



Urban Drainage and Flood Control District COOPERATING TECHNICAL PARTNERS MAPPING ACTIVITY STATEMENT

Mapping Activity Statement No. 11 – Digital Flood Insurance Rate Map Production

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated May 17, 1999 between Urban Drainage and Flood Control District (UDFCD) and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement (MAS) No. 11 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 Adams County and Incorporated Areas. The DFIRM and FIS report will be produced in the FEMA Countywide Format.

Existing GIS data and study needs for the community will be researched, obtained, organized and uploaded to the Management Information Portal (MIP) when available. Scoping will be necessary to determine the final scope of work for this project. In addition, the Mapping Partners involved in this project will incorporate updated flood hazard data (not shown on the effective FIRM), as summarized in the table below.

Table 1-1. Summary of Project Activities and Assignments

Flooding Source	Reach Limits	Hydrologic Analyses	Hydraulic Analyses	Floodplain Mapping	Refinement or Creation of Zone A
S. Platte River	Entire length within corp. limits	X	X	X	
Box Elder	Entire length within corp. limits				X
Clear Creek	Entire length within corp. limits	X	X	X	

Within 30 days of this agreement, the CTP, in coordination with the National Service Provider (NSP), shall input the scope of work into the FEMA Scoping tool. This includes information concerning community ordinance data, local GIS data availability and the flood reach data for existing and proposed conditions. The FEMA Scoping tool documentation can be found at http://www.fema.gov/fhm/dl_cgs.shtml#datacapture.

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

The following will complete this Flood Map Project:

- UDFCD;
- {Insert name(s) of CTP contractor(s), if applicable};
- Michael Baker Jr., Inc.

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 Table 1-1. All activities that are to be accomplished by UDFCD or contractors to UDFCD, including contractors that may be selected after the project startup, are included in the "CTP" column. The sections of this MAS that follow Table 1-1 describe the specific activities, responsible Mapping Partner(s), FEMA standards that must be met, and resultant map components.

Table 1-1. Summary of Project Activities and Assignments

Activities	CTP	FEMA (NSP)
Activity 1 – Scoping	X	
Activity 2 – QA/QC Review of Existing Data Studies	X	
Activity 3 – Base Map Acquisition	X	
Activity 4 – Floodplain Mapping (Detailed Riverine)	X	
Activity 4A – Floodplain Mapping (Refinement or Creation of Zone A)	X	
Activity 5 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)		X
Activity 6 – Digital Data Compilation (Non-Revised Areas)	X	
Activity 6A – Independent QA/QC Review of Digital Data Compilation (Non-Revised Areas)		X
Activity 7 – Digital Data Compilation (Merging Revised and Non-Revised Information)	X	
Activity 7A – DFIRM Production (Application of FEMA Graphics and Database Specifications)	X	
Activity 7B – FIS Report Production	X	
Activity 7C – Independent QA/QC Review of DFIRM Product Meeting		X

Activities	CTP	FEMA (NSP)
FEMA Graphics and Database Specifications		
Activity 8 – Preliminary DFIRM and FIS Report Distribution	X	X
Activity 9 – Post-Preliminary Processing	X	X
Activity 10 – Outreach	X	X

FEMA has developed tools to assist in the development of the flood hazard data studies and the Digital Flood Insurance Rate Maps (DFIRMs). 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 intermediate data specifications. Submitting data in these standards will aid in more efficient quality control reviews, data storage, archiving, and for future study updates.

The Intermediate Data Specifications submittals will be required at the following study milestones:

- Project Scoping (as specified)
- DFIRM Mapping (draft and preliminary)

Although the scoping activity is not specifically included in this table, CTPs performing scoping activities will be required to submit scoping related data in accordance with the intermediate data standards.

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

Task 1-1 Project Management Team participation

Responsible Mapping Partner: UDFCD

Scope: In cooperation with the FEMA Region, a Project Management Team will be established consisting of the UDFCD, FEMA's regional engineer, Adams County and Incorporated Areas, and other appropriate officials. The Project Management Team will be responsible for coordinating the activities of this project and completing all tasks identified in this Statement of Work.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables:

- A document listing the project management team along with their full contact information.
- Update of the Scoping Tool files to include the project management team and contact information.

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

Task 1-2 Initial Community Contact

Responsible Mapping Partner: UDFCD

Scope: Coordinate with the FEMA Regional Project Officer to contact Adams County and Incorporated Areas and notify them that FEMA and UDFCD has selected them for a map update, and that they will be working with the communities to develop the project scope. Topics to be reviewed with the communities include:

- Purpose of the Flood Map Project (i.e., the update needs that have prompted the map update);
- The community's perception of its mapping needs;
- Target schedule for completing the project;
- Possibility of the community participating as a CTP (if it isn't already); and
- The community's engineering, planning, and Geographic Information System (GIS) capabilities.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A digital document reporting the results of the contact

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

Task 1-3 Preliminary Project Management Plan

Responsible Partner: UDFCD

Scope: The coordination protocol and general management objectives of the entire project will be addressed in the preliminary Project Management Plan. The plan will identify the overall Project, Project Team, the lines and protocols of communication between the communities and the Team members, protocols for internal flow of information among the members of the Team, the project objectives, general milestones of the Flood Map Project, QA/QC review requirements, record keeping, and project completion goals.

The Project Management Plan shall follow the template provided in Appendix I, Subsection I.1.2 of the Guidelines and Specifications for Flood Hazard Mapping Partners and will constitute the living document for the operation of the project. Copies of the document will be distributed to all members of the Project Team. As the project advances, revisions deemed necessary for improving the Project Management Plan will be incorporated into the plan and distributed to all Team members as well.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: The Project Management Plan in digital format

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

Task 1-4 Project Team Formation

Responsible Partner: UDFCD

Scope: The composition of the Project Team will be based on the needs of the project. The selected Project Team members will consist of the Project Management Team plus other mapping partners and NFIP stakeholders whose collective capabilities will provide all the necessary resources to successfully complete the Flood Map Project.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A document listing the project team along with their full contact information. Update of the Scoping Tool files to include the project team and contact information.

