



Dakota County, Minnesota COOPERATING TECHNICAL PARTNERS MAPPING ACTIVITY STATEMENT

Mapping Activity Statement No. 2005-01 – Digital Flood Insurance Rate Map Production and Development of Updated Flood Data

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated July 30, 2003 between Dakota County, Minnesota and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement (MAS) No. 2005-01 is as follows.

SECTION 1—OBJECTIVE AND SCOPE

The objective of the Flood Map Project documented in this MAS is to develop a Digital Flood Insurance Rate Map (DFIRM) and Flood Insurance Study (FIS) report for Dakota County, Minnesota. The DFIRM and FIS report will be produced in the FEMA County-wide Format. This product will be in NAVD88.

In addition the Mapping Partners involved in this project will develop new and/or updated flood hazard data, as summarized in the table below.

Table 1-1

Flooding Source	Reach Limits & Length	Detailed Hydrologic Analyses	Detailed Hydraulic Analyses	Limited Detail Study	Refinement or Creation of Zone A	Coastal Analysis	Floodplain Mapping	Redelineation Using Effective Flood Profiles and Updated Topographic Data
Trout Brook and Tributaries	30 miles	15 miles	15 miles	15 miles			X	
Cannon River	8 miles	-	8 miles				X	

This Flood Map Project will be completed by the following

- Dakota County, Minnesota
- CTP Contractor
- FEMA

The CTP shall notify FEMA and the NSP by e-mail of all meetings with community officials at least one week prior to the meeting (with as much notice as possible). FEMA and/or the NSP may or may not attend the community meetings.

The activities for this Flood Map Project, including required Quality Assurance/Quality Control (QA/QC) reviews, and the Mapping Partners that will complete them are summarized in the table below. The sections of this MAS that follow the table below describe the specific activities, responsible Mapping Partner(s), FEMA standards that must be met, and resultant map components.

Table 1-2

Activities	CTP	FEMA
Activity 1 – Scoping	-	
Activity 2 - Outreach	X	X
Activity 3 – Field Surveys and Reconnaissance	X	
Activity 6 –Hydrologic Analyses	X	X
Activity 7–Independent QA/QC Review of Hydrologic Analyses		X
Activity 8 – Hydraulic Analyses	X	X
Activity 9 – Independent QA/QC Review of Hydraulic Analyses	X	X
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	X	
Activity 11 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)		X

FEMA has developed tools to assist in the development of the flood hazard data studies and the Digital Flood Insurance Rate Maps (DFIRMs) if the CTP wishes to use them. FEMA will, through the NSP, provide all CTPs access to and training in these tools. The tools available at this time include WISE software and the DFIRM production tools. The use of these tools will improve the Map Modernization and efficiency of all mapping partners.

If the CTP chooses not to use these production tools, then the CTP will be required to submit intermediate project data at major milestones in each Mapping Project in accordance with data capture standards. Submitting data in these standards will aid in more efficient quality control reviews, data storage, archiving, and for future study updates.

The Data Capture Standard submittals will be required at the following study milestones:

- Project Scoping (as specified)
- Field Survey Completed
- Hydrology Completed (draft and final)
- Hydraulics Completed (draft and final)

- DFIRM Mapping (draft and preliminary)

QA/QC review activities may be performed by CTPs or the NSP at the discretion of FEMA. Please note the NSP will also be performing periodic audits and overall study/project management to ensure study quality.

FEMA will be providing download/upload capability for intermediate data submittals through the Management Information Portal (MIP). Data submittals uploaded via the MIP will include the same data required prior to the existence of the MIP.

Activity 1 – Scoping

Responsible Mapping Partner: Dakota County, Minnesota.

Scope: This task involves collecting data from a variety of sources including community surveys, other Federal and State Agencies, NFIP State Coordinators, Community Assistance Visits (CAV's) and FEMA archives. Dakota County, Minnesota will evaluate the effective FIS report and FIRM maps to see if it needs to be updated. Lists of mapping needs will be obtained from the MNUSS database, community surveys and CAV's if available. The scoping for this Mapping Activity Statement was completed in MAS 2003-02.

