



## DuPage County Cooperating Technical Partner Mapping Activity Statement

### **Task Agreement 03:02 - Hydrologic and Hydraulic Analyses and Floodplain Mapping**

In accordance with the Cooperating Technical Partner (CTP) Memorandum of Agreement dated June 8, 1999, between DuPage County, Illinois and the Federal Emergency Management Agency (FEMA), Mapping Activity Task Agreement 03:02 is as follows:

- 1. Statement Objective and Scope:** The objective of this Mapping Activity is to develop detailed hydrologic and hydraulic analyses and floodplain and floodway mapping in the Steeple Run Tributary of the West Branch of the DuPage River and the Springbrook Number 1 Tributary of Salt Creek. Hydrologic analyses will be completed for approximately 2.74 square miles of drainage area, and hydraulic analyses and floodplain mapping will be completed for approximately 5.65 linear miles of flooding for the Steeple Run Tributary and hydrologic analyses will be completed for approximately 14.68 square miles of drainage area, and hydraulic analyses and floodplain mapping will be completed for approximately 12.94 linear miles of flooding for the Springbrook Number 1 Tributary.

The hydrologic methods used for this analysis will be the Hydrologic Simulation Program – Fortran (HSPF) Program. Peak flood discharges will be calculated for the 50%, 25%, 10%, 2%, 1%, and 0.2% annual chance storm events.

The hydraulic methods used for this analysis will include FEQ. The hydraulic analysis will be used to establish flood elevations and regulatory floodways for the subject flooding source(s).

The mapping will incorporate all revised hydraulic modeling and newly acquired topographic information. DuPage County will delineate the floodplain boundaries for the 1% and 0.2% recurrence intervals and the regulatory floodway on a digital work map based on existing topography or new topographic data developed. DuPage County will incorporate the results of all effective Letters of Map Change as appropriate.

GIS-based hydrologic and hydraulic modeling and mapping techniques will be applied to develop GIS data sets in support of the automation or semi-automation of modeling and floodplain mapping.

- 2. Period of Performance:** The mapping activities outlined in this MAS will begin on September 9, 2003 and will be completed no later than December 15, 2004. The Mapping Activities may be terminated at the option of FEMA or DuPage County in accordance with the provisions of the June 8, 1999 CTP Partnership Agreement.

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

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### 3. Funding/Cost-Sharing:

### 4. Standards: The following standards and documents are relevant to this Mapping Activity:

- 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)
- 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).
- Topographic mapping used to delineate floodplains and floodways will be of adequate scale and topographic definition to provide reasonable accuracy. Planimetric features will be compatible with the base map (with respect to horizontal accuracy) selected by FEMA for Digital FIRM production. Topographic mapping taken from aerial photogrammetry or surveys will comply with the requirements of Appendix A of *Guidelines and Specifications for Flood Hazard Mapping Partners*, February 2002. Appendix A can be found at [www.fema.gov/mit/tsd/dl\\_cgs.htm](http://www.fema.gov/mit/tsd/dl_cgs.htm).
- The floodway will be established in accordance with *Guidelines and Specifications for Flood Hazard Mapping Partners*, February 2002, and any applicable state and/or community requirements.
- Map revision data incorporated on a per-project basis for fill placement, channel modifications, levees or bridge/culvert placement will comply with Subpart 65 of Title 44 CFR.

### 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.
- 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.

## 6. Schedule and Milestones:

**Milestone 1 (Scoping Phase):** Products for the first milestone to be provided to the FEMA Project Officer include:

- Annotated copies of effective FIRMs depicting limits of proposed study.
- Documentation of the proposed source of topographic data, scale, contour interval, source/methodology, date of survey/data collection, vertical and horizontal datum's, and comparison of planimetric features with the DFIRM base map selected by FEMA for DFIRM production.
- A written summary of the initial data research, proposed analysis methodologies, and a work plan.
- Copies of topographic maps depicting proposed cross section locations.

**Milestone 2 (Hydrology Phase):** Products for the second milestone to be provided to the FEMA Project Officer include draft hydrologic analyses in accordance with the TSDN format.

**Milestone 3 (Hydraulics Phase):** Products for the third milestone to be provided to the FEMA Project Officer include the hydraulic models and sample floodplain mapping in accordance with TSDN format.

**Milestone 4 (Final Products):** Final products to be provided to the FEMA Project Officer include:

- The completed TSDN and accompanying data containing the information outlined in Section 5 of this Mapping Activity Statement.
- A QA/QC report documenting the results of the independent review of all computational and data processing procedures.

Final products will be made available in accordance with the Period of Performance described in Section 2 of this Mapping Activity Statement.

## 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: DuPage County may 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). The MCC may be contacted at 1-877 FEMA MAP (1-877-

336-2627). 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 the FEMA MCC Project Officer specified in Section 12 of this Mapping Activity Statement.

**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:** DuPage County will undertake internal QC reviews to ensure that the products described under Section 5 of this Mapping Activity Statement conform to the standards outlined under Section 4 of this Mapping Activity Statement. Additionally, an independent review for compliance with these standards will be undertaken by FEMA's Map Coordination Contractor or others approved by the FEMA Project Officer and the CTP Project Manager.

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

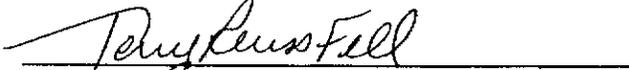
**11. Points of Contact:** The FEMA Regional Project Officer is Kenneth Hinterlong, and the CTP Project Manager is J. William Brown or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. If it is necessary, the assistance of FEMA's MCC should be requested through the FEMA MCC Project Officer.

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



Anthony J. Charlton  
Director Development & Environmental Concerns  
DuPage County

8/19/03  
Date



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

9-18-03  
Date

August 19, 2003

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