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

Task 1 -5 Preliminary Research Activities

Responsible Partner: UDFCD

Scope: Preliminary Research Activities can be separated into two categories—researching effective information and researching available data for the Flood Map Project. The following tasks shall be completed to research effective information: conduct a thorough Mapping Needs Assessment (unless one has already been conducted) as described in Task A; inventory the FEMA archives for effective FIRM panels, FRFM panels, FIS reports, and other flood hazard data or existing study data; summarize the information in the MNUSS database; summarize contiguous community agreement checks; review CAV and CAC files; and develop a “scoping map” and an overview of the results of the research.

The following tasks shall be completed to research available data for Flood Map Project: identify available base map information; identify available topographic data; identify available flood hazard data; and identify other available hydrologic and hydraulic information and data.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS. An Available Data Inventory template is provided in Appendix I, Subsection I.1.6 of the “Guidelines and Specifications for Flood Hazard Mapping Partners”.

Deliverables: An Available Data Inventory digital document.

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

Task 1-6 Potential Obstacles

Responsible Partner: UDFCD

Scope: The Project Management Team shall identify potential obstacles in an effort to learn of any issues that could delay or prohibit the Flood Map Project. Some examples of potential obstacles to completing the project in a timely fashion are the following: inability to address mapping needs adequately with available funding; difficulty coordinating community funding with FEMA funding; lack of an available base map meeting FEMA minimum specifications (described in Appendix K of the “Guidelines and Specifications for Flood Hazard Mapping Partners”); hydrologic and/or hydraulic issues; community concerns; reliance on other studies or data (e.g., topographic mapping) that will not be available within the project’s scheduling constraints; needs not having as high a priority as originally identified; and other considerations (Federal/State/non-governmental organizations, programmatic, disaster-related, legal).

The Project Management Team shall explore potential issues on an ongoing basis. If potential obstacles are identified that could halt or significantly hinder the completion of the project, the Project Management Team shall evaluate all possible alternatives and develop an appropriate course of action as soon as practicable. This checklist is a “living” document that should be updated as necessary throughout the lifecycle of the project.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS. A Potential Obstacle to Project Completion Checklist template is provided in Appendix I, Subsection I.1.7 of the “Guidelines and Specifications for Flood Hazard Mapping Partners”.

Deliverables: A Potential Obstacle to Project Completion Checklist in digital form.

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

Task 1-7 Draft Scope of Project

Responsible Partner: UDFCD

Scope: Based on the information collected up to this point, UDFCD will develop a Draft Scope of Project for mapping needs of Adams County and Incorporated Areas. Input received from the FEMA Regional Project Officer and other involved community agencies will be used in the development of the Draft Scope of Project. The following items will be addressed in the Draft Scope of Project: review available information; determine if and how effective FIS data can be used in new project; identify other data needed to complete the Project and its source; DFIRM format

The Draft Scope of Project will establish priority levels for flooding sources to be analyzed and mapped, and estimate schedules and associated costs for completion of the components of flood mapping.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A Draft Scope of Project document in digital form and an update of the Scoping Tool files to include the draft scope.

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

Task 1-8 Draft Scope of Project Conference Call

Responsible Partner: UDFCD

Scope: After submission of the Draft Scope of Project to FEMA and the UDFCD, a conference call will be arranged among Project Management Team members and appropriate community representatives to discuss and refine the Draft Scope of Project. Results of the conference call will be summarized.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A digital document reporting discussions during the Conference Call

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

Task 1-9 Revised Draft Scope of Project

Responsible Partner: UDFCD

Scope: Based on the input received during the conference call, a "Revised Draft Scope of Project" will be prepared. This document will be submitted to the Project Team for further discussion during the project Scoping Meeting.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A Revised Draft Scope of Project document and an update of the Scoping Tool files to reflect any changes to the Scope of Project.

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

Task 1-10 Scoping Meeting Activities

Responsible Partner: UDFCD

Scope: UDFCD will co-ordinate, set-up, and hold the Scoping Meeting. This includes identifying a time, place, and all participants. The purpose of this meeting is to present the draft Scope of Project to the local officials (state, county and municipal) and coordinate on prioritization of identified study areas. UDFCD shall be responsible for compiling the necessary information for the meeting as contained on the Scoping Meeting Item Checklist. These items may include: FIS and FIRM for affected communities; USGS quads for the study area; best available community base map(s); effective FIRM summary; Available Data Inventory; Scoping Map; Draft Scope of Project; Scoping Meeting Agenda/Minutes form; Aerial photos/topographic mapping if available; existing drainage studies or other H&H data; Community master plan(s)/Drainage Master Plan(s); Zoning Maps; Street Maps; As-built plans; and Floodplain Ordinance(s).

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A completed Scoping Meeting Package with all necessary forms will be submitted to the UDFCD, the FEMA Regional Project Officer, and the NSP one week after the Scoping Meeting.