Activity 2 – Outreach

Responsible Mapping Partner: Dakota County, Minnesota and FEMA.

Scope: The outreach activities for a Flood Map Project can best be understood as a process that begins during the Project Scoping phase and continues through the Map Production and Post-preliminary phases. A regulatory overview of required activities is followed by a description of tools that can be used in working with stakeholders to keep them informed and to solicit their input.

The overarching goal for conducting outreach is to create a climate of understanding and ownership of the mapping process at the State and local levels. Well-planned outreach activities can reduce political stress, confrontation in the media, and public controversy, which can arise from lack of information, misunderstanding, or misinformation. These outreach activities also can assist FEMA and other members of the Project Team in responding to congressional inquiries.

By proactively reaching out to all key stakeholders as early in the Flood Map Project as possible, the maps can be used to their full potential. The likelihood of appeals may also be reduced or eliminated. Specific Contractor activities shall include, but are not limited to -

- Establishing two-way communication to address the needs of, inform and obtain feedback from, the stakeholders;
- Ensuring compliance with due process requirements;
- Interacting with technical representatives to ensure production of accurate and up-to-date maps;
- Enhancing ownership by communities

Tracking, monitoring, and evaluating outreach activities and adjusting efforts according to ongoing feedback and evolving project needs.

All communication with local governments will be done in accordance with Title 44 Code of Federal Regulations Part 66.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon Completion of Outreach and Coordination the Contractor shall deliver the following to the FEMA Regional Project Officer in accordance with the schedule outlined in Section 6 for this Activity:

- A memo detailing outreach and coordination activities

Activity 3 - Field Surveys and Reconnaissance

Responsible Mapping Partner: Dakota County, Minnesota.

Scope: To supplement any field reconnaissance conducted during the Project Scoping phase of this project, Dakota County, Minnesota shall conduct a detailed field reconnaissance of the specific study area to determine conditions along the floodplain(s), types and numbers of hydraulic and/or flood-control structures, apparent maintenance or lack thereof of existing hydraulic structures, locations of cross sections to be surveyed, and other parameters needed for the hydrologic and hydraulic analyses.

In addition to the initial field reconnaissance, Dakota County, Minnesota shall conduct field surveys, including obtaining channel and floodplain cross sections, identifying or establishing Temporary Bench Marks, and obtaining the physical dimensions of hydraulic and flood-control structures. Dakota County, Minnesota also shall coordinate with other Mapping Partners that are collecting topographic data under Activity 4.

Standards: All work under Activity 3 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Dakota County, Minnesota shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A report summarizing the findings of the field reconnaissance;
- Maps and drawings that provide the detailed survey results; and
- Survey notebook containing cross sections and structural data.
- NSP Format Survey Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards Appendix N of the Guidelines and Specifications for Flood Mapping Partners .

Activity 6 – Hydrologic Analyses

Responsible Mapping Partner: CTP Contractor and FEMA.

Scope: CTP Contractor shall perform hydrologic analyses for approximately 15 linear miles of flooding source(s) listed in Section 1. The CTP Contractor shall calculate peak flood discharge for the 10-, 2-, 1- and 0.2 percent annual chance storm events using an acceptable FEMA hydrologic computer program for detailed reaches of Trout Brook and its tributaries. These flood discharges will be the basis for subsequent hydraulic analyses under Activity 8. In addition, the CTP Contractor shall address all concerns or questions regarding Activity 6 that are raised during the independent QA/QC review performed by the Minnesota Interagency Hydrology Review Committee during the QA/QC review under Activity 7.

