between contiguous communities will also be resolved. This includes both "graphical" mismatches as well as mismatches in engineering data portrayed on the DFIRM (e.g., floodplain widths, base flood elevations, etc.).
- 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.

Reporting: Reporting requirements will be in accordance with Agreement Articles V & VI.

Points of Contact: The FEMA Regional Project Officer is Jack Quarles, PE, and the CTP Project Manager is Connie Standridge, PE, City Engineer or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. If it is necessary, the assistance of FEMA's MCC should be requested through the FEMA Regional Project Officer, Jack Quarles, PE.

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



Connie Standridge, PE, City Engineer
City of Corsicana, Texas

9/13/01
Date



Jack Quarles
Regional Project Officer
Federal Emergency Management Agency

9-13-01
Date