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

Task 1-11 Mapping Needs List Prioritization and Finalization

Responsible Partner: UDFCD

Scope: The project management team shall review the initial mapping needs list, review the research findings, and make selections of proposed methods for obtaining/producing flood data. Any additions or changes to the needs list shall be discussed with all members. All needs shall also be prioritized. In general, highest priority shall be given to the following areas: areas of dense existing or anticipated development, including areas where new road crossings have been constructed over stream(s); areas affected by flood-control structures and/or channelization; areas where natural physical changes in the floodplain have been significant (due to subsidence or extreme erosion, for example); areas that were studied by approximate methods and unmapped areas, especially those with development pressure; areas

where the community has experienced flooding outside mapped floodplains, with severe damage to buildings and/or infrastructure; areas where mapped flood hazards do not match those shown on contiguous FIRMs (unless those FIRMs are not considered to be accurate); and areas where flood data (BFEs, floodplains, and regulatory floodways) are likely to be changed the most by a restudy.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: The final mapping needs list along with priorities

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

Task 1-12 Refinement of Draft Scope of Project

Responsible Partner: UDFCD

Scope: Based on the discussion of mapping needs, UDFCD and FEMA Project Officer will finalize the areas to be included in the project (based on recommendations provided by the Project Team). Areas to be studied by detailed and approximate methods shall be identified. The following issues will be discussed and refined:

Review and Refinement of Flood Hazard Identification Methodologies:

The Project Team shall discuss the extent of riverine modeling required for the project. The research completed during the pre-Scoping Meeting phase shall be reviewed to determine the extent and applicability of previous modeling. Issues to be discussed include the following: models to be used from FEMA's approved models list; requirements for tie-ins to adjacent NFIP maps; areas where complex models might be required.

Review of Proposed Paneling Scheme:

The scoping map shall be used to review the proposed paneling and scale scheme.

Review and Refinement of Base and Topographic Map Sources:

FEMA's base map specifications will be discussed. The discussion shall include the following topics: Base map source (i.e., locally developed data or DOQs meeting FEMA's minimum specifications) to be used for the project; Topographic and plan metric data sources; Coordination of countywide issues, if necessary; Horizontal and vertical datums; and acquisition of the base map, if digital files are not available.

Finalization of Map Production and Database Options:

The proposed DFIRM format and optional features and data for the enhanced DFIRM Database (e.g., GIS data for watershed boundaries, stream reach hydrologic network structure, land use data, soil data, digital elevation certificates, photographs of structures) from the draft Scope of Project shall be reviewed, refined, and finalized.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A digital Draft Scope of Project document and update of the Scoping Tool files

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

Task 1-13 Assignment of Project Team Member Tasks

Responsible Partner: UDFCD

Scope: The objective is for each Project Team member to have a clear understanding of his or her roles and responsibilities for the project. The Task Assignment and Scheduling Worksheet in *Guidelines and Specifications for Flood Hazard Mapping Partners*, Appendix I, Subsection I.2.5 can be used to make assignments and develop a schedule for the project. The Flood Mapping Project Process Flowchart, which is included in Appendix I, Subsection I.2.6 may also be useful.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A report documenting the assignments of the Project Team members in accordance with the delivery dates specified in task orders.

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

Task 1-14 Scoping Meeting Documentation

Responsible Partner: UDFCD

Scope: UDFCD shall prepare and distribute the meeting minutes, which shall include a list of all the participants and their respective assignments for the project, as well as the overall schedule for the project as discussed at the Scoping Meeting. The overall project schedule shall establish the basis for each Project Team member's assignment(s). Project Team members shall review their task assignments and provide feedback or comments. All changes to the proposed scope, schedule, and task assignments shall be coordinated with UDFCD and the other team members

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A report documenting the Scoping Meeting including attendees sign-in list, scoping meeting minutes, project schedule summarizing prioritized needs within the community. Needs are prioritized so that areas of greatest need can be addressed with the available funding. Backup or supplemental information used in writing this report

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

Task 1-15 Statement of Work or Mapping Activity Statement Revision

Responsible Partner: FEMA (NSP)

Scope: FEMA shall work closely with the UDFCD to develop or revise the Mapping Activity Statement (MAS) based on task assignments made during the Scoping Meeting and any subsequent changes. FEMA Regional Project Officer, FEMA Regional Contracting Officer, and FEMA HQ Program Manager shall review and approve the SOW or MAS before it is distributed to the Project Team members. The MAS shall follow the template provided in Appendix I, Subsection I.3.1 of these Guidelines and Specifications for Flood Hazard Mapping Partners.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: The deliverable shall be the revised Mapping Activity Statement

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

Task 1-16 Time and Cost Estimate Preparation

Responsible Partner: UDFCD

Scope: UDFCD shall be responsible for preparing time and cost estimates for all assigned tasks as well as coordinating and compiling time and cost estimates from other mapping partners. Based on the SOW or MAS, each mapping partner participating in the flood map project shall develop a time and cost estimate for assigned tasks. As part of these estimates, Project Team members also shall establish a schedule for their portion of the work within the schedule from the Scoping Meeting.

The time and cost estimates shall be prepared in accordance with the template for preparing time and cost estimates is provided in Appendix I, Subsection I.3.2 of the *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A report containing time and cost estimates for all tasks. Any backup or supplemental information used in writing this report will also be included.

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

Task 1-17 Finalization of Project Management Plan

Responsible Partner: UDFCD

Scope: UDFCD, in consultation with the FEMA Regional Project Officer and FEMA Regional Contract Officer, shall incorporate the final SOW or MAS into the Project Management Plan and establish intermediate project reporting and project close-out requirements. The Plan shall then be ready for finalization

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: A Final Project Management Plan report and the backup or supplemental information used in writing this plan

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

Task 1-18 Updates to Mapping Needs Update Support System (MNUSS) Database or its replacement

Responsible Partner: FEMA (NSP)

Scope: Once the SOW or MAS are finalized, FEMA (NSP) shall update the MNUSS database to indicate that the needs included in the SOW or MAS are being addressed in an ongoing Flood Map Project. They shall also update the MNUSS database to add any new needs or revise existing needs identified during the scoping activities that will not be addressed by the current project. Additionally, they shall flag the needs that could not be verified during the research and community coordination activities as "not verified."