If Geographic Information System (GIS)-based modeling is used, for Trout Brook and its tributaries, the CTP Contractor shall document automated data processing and modeling algorithms and provide them to FEMA to ensure they are consistent with the standards outlined above. Digital datasets were developed as part of an earlier Mapping Activity Statement and exceed FEMA’s minimum requirements. If non-commercial (i.e., custom-developed) software is used for the analysis, then the CTP Contractor shall provide full user documentation, technical algorithm documentation, and the software to FEMA for review before performing the hydrologic analyses.

FEMA’s IDIQ contractor will supply a hydrologic analysis for the Cannon River.

Standards: All work under Activity 6 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: The CTP contractor shall submit a memorandum outlining in detail the procedures, assumptions and data sources for the hydrologic analysis to the Minnesota Interagency Review Committee. They shall incorporate comments from the Review Committee into their procedures.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, the CTP Contractor shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital copies of all hydrologic modeling (input and output) files for the 10-, 2-, 1-, and 0.2-percent-annual-chance storm events;
- Digital and hardcopy versions of the Summary of Discharges Table presenting discharge data for the flooding sources for which hydrologic analyses were performed;

- Digital and hardcopy versions of draft text for Section 3.1, Hydrologic Analyses, of the FIS report; and
- Digital and hardcopy versions of all backup data used in the analysis, including work maps.
- NSP Format Hydrology Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners
- After resolution of QA/QC comments the CTP Contractor shall upload the information to FEMA’s Multihazard Information Platform (MIP), which can be found at <http://www.hazards.fema.gov>

For GIS-based modeling, deliverables shall include all input and output data, intermediate data processing products, and GIS data layers.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 7 - Independent QA/QC Review of Hydrologic Analyses

Responsible Mapping Partner: Minnesota Interagency Hydrology Review Committee.

Scope: Minnesota Interagency Hydrology Review Committee shall review the technical, scientific, and other information submitted by the CTP Contractor under Activity 6 to ensure that the data and modeling are consistent with FEMA standards and standard engineering practice and are sufficient to prepare the DFIRM. This work shall include, at a minimum, the activities listed below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review is to focus on the following:
 - Use of acceptable models;
 - Use of appropriate methodology(ies);
 - Correctly applied methodology(ies)/model(s), including QC of input parameters;
 - Comparison with gage data and/or regression equations, if appropriate; and
 - Comparison with discharges for contiguous reaches or flooding sources.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydrologic modeling review. (All supporting data must be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.)

Standards: All work under Activity 7 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Minnesota Interagency Hydrology Review Committee shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A letter describes the findings of the independent QA/QC review and
- Recommendations to resolve any problems that are identified during the independent QA/QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 8 – Hydraulic Analyses

Responsible Mapping Partner: The CTP Contractor.

Scope: CTP Contractor shall perform a detailed hydraulic analyses for approximately 23 miles of the flooding sources listed in Section 1 (Cannon River and Trout Brook and its tributaries). The modeling will include the 10-, 2-, 1-, and 0.2-percent-annual-chance events based on peak discharges computed under Activity 6. The hydraulic methods used for this analysis will include HEC-RAS.

The CTP Contractor shall use the cross-section and field data collected under Activity 3 to perform the hydraulic analyses. The hydraulic analyses will be used to establish flood elevations and regulatory floodways for the subject flooding sources.

The CTP Contractor shall use the FEMA CHECK-2 or CHECK-RAS checking program to check the reasonableness of the hydraulic analyses. To facilitate the independent QA/QC review under Activity 9, the CTP Contractor shall provide explanations for unresolved messages from the CHECK-2 or CHECK-RAS program, as appropriate. In addition, the CTP Contractor shall address all concerns or questions regarding Activity 6 that are raised by FEMA during the independent QA/QC review under Activity 9.

The CTP Contractor shall perform hydraulic analysis for approximately 15 miles of Trout Brook and its tributaries within the boundaries of the Dakota County Miesville Ravine Park Reserve using limited detail study procedures. The modeling will include the 1-, percent-annual-chance events based on peak discharges computed under Activity 6. The hydraulic methods used for this analysis will include HEC-RAS.

