Map MODERNIZATION

Federal Emergency Management Agency

FEMA's Flood Hazard Mapping Program

Guidelines and Specifications for Flood Hazard Mapping Partners

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Appendix I: Scoping Guidance and Tools

FEDERAL EMERGENCY MANAGEMENT AGENCY

www.fema.gov/mit/tsd/dl_cgs.htm

FINAL

February 2002

Appendix I

Project Scoping Toolbox

This Appendix provides a variety of tools to assist the Federal Emergency Management Agency (FEMA) Lead and other Project Team members during the Project Scoping phase of a Flood Map Project. Project Team members shall use the "toolbox" of templates, checklists, and forms presented in this Appendix to record activities throughout the Project Scoping phase.

Detailed information on the Project Scoping phase is provided in Volume 1, Section 1.3 of these Guidelines. As discussed in Volume 1, Section 1.3 of these Guidelines, the activities completed during the Project Scoping phase are grouped into those that take place before, during, and after a Scoping Meeting, as follows:

- Pre-Scoping Meeting activities;
- Scoping Meeting activities; and
- Post-Scoping Meeting activities.

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I.1 Pre-Scoping Meeting Activities

The templates, checklists, and forms that the FEMA Lead and other Project Team members shall use to record activities before the Project Scoping Meeting are summarized in Subsections I.1.1 through I.1.8.

[February 2002]

I.1.1 Initial Community Contact – Record of Communication Template

FEMA designed the Initial Community Contact—Record of Communication Template, shown on page I-2, to record the activities involved with planning the initial community contact and recording the topics covered during telephone call(s) with the community. If more than one community is contacted, the FEMA Lead or other assigned FEMA staff shall prepare a separate form for each community.

Community/Mapping Project:	
Date:	**Case No.:**
Recorder:	
Name of Community Contact:	
Agency/Organization	
Telephone Number:	
E-Mail Address:	
Facsimile Number:	
Topics To Cover:	
• Purpose of the Mapping Project {Insert notes.}	
• Community's Perception of Mapping Needs {Insert notes.}	
• Target Schedule for Completing the Project {Insert notes.}	
• Possibility of Community Contributing as a Cooperative Technical Partner {Insert notes.}	
• Other Discussion Topics {Insert notes.}	
• Community's Engineering, Planning, and GIS Capabilities - How advanced are they? - Where do they reside in the community's organization? {Insert notes.}	

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I.1.2 Project Management Plan Template

FEMA designed the Project Management Plan Template, shown on pages I-4 to I-10, to record activities associated with the preliminary Project Management Plan, such as establishing specific project protocols and management objectives for the entire Project. After the Project Management Team has been formed, each team member will be provided with a copy of the preliminary Project Management Plan. The Project Management Plan is a "living" document that the Project Management Team shall update, with information added when necessary, as a Flood Map Project progresses.

[February 2002]

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Project Management Plan

{Insert Name of Project}

Prepared by:

{Insert Name(s) of Author(s)}

{Insert Initial Date}

{Insert Revision Date}

{Insert Revision Date}

{Insert Revision Date}

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Project Management Team Contact Information

Project Management Team Member	Organization	Contact Information	
{Insert name of FEMA Lead.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name FEMA HQ Engineer.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name of MCC Representative.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			

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Project Team Contact Information

Project Team Member	Organization	Contact Information	
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			

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Introduction

The general objectives for this Mapping Project are to:

Use this table to list or describe the overall objectives of the project (check all that apply).	
	Convert map panels (revised and unrevised) to digital format.
	Update the {floodplain and/or floodway} for the subject flooding source to reflect new {hydrologic and/or hydraulic} conditions (e.g., recent development, new flood control structures, changes in stream morphology, etc.).
	Incorporate previously unmapped or revised map features, such as [{specify; e.g., new roads, elevation reference marks, corporate boundaries, LOMCs, etc.}]
	Create new FIRMS for previously unmapped areas.
	Perform a detailed study of a previously approximately studied or unstudied area.
	Other primary objectives. {Add any other primary objectives.}

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The remainder of this Project Management Plan establishes project coordination protocols and outlines the general management activities required to meet these objectives.