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Email from the MNUSS administrator stating that the MNUSS update was successful

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

Task 1-19 Outreach, Coordination & Consultation

Responsible Partner: UDFCD

Scope: 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. UDFCD shall develop an Outreach plan by determining the best way to accomplish the following: 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.

UDFCD shall also assist FEMA's Consultation Coordination Officer (CCO) in consultation and coordination efforts to address outreach activities to educate stakeholders about this Flood Map Project

UDFCD shall also assist FEMA in the coordination and outreach with local officials by helping them contact the local officials and the State NFIP Coordinator and inform them that their community has been selected for a possible study. They shall also work with FEMA and local officials to inform the community and request information through meetings and other consultation activities.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: An Outreach plan document along with documentation of Outreach, Consultation and Coordination activities that have already occurred.

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

Activity 2 - QA/QC Review of Existing Data Studies

Responsible Mapping Partner: UDFCD

Scope: UDFCD shall review the existing data studies to be incorporated into the DFIRM 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 regulatory adequacy, completeness of required information, and supporting data and documentation.
 - Use of acceptable model(s);
 - Ensure the existing data provides at least the level of detail shown on the effective FIRM;
 - Flood discharges;
 - Regulatory floodway computation methods; and
 - Tie-in to upstream and downstream non-revised Flood Profiles.
- Maintain records of all contacts, reviews, recommendations, and actions.

- Maintain an archive of all data submitted for hydraulic modeling review.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*:

- 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.

Activity 3 - Base Map Acquisition

Responsible Mapping Partner: UDFCD

Scope: UDFCD shall provide the digital base map for the project. The required activities are as follows:

- Obtain digital files (raster or vector) of the base map.
- Secure necessary permissions from the map source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge.
- Certify that the digital data meets the minimum standards and specifications that FEMA requires for DFIRM production.
- Populate the DFIRM database with the information required by FEMA.

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 TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, UDFCD shall make the following products available to FEMA:

- Written certification that the digital data meet the minimum standards and specifications; and
- Documentation that FEMA can use the digital base map.

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

Activity 4 - Floodplain Mapping (Detailed Riverine)

Responsible Mapping Partner: UDFCD

Scope: UDFCD 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 analyses are being incorporated. UDFCD shall incorporate all new modeling and shall use the best topographic data available to delineate the floodplain and regulatory floodway boundaries on a digital work map. In addition, UDFCD shall incorporate the results of all effective Letters of Map Change (LOMCs) within the

revised areas as appropriate. Also, UDFCD shall address all concerns or questions regarding Activity 4 that are raised by FEMA (NSP) during the independent QA/QC review under Activity 5.

Standards: All work under Activity 4 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of floodplain mapping for the flooding sources listed in Table 1, UDFCD shall submit the mapping to FEMA for an independent QA/QC review under Activity 5. UDFCD shall submit the mapping 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*, UDFCD shall make the following products available to FEMA:

- 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, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Populate appropriate DFIRM database files as specified in FEMA's *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;
- 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 5; and
- An explanation for the use of existing topography for the studied reaches, if appropriate;
- Intermediate Format Mapping Database or Intermediate Data Delivery consistent with the NSP Intermediate Data Specifications.

Intermediate Data Specifications can be downloaded from http://www.fema.gov/fhm/dl_cgs.shtm#datacapture.

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

Activity 4A - Floodplain Mapping (Refinement or Creation of Zone A)

Responsible Mapping Partner: UDFCD

Scope: UDFCD shall delineate the 1-percent-annual-chance floodplain boundaries for the flooding sources identified at the beginning of this MAS. UDFCD shall use best topographic data available to delineate the floodplain boundaries on a digital work map. In addition, UDFCD shall address all concerns

or questions regarding Activity 4A that are raised by FEMA (NSP) during the independent QA/QC review under Activity 5.

UDFCD may expand on the approaches for analyzing Zone A areas outlined in *Guidelines and Specifications for Flood Hazard Mapping Partners* and in FEMA 265, *Managing Floodplain Development in Approximate Zone A Areas* (April 1995), and/or develop new approaches. Such approaches must be coordinated with the FEMA Regional Project Officer identified in Section 13 of this MAS before analysis and mapping begin.

Standards: All work under Activity 4A shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of floodplain mapping for the flooding sources listed in Table 1, UDFCD shall submit the mapping to FEMA for an independent QA/QC review under Activity 5. UDFCD shall submit the mapping 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 Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, UDFCD shall make the following products available to FEMA:

- Digital work maps showing the 1-percent-annual-chance floodplain boundary delineations, flood insurance risk zone labels, and all applicable base map features;
- Written summary of the analysis methodologies;
- Any backup or supplemental information, including supporting calculations and assumptions for any computed 1-percent-annual-chance water-surface elevations used in the mapping required for the independent QA/QC review under Activity 5;
- Hardcopy and digital versions of input and output for any computer programs that were used;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Populate appropriate DFIRM database files as specified in FEMA's *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; and
- 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;
- NSP Format Mapping Database or Intermediate Data Delivery consistent with the NSP Intermediate Data Specifications.

Intermediate Data Specifications can be downloaded from
http://www.fema.gov/fhm/dl_cqs.shtml#datacapture.

If automated GIS-based models are applied, all input data, output data, intermediate data processing products, and GIS data layers shall be submitted.

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

Activity 5 - Independent QA/QC Review of Floodplain Mapping (Revised Areas)

Responsible Mapping Partner: FEMA (NSP)

Scope: FEMA shall review the floodplain mapping submitted by UDFCD under Activities 4 and 4A to ensure that the results of the analyses performed are accurately represented, the work maps are consistent with current FEMA standards, and the work maps are sufficient to prepare the DFIRM. 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 maps for proper location and agreement with the results of the hydraulic modeling.
- Review the regulatory floodway widths shown on the work maps for agreement with the widths shown in the Floodway Data Table and the results of the hydraulic modeling.
- Review the floodplain boundaries shown on the work maps or 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 5 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*, the following products shall be made available:

- A Summary Report 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.