The CTP Contractor shall document automated data processing and modeling algorithms for GIS-based modeling and provide them to FEMA for review to ensure they are consistent with the standards outlined above. Digital datasets are to be documented and provided to FEMA for approval before performing the hydraulic analyses to ensure the datasets meet minimum requirements. If non-commercial (i.e., custom-developed) software is used for the analyses, then the CTP Contractor shall provide full user documentation, technical algorithm documentation, and software to FEMA for review before performing the hydraulic analyses.

Standards: All work under Activity 8 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of hydraulic modeling for the Cannon River and Trout Brook and its tributaries, the CTP Contractor shall submit the results to FEMA for an independent QA/QC review under Activity 9. The CTP Contractor shall submit the results of the hydraulic analyses for the remaining flooding sources for a final QA/QC review at the completion of this activity.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, the CTP Contractor shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital profiles of the 10-, 2-, 1- and 0.2-percent-annual-chance water-surface elevations representing existing conditions using the FEMA RASPLLOT program or similar software;
- Digital and hardcopy versions of the Floodway Data Table for each flooding source that is compatible with the DFIRM database;
- Digital and hardcopy versions of all hydraulic modeling (input and output) files;
- Digital and hardcopy versions of table with range of Manning's "n" values;
- Explanations for unresolved messages from the CHECK-2 or CHECK-RAS program, as appropriate;
- Digital and hardcopy versions of all backup data used in the analyses;
- Digital and hardcopy versions of draft text for inclusion in the FIS report.
- After resolution of QA/QC comments the CTP Contractor shall upload the information to FEMA's Multihazard Information Platform (MIP), which can be found at <http://www.hazards.fema.gov>

For GIS-based modeling, deliverables include all input and output data, intermediate data processing products, GIS data layers, and final products in the format of the DFIRM database structure.

- NSP Format Hydraulic Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 9 - Independent QA/QC Review of Hydraulic Analyses

Responsible Mapping Partner: FEMA and CTP

Scope: FEMA shall review the technical, scientific, and other information submitted by the CTP Contractor under Activity 8 to ensure that the data and modeling are consistent with FEMA standards and

standard engineering practice and are sufficient to revise the FIRM. This work shall include, at a minimum, the activities listed below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review is to focus on the following:
 - Use of acceptable model(s);
 - Starting water-surface elevations;
 - Cross-section geometry;
 - Manning's "n" values and expansion/contraction coefficients;
 - Bridge and culvert modeling;
 - Flood discharges;
 - Regulatory floodway computation methods; and
 - Tie-in to upstream and downstream non-revised Flood Profiles.
- Use the CHECK-2 or CHECK-RAS program as appropriate to flag potential problems and focus review efforts.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydraulic modeling review. (All supporting data must be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.)

Standards: All work under Activity 9 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, FEMA shall make the following products available to Dakota County, Minnesota in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary Report that describes the findings of the independent QA/QC review; and
- Recommendations to resolve any problems that are identified during the independent QA/QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/firm_gsam.pdf.

Activity 10 - Floodplain Mapping both Detailed and Limited Detail Riverine Analysis

Responsible Mapping Partner: CTP Contractor and Dakota County

Scope: The CTP Contractor shall delineate the 1- and 0.2-percent-annual-chance floodplain boundaries and the regulatory floodway boundaries (if required) for the flooding sources for which detailed hydrologic, and/or hydraulic, and/or coastal analyses were performed. The CTP Contractor shall incorporate all new or revised hydrologic, hydraulic, and/or coastal modeling and shall use the topographic data acquired under Activity 4 to delineate the floodplain and regulatory floodway boundaries on a digital work map. In addition, the CTP Contractor shall incorporate the results of all effective Letters of Map Change (LOMCs) within the revised areas as appropriate. Also, the CTP Contractor shall address all concerns or questions regarding Activity 10 that are raised by Dakota County, Minnesota during the independent QA/QC review under Activity 11.