1. Description of Mapping Project

{Provide a brief description of the project area.}

2. Communication Protocols

{List and/or describe communication protocols between and among Project Management Team and Project Team Members; e.g., MICS, e-mail, project-specific Web site. Note: Insist on consistent and clear documentation methods for all project communications.}

3. Milestones and Reporting Requirements

The major milestones and intermediate milestones are identified in the table below. Fill in the major milestones first; this will help provide a schedule and framework. As the project progresses, fill in the intermediate milestones. (Major milestones are shaded gray.)

Milestones		Target Date	Completion Date
Pre-Scoping Meeting Activities	Form Project Management Team		
	Initial Community Contact		
	Prepare Preliminary Project Management Plan		
	Initial Project Conference Call with Community		
	Form Project Team		
	Complete Research		
	Draft Scope of Project		
	Draft Scope of Project Conference Call		
	Distribute Background Information		
Scoping Meeting	**Hold Scoping Meeting**		
Post-Scoping Meeting Activities	Document Scoping Meeting		
	Develop SOW and Distribute to Project Team Members		
	Project Team Members Submit T&C Estimates		
	Update MNUSS		
	Issue Task Orders and Notice to Proceed		

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Milestones		Target Date	Completion Date
Flood Data Update	**Acquire Necessary Topographic and Field Data**		
	Independent QA/QC		
	Complete Hydrologic Analyses		
	Independent QA/QC		
	Complete Hydraulic Analyses		
	Independent QA/QC		
	Complete Digital Floodplain Mapping		
	Independent QA/QC		
Digital Conversion	Acquire Base Map		
	DFIRM Production (non-revised areas)		
	Merge Effective and Updated Information		
	Issue Preliminary FIS and FIRM		
Post-Preliminary Processing	Hold Final Meeting		
	Initiate 90-Day Appeal Period		
	Issue Letter of Final Determination		
	Final DFIRM Distributed		

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4. Outreach Strategy

{Describe outreach strategy to be implemented for the project; e.g., press releases, targeted mailings, Congressional briefings, public affairs, Television/Radio, or "Letters to the Editor" from FEMA Director. Note that guidance on performing this outreach is currently under development by the FEMA Technical Services Division, Program Outreach Branch.}

5. Other On-Going and Related Activities or Projects

{List all on-going and related activities or projects. Describe how activity or project relates and/or ties in with the project.}

6. Quality Assurance Approach and/or Requirements

{Describe quality assurance approach and/or requirements for this project; e.g., FMPCC performs independent review of H&H analyses by CTP. Include a description of the roles and responsibilities of the various Project Team members in quality assurance.}

7. Retention and Maintenance of Records

{Describe procedures to be followed for retention and maintenance of all records and data related to this project.}

8. Project Completion Activities

Project Completion Activity	Completion Date
{Insert all Project Completion Activities; e.g., Updating MNUSS, Finalizing Vouchers, Holding Final Meeting. Note: Insert new table row for each activity.}	{Insert Date.}

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I.1.3 Initial Project Conference Call Agenda/Meeting Minutes Template

FEMA designed the Initial Project Conference Call Agenda/Meeting Minutes Template, shown on page I-12 to document the agenda and results of the initial Project conference call to the community (ies). If more than one call is conducted, the FEMA Lead or other assigned FEMA staff shall use a separate form for each community.