Activity 6 – Digital Data Compilation (Non-Revised Areas)

Responsible Mapping Partner: UDFCD

Scope: For all flooding sources, UDFCD shall convert the information shown on the effective FIRM and Flood Boundary Floodway Map (FBFM) panels for all incorporated and unincorporated Areas of Adams County to digital format in conformance with FEMA DFIRM specifications. UDFCD shall use the base map acquired under Activity 3 for the conversion. UDFCD shall digitize the effective FIRM panels. UDFCD also shall incorporate the results of LOMCs issued by FEMA since the date of the current effective FIRM for each affected community.

Also, UDFCD shall address all comments and questions regarding Activity 6 that are raised by FEMA during the independent QA/QC review under Activity 6A.

UDFCD shall not digitize the flood theme for those segments of flooding sources for which updated flood data will be developed. Rather, UDFCD shall leave these as “holes” in the digital flood theme that will be filled in as part of Activity 7 using the digital flood data developed under Activities 4 and 4A.

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

Deliverables: Upon completion of approximately 140 DFIRM panels, UDFCD shall submit the panels to FEMA for an independent QA/QC review under Activity 6A. In accordance with the TSDN format described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, UDFCD shall make the following products available to FEMA:

- 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, and all applicable base map features;
- 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; and
- 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, including a check that the road and floodplain relationship is maintained for all non-revised areas.

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

Activity 6A – Independent QA/QC Review of Digital Data Compilation (Non-Revised Areas)

Responsible Mapping Partner: FEMA (NSP)

Scope: FEMA shall review the DFIRM panels submitted by UDFCD under Activity 6 to ensure that the new DFIRM panels accurately represent the information shown on the effective FIRMs and FBFMs for the area mapped and are consistent with current FEMA standards. This work shall include, at a minimum, checking the following:

- Cross sections are properly located and oriented as shown on the FIRMs or FBFMs.
- BFEs are properly located and agree with the BFEs shown on the FIRMs.
- Regulatory floodway widths agree with the widths shown on the FIRMs or FBFMs.
- The 1 and 0.2-percent-annual-chance floodplain boundaries agree with the floodplain boundaries shown on the FIRM and the contour lines, other topographic information, and planimetric information shown on the DFIRM base.
- Flood insurance risk zone designations are labeled properly.
- Road and floodplain relationships are maintained for all unrevised areas.
- DFIRM mapping files meet the GIS file and database format requirements specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those requirements for content and attribution.
- Metadata files describing the DFIRM data include the required information.

Standards: All work under Activity 6A 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*, the following products shall be made available:

- A Summary Report 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 copy of the DFIRM 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/firm_gsam.pdf.

Activity 7 – DFIRM Production (Merging Revised and Non-Revised Information)

Responsible Mapping Partner: UDFCD

Scope: Upon completion of the floodplain mapping activities for the revised areas (Activities 4 and/or 4A) and the Digital Data Compilation for non-revised areas (Activity 6), UDFCD shall merge the digital floodplain data into a single, updated DFIRM. This work is to include tie-in of flood hazard information

for areas that were not studied as part of the Flood Map Project documented in this MAS. UDFCD also shall tie in the revised and non-revised Flood Profiles, floodplain boundaries, and regulatory floodway boundaries with contiguous communities that were not studied as part of the Flood Map Project documented in this MAS. UDFCD shall coordinate with FEMA and those Mapping Partners responsible for Activities 4, 4A and 6, as necessary, to resolve any potential tie-in issues.

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*, UDFCD shall make the following products available to FEMA:

- 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, and all applicable base map features;
- 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; and
- 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.

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

Activity 7A – DFIRM Production (Application of FEMA Graphics and Database Specifications)

Responsible Mapping Partner: UDFCD

Scope: UDFCD shall apply the final FEMA DFIRM graphics and database specifications to the DFIRM files produced under Activity 7. This work shall include adding all required annotation, line pattern, area shading, and map collar information (e.g., map borders, title blocks, legends, notes to user). UDFCD shall coordinate with FEMA and those Mapping Partners responsible for Activities 4, 4A, 6, and 7, as necessary, to resolve any problems that are identified during Activity 7A.

Standards: All work under Activity 7A 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*, UDFCD shall make the following products available to FEMA:

- 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, and all applicable base map features;
- 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; and
- 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;
- NSP Format DFIRM Database or Intermediate Data Delivery consistent with the NSP Intermediate Data Specifications.

Intermediate Data Specifications can be downloaded from
http://www.fema.gov/fhm/dl_cgs.shtm#datacapture.

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

Activity 7B – FIS Report Production

Responsible Mapping Partner: UDFCD

Scope: UDFCD shall compile a countywide FIS Report for the subject county. This work shall include converting any hardcopy FIS texts into digital format and recompiling the texts into one FIS in countywide format or adding all required sections to the FIS text.

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

Deliverables: In accordance with the FIS Report format described in described in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*, UDFCD shall make the following products available to FEMA:

- FIS Report, including the following:
 - Text in countywide or community-based format.
 - All Floodway Data Tables and Flood Profiles converted to NAVD 88.

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

Activity 7C – Independent QA/QC Review of FIS and DFIRM Products Meeting FEMA Graphics and Database Specifications

Responsible Mapping Partner: FEMA (NSP)

Scope: Upon completion of the floodplain mapping activities (Activities 4 and/or 4A) and DFIRM production activities (Activities 6, 7, 7A, and 7B), FEMA shall review the DFIRM to ensure it meets current FEMA graphics specifications. In addition, FEMA shall review the DFIRM spatial database to determine if it meets current FEMA database specifications. FEMA shall coordinate with UDFCD and other Mapping Partners, as necessary, to resolve any problems identified during this QA/QC review. This work shall ensure that the requirements below are met.