Standards: All work under Activity 10 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of floodplain mapping for the Cannon River and Trout Brook and its tributaries, the CTP Contractor shall submit the results to Dakota County, Minnesota for completion of the DFIRM mapping. Dakota County will submit the preliminary map panels for an independent QA/QC review under Activity 11. The mapping for the remaining flooding sources is to be submitted for a final QA/QC review at the completion of this activity.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, the CTP Contractor shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, roads and the most up to date political boundaries and all applicable base map features per FEMA guidelines;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale;
- Complete set of flood profiles and floodway data tables for detailed study areas;
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM;
- Any backup or supplemental information used in the mapping required for the independent QA/QC review outlined under Activity 9; and

- An explanation for the use of existing topography for the studied reaches, if appropriate.
- NSP Format Mapping Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners.
- After resolution of QA/QC comments the CTP Contractor shall upload the information to FEMA’s Multihazard Information Platform (MIP), which can be found at <http://www.hazards.fema.gov>

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 11 - Independent QA/QC Review of Floodplain Mapping (Revised Areas)

Responsible Mapping Partner: FEMA

Scope: FEMA shall review the floodplain mapping submitted by Dakota County under Activities 10, to ensure that the results of the analyses performed are accurately represented. This work shall include, at a minimum, the activities listed below.

- Review the cross sections for proper location and orientation on the work map and agreement with the Floodway Data Table.
- Review the BFEs shown on the work map for proper location and agreement with the results of the hydraulic modeling.
- Review the regulatory floodway widths for agreement with the widths shown in the Floodway Data Table and the results of the hydraulic modeling.
- Review the floodplain boundaries for agreement with the flood elevations shown in the Floodway Data Table and the contour lines and other topographic information shown on the work maps.
- Review the floodplain widths at cross sections as shown on the work maps to ensure they match the Floodway Data Table.
- Review the floodplain boundaries as shown on the work maps to ensure they match the Flood Profiles.
- Review the flood insurance risk zones as shown on the work maps to ensure they are labeled properly.
- Review the DFIRM mapping files to ensure they were prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- Review the metadata files to ensure they include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 11 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, FEMA shall make the following products available to Dakota County, Minnesota in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary memo that describes the findings of the QA/QC review, noting any deficiencies in or agreeing with the mapping results;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- An annotated work map with all questions and/or concerns indicated, if necessary.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

SECTION 2—TECHNICAL AND ADMINISTRATIVE SUPPORT DATA SUBMITTAL

The Project Team members for this Flood Map Project that have responsibilities for activities included in this MAS shall comply with the data submittal requirements summarized below.

All supporting documentation for the activities in this Mapping Activity Statement shall be submitted in the TSDN format in accordance with Appendix M of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners*, dated April 2003. Appendix M is available for viewing or download on the FEMA Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf. Table 2-1 indicates the sections of the TSDN that apply to each mapping activity.

If any issues arise that could affect the completion of an activity within the proposed scope or budget, the responsible Mapping Partner shall complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submitted to FEMA. The SPR is to describe the issue and propose possible resolutions. (For additional information on SPRs, refer to Appendix M, Subsection M.2.1.1 of *Guidelines and Specifications for Flood Hazard Mapping Partners*.)