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Community/Mapping Project:	
Date:	**Case No.:**
FEMA Lead:	
Participants: **1.** **6.** **2.** **7.** **3.** **8.** **4.** **9.** **5.** **10.**	

Agenda Items	**Estimated Time**
1. Introduce Project Management Team	
{Insert notes.}	
2. Provide overview of proposed project, including: • Purpose of project; • Potential flooding sources that have been identified so far (including limits of project); and • Why community/flooding sources were chosen for project.	
{Insert notes.}	
3. Discuss community's assessment of flood mapping needs	
{Insert notes.}	
4. Discuss potential data sources (e.g., digital base maps, on-going projects, and data collection efforts)	
{Insert notes.}	
5. Identify other key players (e.g., regional or State agencies)	
{Insert notes.}	
6. Discuss community's capabilities and interest in becoming a CTP	
{Insert notes.}	
7. Other topics of discussion	
{Insert notes.}	
8. Outline schedule of future activities	
{Insert notes.}	
9. Summary/Action Items	
{Insert notes.}	

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I.1.4 Effective Map and Report Summary Template

FEMA designed the Effective Map and Report Summary Template, shown on pages I-14 to I-18, for the assigned Project Team member to use in recording the results of research of effective information. As discussed in Volume 1, Subsection 1.3.2.6 of these Guidelines, findings from a search of the FEMA library storage facility for effective Flood Insurance Rate Map (FIRM) panels and Flood Insurance Study (FIS) reports and other flood hazard data or existing study data and the results of other research are to be documented on this template.

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Effective Map and Report Summary

{Insert Name of Project}

{Insert Community Name - Complete Separate Summary for Each Community.}

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{Insert Date}

Prepared by:

{Insert Name(s) of Author(s)}

Introduction

{Insert paragraph describing the purpose of this Effective FIRM Summary document. If more than one community is involved in the project, provide a summary for each.}

1. Library Research

A. General Effective FIS Information

Date of the Effective FIRM: {Insert date}

Number of effective FIRM panels: {Insert number of panels and list by number; e.g., 99009C0025D}

Format of the effective FIRM (check all that apply):

- ❑ Manual
- ❑ Digital
- ❑ Countywide
- ❑ Map Initiatives

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Type of flooding (check all that apply): ❑ Riverine ❑ Coastal ❑ Alluvial

(Attach effective FIRM, FIS, and/or FHBM.)

B. Base Map Information

Provide the following for the base map(s) used for the effective FIRM.

Base Map Source	Date	Scale
{Insert base map source}	{Insert date}	{Insert scale}

C. Summary of Map Actions

Letters of Map Change				
The LOMRs, LOMR-Fs, and LOMAs listed below have been issued and are currently effective.				
LOMC Type	Case No.	Effective Date	Project Identifier	Panel

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D. Summary of Flood Control Structures

{Provide an inventory of effective flood control structures (levees/dams) and their certification status.}

{Provide any relevant information on file regarding post-disaster investigations in the proposed study area.}

E. Flooding Source: {Insert name of flooding source; use one "Flooding Source" table for each flooding source studied in detail.}

Analysis Type	Method	Date	Digital Copy Available?	Reach Limits
Hydrology			❑ Yes ❑ No	
Hydraulics			❑ Yes ❑ No	

Topographic Source for Floodplain Delineation	{Insert Topographic Source.}
Data Source for Cross Section Data	{Insert Data Source.}

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2. MNUSS Research Summary

A. Flood Data Update Needs

List Need Type(s): {Insert type of need.}

B. Map Maintenance Needs

List Need Type(s): {Insert type of need.}

(Attach a printout of the MNUSS Community Need Reports.)

3. Map Needs Assessment Results

Was a separate Map Needs Assessment done? ❑ Yes ❑ No

If so, when? {Insert date of Map Needs Assessment.}

Why? {Insert description of why the needs assessment was done.}

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Summary of Map Needs Assessment Findings:

{Provide a summary of the findings of the map needs assessment.}

(Attach completed Map Needs Assessment Form.)