- All required DFIRM features are accurately and legibly labeled and follow the examples shown in the FEMA DFIRM specifications. This includes all flood insurance risk zones, BFEs, cross sections, studied streams, mapped political entities, and all roads within and adjacent to the 1-percent-annual-chance floodplains.
- All DFIRM features are correctly symbolized with the appropriate symbol, line pattern, or area shading and follow the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- All map collar information is complete, correct, and follows the requirements specified in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- DFIRM mapping files are in one of the GIS file and database formats specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those specifications for content and attribution.
- DFIRM database files are in one of the database formats specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those specifications for content and attribution.
- Metadata files describing the DFIRM data include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- The FIS report is prepared in the FEMA Countywide Format as documented in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 7C 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*, the following products shall be made available:

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies in or agreeing with the mapping results and the results of all automated or manual QA/QC steps taken during the independent QA/QC review;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- An annotated copy of the DFIRM 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.

Activity 8 - Preliminary DFIRM and FIS Report Distribution

Responsible Mapping Partners: UDFCD and FEMA (NSP)

Scope: Activity 8 consists of the final preparation, review, and distribution of the Preliminary copies of the DFIRM and FIS report for community official and general public review and comment. The activities to be performed are summarized below.

Preliminary Transmittal Letter Preparation: UDFCD shall prepare letters to transmit the Preliminary copies of the DFIRM and FIS report and related enclosures to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

Preliminary FIS Report Preparation: UDFCD shall prepare the FIS report in the FEMA Countywide Format following the FEMA requirements specified in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Final QA/QC Review of Preliminary DFIRM and FIS Report: The NSP shall perform a final QA/QC review of the Preliminary DFIRM and FIS report, including all data tables, Flood Profiles, and other components of the FIS report. The QA/QC review procedures shall be consistent with the *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Discrepancy Resolution: The NSP shall work with UDFCD and FEMA as appropriate to resolve discrepancies identified during the final QA/QC review.

Distribution of Preliminary DFIRM and FIS Report: UDFCD shall distribute the Preliminary copies of the DFIRM and FIS report to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

News Release Preparation: The NSP shall prepare news release notifications of BFE changes for all affected communities if appropriate and perform QA/QC reviews of the notifications for accuracy and compliance with FEMA format requirements. The NSP shall file the notifications for later submittal to FEMA for review.

Preliminary Summary of Map Actions (SOMA) Preparation: UDFCD shall prepare Preliminary SOMAs for all affected communities if appropriate. The SOMAs shall list pertinent information regarding LOMCs that will be affected by the issuance of the DFIRM (i.e., superseded, incorporated, revalidated).

Standards: All work under Activity 8 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* and the requirements documented in Section 1 and Appendix A of the *FEMA Document Control Procedures Manual*, UDFCD shall make the products listed below available to FEMA.

- Preliminary transmittal letters shall be prepared. These letters and any additional letters requested by FEMA shall be prepared in accordance with the current version of the *FEMA Document Control Procedures Manual*.
- Preliminary copies of the DFIRM and FIS report, including all new or updated data tables and Flood Profiles, shall be prepared.
- Preliminary copies of the DFIRM and FIS report shall be mailed to the Chief Executive Officer (CEO) and floodplain administrator of each affected community, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.
- Preliminary SOMAs, prepared in accordance with FEMA requirements, shall be mailed with the Preliminary copies of the DFIRM and FIS report when appropriate.
- Revised DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM.
- Revised DFIRM database files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM.
- Revised metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM.
- 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 shall be provided.

Activity 9 - Post-Preliminary Processing

Responsible Mapping Partners: UDFCD and FEMA (NSP)

Scope: Activity 9 consists of finalizing the DFIRM and FIS report after the Preliminary copies of the DFIRM and FIS report have been issued to community officials and the public for review and comment. The activities to be performed are summarized below.

Initiation of Statutory 90-Day Appeal Period: When required, upon completion of a 30-day community comment period and/or final coordination meeting with the affected communities, the NSP and UDFCD shall arrange for and verify that the following activities are completed in accordance with the current version of the *FEMA Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manual*:

- Proposed BFE determination letters are sent to the community CEOs and floodplain administrators.
- News release notifications of BFE changes are published in prominent newspapers with local circulation.
- The appropriate notices (Proposed Rules) are published in the *Federal Register*.

Resolution of Appeals and Protests: The NSP and UDFCD shall support FEMA in reviewing and resolving appeals and protests received during the 90-day appeal period. For each appeal and protest, the following activities shall be conducted as appropriate:

- Initial processing and acknowledgment of submittal;
- Technical review of submittal;
- Preparation of letter(s) requesting additional supporting data;
- Performance of revised analyses; and
- Preparation of a draft resolution letter and revised DFIRM and FIS report materials for FEMA review.

The NSP shall mail all associated correspondence upon authorization by FEMA.

Preparation of Special Correspondence: The NSP and UDFCD shall support FEMA in responding to comments not received within the 90-day appeal period (referred to as “special correspondence”), including drafting responses for FEMA review when appropriate and finalizing responses when requested by FEMA. The NSP also shall mail the final correspondence (and enclosures if appropriate) and distribute appropriate copies of the correspondence and enclosures upon receipt of authorization from FEMA.

Revision of DFIRM and FIS Report: If necessary, the NSP and UDFCD shall work together to revise the DFIRM and FIS report at the direction of the FEMA Regional Project Officer and distribute Revised Preliminary copies of the DFIRM and FIS report to the CEO and floodplain administrator of each affected community, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

Final SOMA Preparation: The NSP shall prepare Final SOMAs for the affected communities as appropriate.