Table 2-1. Mapping Activities and Applicable TSDN Sections

TSDN Section									
	1	2	3	6	7	8	9	10	11
General Documentation									
Special Problem Reports	X	X	X	X	X	X	X	X	X
Telephone Conversation Reports	X	X	X	X	X	X	X	X	X
Meeting Minutes/Reports	X	X	X	X	X	X	X	X	X
General Correspondence	X	X	X	X	X	X	X	X	X
Engineering Analyses									
Hydrologic Analyses			X	X	X	X	X	X	X
Hydraulic Analyses			X	X	X	X	X	X	X
Key to Cross-Section Labeling			X	X	X	X	X	X	X
Key to Transect Labeling			X	X	X	X	X	X	X
Draft FIS Report				X	X	X	X		
Mapping Information	X	X						X	X
Miscellaneous Reference Information	X	X	X	X	X	X	X	X	X

SECTION 3—PERIOD OF PERFORMANCE

The mapping activities outlined in this MAS will begin on **June 1, 2005**, and will be completed no later than four months after receipt of Cannon River hydrology from FEMA. The mapping activities may be terminated at the option of FEMA or Dakota County, Minnesota in accordance with the provisions of the Partnership Agreement dated July 31, 2003. If these Mapping Activities are terminated; the remaining funds from uncompleted activities, provided by FEMA for this Mapping Activity Statement, will be returned to FEMA.

SECTION 4—FUNDING/LEVERAGE

FEMA is providing funding, in the amount of \$_____ to Dakota County, Minnesota for the completion of this Flood Map Project. Dakota County, Minnesota shall provide any additional resources required to complete the assigned activities for this Flood Map Project. Activities associated with any additional needs would be performed based on availability of additional funds. The CTP Leverage listed below includes in-kind services and blue book values for acquired information (i.e. base map data, hydrologic

and hydraulic analyses, etc.). More detailed leverage information will be determined during the detailed scoping process and reported back to FEMA at that time.

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%		\$	\$	%	\$
Activity 2	Outreach	%				%	
Activity 3	Field Surveys and Reconnaissance	%		\$		%	
Activity 4	Topographic Data Development	%		\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%		\$	\$	%	\$
Activity 6	Hydrologic Analyses	%			\$	%	
Activity 7	Independent QA/QC of Hydrologic Analyses	%		\$		%	
Activity 8	Hydraulic Analyses	%			\$	%	
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%		\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine)	%				%	
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	%		\$	\$	%	\$
TOTALS						%	

FEMA funds identified above are available to be used for the following activities:

Activities	FUNDABLE?
Activity 1 – Scoping	Yes, up to 10% of total cost
Activity 2 - Outreach	Yes, up to 10% of total cost
Activity 3 – Field Surveys and Reconnaissance	Yes
Activity 4 – Topographic Data Development	No, unless approval given during scoping phase by Regional PO
Activity 5 – Independent QA/QC Review of Topographic Data	No
Activity 6 –Hydrologic Analyses	Yes
Activity 6A –Coastal Flood Hazard Analyses	Yes
Activity 7–Independent QA/QC Review of Hydrologic Analyses	Yes
Activity 7A–Independent QA/QC Review of Coastal Hazard Analyses	Yes
Activity 8 – Hydraulic Analyses	Yes
Activity 9 – Independent QA/QC Review of Hydraulic Analyses	Yes
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Yes
Activity 10A – Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	Yes
Activity 10B – Floodplain Mapping (Refinement or Creation of Zone A)	Yes
Activity 11 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	Yes
Activity 12 – Base Map Acquisition	No
Activity 13 – DFIRM Production (Non-Revised Areas)	Yes
Activity 13A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	Yes
Activity 14 – DFIRM Production (Merge Revised and Non-Revised Information)	Yes
Activity 14A – Application of DFIRM Graphic and Database Specifications	Yes
Activity 14A – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphic and Database Specifications	Yes
Activity 15 – Preliminary DFIRM and FIS Report Distribution	Yes
Activity 16 – Post-Preliminary Processing	Yes

SECTION 5—STANDARDS

The standards relevant to this Mapping Activity Statement are provided in Tables 5-1 and 5-2. Information on the correct volume, appendix, section, or subsection of the FEMA *Guidelines and*

Specifications for Flood Hazard Mapping Partners to be referenced for each mapping activity are summarized in Table 5-2.