4. Attachments

- Scoping Map
- Relevant future file information
- MNUSS Community Need Reports:
- Map Needs Assessment Form, if completed
- Effective FIRM panels
- FIS report

[February 2002]

I.1.5 Available Data Inventory Template

FEMA designed the Available Data Inventory Template, shown on pages I-20 to I-28, to record the results of research of all available data including, but not limited to, available base map information, topographic data, flood hazard data and hydrologic and hydraulic information and data. The assigned Project Team member shall use this template to document the agencies contacted, date, name of person contacted, telephone number, and the result of the research.

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Available Data Inventory

{Insert Name of Project}

{Insert Date}

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Prepared by:

{Insert Name(s) of Author(s)}

This checklist is used to inventory base map, topographic, and hydrologic and hydraulic data, and floodplain mapping information and data available or currently underway that may be useful for this project. (Also, use the "Effective FIRM Summary" and the "Potential Obstacles to Project Completion Checklist.")

Use the checklist below to help solicit the information you will need to answer the key questions.

Base Map Information

Are U.S. Geological Survey (USGS) Digital Orthophoto Quadrangles (DOQs) available for this community or county? ❑ Yes ❑ No

{Insert notes.}

What community base map data are available? From whom?

{Insert notes.}

What is the source of the base map data and how were the data created?

{Insert notes.}

Are the owners of the data willing to allow FEMA to release the base map data to the public with the DFIRMs? ❑ Yes ❑ No

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If you checked "No," to the above question you do not need to complete the rest of the Base Map Information section of this checklist.

Contact Information for Data Source	
Name:	
Organization:	
Telephone No.:	
E-Mail Address:	
Facsimile No.:	

{Insert notes.}

If the base map data are in vector format and the owner is not willing to release the data, will the owner allow FEMA to make a raster image of the vector base map data and release that? ❑ Yes ❑ No

{Insert notes.}

Base Map Information (Continued)

Do the data cover the entire community or county being restudied (not just the streams being studied)? ❑ Yes ❑ No

{Insert notes.}

Are the data available now? If not, what is the projected completion date? ❑ Yes ❑ No

{Insert notes.}

What is the accuracy or resolution of each data set or type?

{Insert notes.}

When were the base map data created, last updated, or reviewed for update needs?

Created	Last Updated	Reviewed
{Insert date.}	{Insert date.}	{Insert date.}

{Insert notes.}

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Is the base map in the process of being revised? If yes, what is being done and when will it be completed? ❑ Yes ❑ No

{Insert notes.}

What projection, horizontal datum, and vertical datum were used for the base map data sets?

Projection	Horizontal Datum	Vertical Datum
{Insert notes.}	{Insert notes.}	{Insert notes.}

In what file format(s) are the data available?

{Insert notes.}

How are the data tiled?

{Insert notes.}

Is a data dictionary or metadata available? ❑ Yes ❑ No

{Insert notes.}

Base Map Information (Continued)

What feature types do the base map data sets contain? (Check all that apply.)

- ❑ Roads
  - ❑ Centerlines
  - ❑ Edge of pavement
  - ❑ Right of way
  - ❑ Digital orthophotos

  {Insert notes.}
- ❑ Road Names
  - ❑ Stored as attributes in database
  - ❑ Placed as graphic elements for plotting. At what scale(s)?

  {Insert notes.}
- ❑ Railroads/railroad names

  {Insert notes.}
- ❑ Airports

  {Insert notes.}
- ❑ Rivers, streams, lakes, shorelines, coastline

  {Insert notes.}
- ❑ Are political boundaries (corporate, county, extraterritorial, etc.) current? ❑ Yes ❑ No

  {Insert notes.}
- ❑ Parks, military reservations, Native American lands

  {Insert notes.}
- ❑ Range, township, section lines

  {Insert notes.}
- ❑ Building footprints

  {Insert notes.}
- ❑ Parcels

  {Insert notes.}

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Base Map Information (Continued)

❑ Bridges

{Insert notes.}

❑ Flood control structures (e.g., culverts, levees, dams, weirs, floodwalls, jetties, etc.)