Processing of Letter of Final Determination: The NSP and UDFCD shall work with FEMA to establish the effective date for the DFIRM and FIS report, and shall prepare a Letter of Final Determination (LFD) for each affected community for FEMA review in accordance with the *FEMA Document Control Procedures Manual*. The NSP also shall mail the final signed LFDs and enclosures (including the Final SOMA and the Final Rule for publication in the *Federal Register*, when appropriate) and distribute appropriate copies of the signed LFDs and enclosures upon receipt of authorization from FEMA.

Processing of Final DFIRM and FIS Report for Printing: The NSP shall prepare final reproduction materials for the DFIRM and FIS report and provide these materials to the FEMA Map Service Center for printing by the U.S. Government Printing Office. The NSP also shall prepare the appropriate paperwork to accompany the DFIRM and FIS report (including Print Processing Worksheet, Printing Requisition Forms, and Community Map Actions Form) and transmittal letters to the community CEOs.

Revalidation Letter Processing: The NSP, when appropriate, shall prepare and distribute revalidation letters to the community CEOs and floodplain administrators to notify the affected communities about LOMCs for which determinations will remain in effect after the DFIRM and FIS report become effective.

Archiving Data: The NSP shall ensure that technical and administrative support data are packaged in the FEMA-required TSDN format and stored properly in the library archives.

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* and the requirements documented in Section 1

and Appendix A of the *FEMA Document Control Procedures Manual*, the NSP and UDFCD shall make the following products available to FEMA:

- Documentation that the news release notifications were published in accordance with FEMA requirements;
- Documentation that the appropriate *Federal Register* notices (Proposed and Final Rules) were published in accordance with FEMA requirements;
- Draft and final Special Correspondence (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final Appeal and Protest acknowledgment, additional data, and resolution letters (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final LFDs (and all associated enclosures, backup data, and other related information) for FEMA review and signature;
- DFIRM negatives and final FIS report materials, including all updated data tables and Flood Profiles;
- Paperwork for the final DFIRM and FIS report materials;
- Transmittal letters for the printed DFIRM and FIS report;
- LOMC Revalidation Letters if appropriate; and
- Complete, organized archived technical and administrative support data.

Activity 10—Outreach and Coordination

Responsible Mapping Partners: UDFCD and FEMA (NSP)

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

Standards: All work conducted under this task shall conform to the standards specified for this task in Section 5, "Applicable Standards" of this SOW. In the event of any contradictions between the SOW and the standards, the standards shall control.

Deliverables: Upon Completion of Outreach and Coordination the Contractor shall deliver the following to the FEMA Regional Project Officer in accordance with the delivery dates specified in task orders:

- A report detailing outreach and coordination activities
- Backup or supplemental information used in writing this report

SECTION 2—TECHNICAL AND ADMINISTRATIVE SUPPORT DATA SUBMITTALS AND SPECIAL PROBLEM REPORTS

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 MAS 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.

Table 2-1. Mapping Activities and Applicable TSDN Sections

TSDN Section	Mapping Activities								
	1	2	3	4, 4A	5	6, 6A	7, 7A, 7B, 7C	8	9
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				
Hydraulic Analyses		X		X	X				
Key to Cross-Section Labeling		X		X	X				
Key to Transect Labeling		X		X	X				
Draft FIS Report							X		
Mapping Information	X	X	X	X	X	X	X	X	X
Miscellaneous Reference Information	X	X	X	X	X	X	X	X	X

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*.)

Additionally, the NSP shall collect and maintain a set of products for all Activities and shall compile a comprehensive TSDN for the entire project.

Section 3—Period of Performance

The mapping activities documented in this MAS will begin on June 15, 2004, and will be completed no later than September 15, 2005. The mapping activities may be terminated at the option of FEMA or UDFCD in accordance with the provisions of the Partnership Agreement dated May 17, 1999.

Section 4—Funding/Cost-Sharing

FEMA is providing funding, in the amount of _____ o UDFCD for the completion of the Flood Map Project documented in this MAS. UDFCD shall provide any additional resources required to complete the assigned activities for this Flood Map Project.

Section 5—Standards

The standards relevant to this MAS 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.

In addition, intermediate data submission standards referenced in the previous sections are to be applied to the project for the data formats to be submitted to FEMA.

Table 5-1. Applicable Standards for Project Activities

Applicable Standards	Activities								
	1	2	3	4, 4 A	5	6, 6 A	7, 7A, 7B, 7C	8	9
<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								
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-510), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	X								
Engineer Manual 1110-1-1000, <i>Photogrammetric Mapping</i> (USACE), July 1, 2002	X								
Engineer Manual 1110-2-1003, <i>Hydrographic Surveys</i> (USACE), January 1, 2002	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	
2	QA/QC Review of Existing Data Studies	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
3	Base Map Acquisition and Preparation	Volume 1, Section 1.3 (specifically Subsection 1.3.1.8) and 1.4 (specifically Subsections 1.4.3.1 and 1.4.3.2) Appendix A, Section A.1 (specifically Subsection A.1.1)
4	Floodplain Mapping (Detailed Riverine)	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, and M
4A	Floodplain Mapping (Refinement or Creation of Zone A)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendices K, L, and M
5	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

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
6	Digital Data Compilation (Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2, 1.4.2.3, and 1.4.3.2) Appendices K, L, and M
6A	Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2, 1.4.2.3, and 1.4.3.2) Appendices K, L, and M
7	DFIRM Production (Merging Revised and Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.3) Appendices K, L, and M
7A	DFIRM Production (Application of FEMA Graphics and Database Specifications)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3, 1.4.3.3, 1.4.3.9, and 1.4.3.10) Appendices K, L, and M
7B	FIS Report Production	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.8) Appendix J
7C	Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3, 1.4.3.3, 1.4.3.9, and 1.4.3.10) Appendices K, L, and M
8	Preliminary DFIRM and FIS Report Distribution	Volume 1, Sections 1.4 (specifically Subsections 1.4.2 and 1.4.3) and 1.5 (specifically Subsection 1.5.1) Appendices J, K, L, and M
9	Post-Preliminary Processing	Volume 1, Section 1.5 (specifically Subsection 1.5.2) Appendices J, K, L, and M

Section 6—Schedule

The activities documented in this MAS shall be completed in accordance with the project schedule shown in Table 6-1. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner.