These Guidelines are available for viewing or download from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/fhm/dl_cgs.shtm.

Table 5-1. Applicable Standards for Project Activities

Applicable Standards	1	2	3	6	7	8	9	10	11
<i>Guidelines and Specifications for Flood Hazard Mapping Partners</i> , April 2003	X	X	X	X	X	X	X	X	X
American Congress on Surveying and Mapping Procedures	X		X						
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-510), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	X		X						
Engineer Manual 1110-1-1000, <i>Photogrammetric Mapping</i> (USACE), July 1, 2002	X		X						
Engineer Manual 1110-2-1003, <i>Hydrographic Surveys</i> (USACE), January 1, 2002	X		X						
"Numerical Models Accepted by FEMA for NFIP Usage," Updated April 2003	X			X	X	X	X		
<i>Content Standard for Digital Geospatial Metadata</i> (Federal Geographic Data Committee), 1998	X	X						X	X
<i>Document Control Procedures Manual</i> , December 2000	X	X							
<i>44 Code of Federal Regulations Part 66 and 67</i>		X							

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
1	Scoping	Appendix I and N, Scoping Report document attached in Appendix A to this Mapping Activity Statement
2	Outreach	44 Code of Federal Regulations Part 66 and 67
3	Field Surveys and Reconnaissance	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.4, A.5, A.6, A.7, and A.8 Appendix F, Section F.3 Appendices B, C, M and N
6	Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 Appendix C, Sections C.1 and C.7 Appendices E, F, G, H, M and N
7	Independent QA/QC Review of Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 Appendix C, Section C.2 Appendices E, F, G, H, and M

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications (Cont'd)

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
8	Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Sections C.3 and C.7 Appendices B, E, F, G, H, M and N
9	Independent QA/QC Review of Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Section C.5 Appendices B, E, F, G, H, and M
10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C. 4 and C.6 Appendix D, Sections D.2 (specifically Subsection D.2.7) and D.3 (specifically Subsection D.3.7) Appendices E, F, G, H, K, L, M and N
11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendix D, Sections D.2 (specifically Subsection D.2.7) and D.3 (specifically Subsection D.3.7) Appendices E, F, G, H, K, L, and M Appendices K, L, M and N

SECTION 6—SCHEDULE

The activities documented in this MAS shall be completed in accordance with the project schedule below. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner.

Activities	RESPONSIBLE PARTNER (S)	DATE DUE
Activity 1 – Scoping	Dakota County	complete
Activity 2 - Outreach	Dakota County/FEMA	9/30/05
Activity 3 – Field Surveys and Reconnaissance	Dakota County	7/1/05
Activity 6 –Hydrologic Analyses	CTP Contractor	7/1/05
Activity 7–Independent QA/QC Review of Hydrologic Analyses	State	9/15/05
Activity 8 – Hydraulic Analyses	CTP Contractor	two months after receipt of Cannon River hydrology
Activity 9 – Independent QA/QC Review of Hydraulic Analyses	FEMA	three months after receipt of Cannon River hydrology
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	CTP Contractor/Dakota County	four months after receipt of Cannon River hydrology
Activity 11 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	FEMA	five months after receipt of Cannon River hydrology

SECTION 7—CERTIFICATIONS

Activity 3 (Field Surveys and Reconnaissance)

A Registered Professional Engineer or Licensed Land Surveyor shall certify topographic data, in accordance with 44 CFR 65.5(c). Certification of topographic data by the American Society for Photogrammetry and Remote Sensing is also acceptable.

Activity 6 (Hydrologic Analyses), Activity 8 (Hydraulic Analyses), Activity 10 (Floodplain Mapping– Detailed Riverine)

- A Registered Professional Engineer shall certify hydrologic and hydraulic analyses and data in accordance with 44 CFR 65.6(f).
- A Registered Professional Engineer or Licensed Land Surveyor shall certify topographic information in accordance with 44 CFR 65.5(c).
- Any levee systems to be accredited will be certified in accordance with 44 CFR 65.10(e).