Table 6-1. Project Schedule

1007
1/19/04

ACTIVITIES	RESPONSIBLE PARTNER(S)	DATE DUE
Activity 1 – Scoping	FEMA/UDFCD	6/17/04
Activity 2 – QA/QC Review of Existing Data Studies	UDFCD	6/30/04
Activity 3 – Base Map Acquisition	UDFCD	7/30/04
Activity 4 – Floodplain Mapping (Detailed Riverine)	UDFCD	10/5/04
Activity 4A – Floodplain Mapping (Refinement or Creation of Zone A)	UDFCD	10/5/04
Activity 5 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	FEMA	10/31/04
Activity 6 – Digital Data Compilation (Non-Revised Areas)	UDFCD	12/21/04
Activity 6A – Independent QA/QC Review of Digital Data Compilation (Non-Revised Areas)	FEMA	1/11/05
Activity 7 – DFIRM Production (Merging Revised and Non-Revised Information)	UDFCD	2/15/05
Activity 7A – DFIRM Production (Application of DFIRM Graphics and Database Specifications)	UDFCD	2/15/05
Activity 7B – FIS Report Production	UDFCD	2/15/05
Activity 7C – Independent QA/QC Review of FIS and DFIRM Products Meeting FEMA Graphics and Database Specifications	FEMA	3/4/05
Activity 8 – Preliminary DFIRM and FIS Report Distribution	FEMA/UDFCD	3/15/05
Activity 9 – Post-Preliminary Processing	FEMA/UDFCD	9/15/05
Activity 10 – Outreach	FEMA/UDFCD	9/15/05

Waiting on Baker
work maps @ 12/21/04
map located @ 2/10/05

Done 11/04

9/15/05

Section 7—Certifications

Single Dam Construction Auth. by FEMA

The following certifications apply to this MAS:

Activity 4 (Floodplain Mapping– Detailed Riverine), and Activity 4A (Floodplain Mapping {Refinement or Creation of Zone A})

- 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 4 (Floodplain Mapping– Detailed Riverine), and Activity 4A (Floodplain Mapping {Refinement or Creation of Zone A}), Activity 5 (Independent QA/QC Review of Floodplain Mapping {Revised Areas}), Activity 6 (Digital Data Compilation {Non-Revised Areas}), Activity 7 (DFIRM Production {Merging Revised and Non-Revised Information}), and Activity 7A (DFIRM Production {Application of FEMA Graphics and Database Specifications})

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

Activity 2 (Base Map Acquisition and Preparation)

- A community official or responsible party shall provide written certification that the digital data meet FEMA minimum standards and specifications.
- The responsible Mapping Partner shall provide documentation that the digital base map can be used by FEMA. Please note that uploading base map data to the MIP does not constitute agreement that the digital base map can be used by FEMA. Documentation that the digital base map can be used by FEMA will still be required.

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 FEMA Mapping Needs Assessment Process from the NSP, who may be contacted by telephone at 703-960-8800 or by facsimile at 703-960-9125.

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 11 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

UDFCD intends to use the services of {Insert name of CTP contractor} as a contractor for the Flood Map Project documented in this MAS. UDFCD 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_02/44cfr13_02.html.

Section 10—Reporting

Because funding has been provided to UDFCD by FEMA for the Flood Map Project documented in this MAS, financial reporting requirements for UDFCD will be in accordance with Cooperative Agreement Articles V and VI (as part of UDFCD's grant application).

UDFCD will meet with the NSP and/or FEMA to review the progress of the project. These meetings may be held at the UDFCD office, the consultant's office, FEMA's office or the NSP's office as appropriate.

Section 11—Points of Contact

The points of contact for this Flood Map Project are Dan Carlson, the FEMA Regional Project Officer; Bill DeGroot, the Project Manager for UDFCD; or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. When necessary, the assistance of the NSP should be requested through the FEMA Project Officer, Dan Carlson.

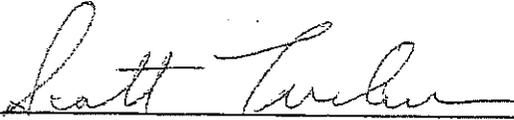
In addition, the NSP is required to coordinate project issues with the party that actually created the MAS deliverable or portions of the MAS deliverable product and will document all such coordination activities with the CTP and FEMA.

Section 12—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:

- Meetings, teleconferences, and videoconferences with FEMA and other Project Team members;
- 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*; and
- E-mail, facsimile transmissions, and letters, as required.

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



Scott Tucker
Executive Director
UDFCD

4/29/04

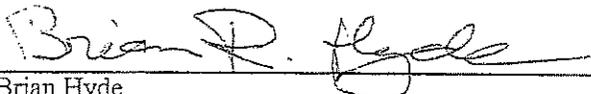
Date

Robert Ives
Regional Project Officer
Federal Emergency Management Agency, Region 8

Date

Max Yuan
Project Officer
Federal Emergency Management Agency

Date



Brian Hyde
Project Manager
Colorado Water Conservation Board

4/30/04

Date

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

Scott Tucker
Project Manager
UDFCD

Date

Robert Ives
Regional Project Officer
Federal Emergency Management Agency, Region 8

Date

Kevin C. Long For

Max Yuan
Project Officer
Federal Emergency Management Agency

4/29/04

Date

Brian Hyde
Project Manager
Colorado Water Conservation Board

Date