Activity 10 (Floodplain Mapping– Detailed Riverine), Activity 11 (Independent QA/QC Review of Floodplain Mapping {Revised Areas}),

The DFIRM metadata files shall include a description of the horizontal and vertical accuracy of the DFIRM base map and floodplain information.

Certifications must be made at the time the intermediate data is submitted. For example, if hydrologic data is submitted, certification will be required at the time it is submitted.

SECTION 8—TECHNICAL ASSISTANCE AND RESOURCES

Project Team members may obtain copies of FEMA-issued LOMCs, archived engineering backup data, and data collected as part of the Mapping Needs Assessment Process from the NSP or RMC 5, who may be contacted by telephone at (312) 575-3942 Nick VanderZwan or by facsimile at (312) 707-8804.

General technical and programmatic information, such as FEMA 265 and the Quick-2 computer program, can be downloaded from the FEMA Web site (<http://www.fema.gov/fhm/>). Specific technical and programmatic support may be provided through the NSP; such assistance should be requested through the FEMA Project Officer specified in Section 12 of this MAS.

Project Team members also may consult with the FEMA Regional Project Officer to request support in the areas of selection of data sources, digital data accuracy standards, assessment of vertical data accuracy, data collection methods or subcontractors, and GIS-based engineering and modeling training.

SECTION 9—CONTRACTORS

Dakota County, Minnesota intends to use the services of CTP Contractor as a contractor for this Flood Map Project. Dakota County, Minnesota shall ensure that the procurement for all contractors used for this Flood Map Project complies with the requirements of 44 CFR 13.36.

Part 13 may be downloaded in PDF or text format from the U.S. Government Printing Office Web site at http://www.access.gpo.gov/nara/cfr/waisidx_04/44cfr13_04.html.

SECTION 10—REPORTING

FINANCIAL REPORTING:

Because funding has been provided to Dakota County, Minnesota by FEMA, financial reporting requirements for Dakota County, Minnesota will be in accordance with Cooperative Agreement Articles V and VI.

STATUS REPORTING:

Status reports will be submitted on a quarterly basis in accordance with the financial reporting submittals. At a minimum these reports will include a summary of the work as outlined in the Cooperative Technical Partner (CTP)/Map Modernization Project Quarterly Report located in Appendix B of this Mapping Activity Statement. The Project Officer, as needed, may request additional information on status.

Dakota County, Minnesota may meet with the NSP and/or FEMA more frequently (up to bi-weekly if needed) to review the progress of the project in addition to the quarterly financial and status submittals. These meetings will alternate between Dakota County offices and conference calls as necessary.

Section 11—PROJECT COORDINATION

Throughout the project, all members of the Project Team will coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities shall include:

- Telephone conversations with FEMA and other Project Team members on a quarterly basis and an ad hoc basis, as required;
- Updates to the MICS, Mapping Needs Update Support System database, and other FEMA status information systems in accordance with requirements in Volumes 1 and 3 of *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- E-mail, facsimile transmissions, and letters, as required.

SECTION 12—POINTS OF CONTACT

The points of contact for this Flood Map Project are Lee Traeger, the FEMA Regional Project Officer; Tom Berry, the Project Manager for Dakota County, Minnesota; or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. When necessary, any additional assistance from FEMA should be requested through the FEMA Regional Project Officer.

Each party has caused this MAS to be executed by its duly authorized representative.

Greg Konat

Greg Konat, Director, Physical Development Division
Dakota County, Minnesota

7-10-05

Date

Terry Ruess Fell

Terry Ruess Fell, Branch Chief
Hazard and Risk Assessment Branch, Region 5
Federal Emergency Management Agency

8-29-05

Date

Ogbazghi Sium

Ogbazghi Sium, NFIP State Coordinator
Project Officer
Federal Insurance and Mitigation Administration

9-1-05

Date