{Insert notes.}

❑ What bench marks, Elevation Reference Marks (ERMs), or other vertical control data are available for the community, county, or study area?

{Insert notes.}

Topographic Information

What elevation data are available?

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{Insert notes.}

What is the source of the topographic data (how were the data created)?

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{Insert notes.}

Do the data cover the floodplains for the flooding sources in the entire community or county being restudied? ❑ Yes ❑ No

{Insert notes.}

Are the data available now? If not, what is the projected completion date? ❑ Yes ❑ No

{Insert notes.}

What is the accuracy or resolution of the topographic data?

{Insert notes.}

When were the topographic data created, last updated, or reviewed for update needs?

Created	Last Updated	Reviewed
{Insert date.}	{Insert date.}	{Insert date.}

{Insert notes.}

Topographic Information (Continued)

What projection, horizontal datum, and vertical datum were used for the topographic data?

Projection	Horizontal Datum	Vertical Datum
{Insert notes.}	{Insert notes.}	{Insert notes.}

{Insert notes.}

In what format(s) are the data available?

{Insert notes.}

Contours	Digital Elevation Model (DEM)	Digital Terrain Model (DTM)	Triangulated Irregular Network (TIN)
{Insert contour interval.}	{Insert horizontal and vertical resolutions.}	{Insert notes.}	{Insert notes.}

{Insert notes.}

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Flood Hazard Data

Are digital flood hazard data available? If so, from whom? ❑ Yes ❑ No

{Insert notes.}

Have flood hazard data that have been converted to digital format been compared to the effective FIRMs to ensure that base map to flood hazard relationships have been preserved? ❑ Yes ❑ No

{Insert notes.}

What was the source of the digital flood hazard data and how were the data created?

{Insert notes.}

Do any new data tie in to the existing effective information? ❑ Yes ❑ No

{Insert notes.}

Do the data cover the entire community or county being restudied? ❑ Yes ❑ No

{Insert notes.}

Flood Hazard Data (Continued)

Are the data available now? If not, what is the projected completion date? ❑ Yes ❑ No

{Insert notes.}

What is the accuracy or resolution of each data set or type?

{Insert notes.}

When were the data created, last updated, or reviewed for update needs?

{Insert notes.}

Created	Last Updated	Reviewed
{Insert date.}	{Insert date.}	{Insert date.}

{Insert notes.}

Are Letters of Map Change (LOMCs) included in any digital data sets? ❑ Yes ❑ No

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{Insert notes.}

What projection, horizontal datum, and vertical datum were used for the flood hazard data sets?

FOR REFERENCE ONLY.

{Insert notes.}

Projection	Horizontal Datum	Vertical Datum
{Insert notes.}	{Insert notes.}	{Insert notes.}

In what file format(s) are the data available?

{Insert notes.}

How are the data tiled?

{Insert notes.}

Is a data dictionary or metadata available? ❑ Yes ❑ No

{Insert notes.}

Have flood hazard data that have been converted to digital format been compared to the effective FIRMs to ensure that base map to flood hazard relationships have been preserved? ❑ Yes ❑ No

{Insert notes.}

Flood Hazard Data (Continued)

What feature types do the flood hazard data sets contain? (Check all that apply.)

- ❑ 1% annual chance flood hazard areas

  {Insert notes.}

- ❑ 0.2% annual chance flood hazard areas

  {Insert notes.}

- ❑ Floodways

  {Insert notes.}

- ❑ Coastal Barrier Resources System areas

  {Insert notes.}

- ❑ Alluvial fans

  {Insert notes.}

- ❑ Base flood elevations, velocities, or depths

  {Insert notes.}

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- ❑ Cross sections

  {Insert notes.}

- ❑ Elevation Reference Marks (ERMs)

  {Insert notes.}

- ❑ LOMCs

  {Insert notes.}

- ❑ Are data for other flood frequencies available? ❑ Yes ❑ No

  {Insert notes.}

Do the flood hazard boundaries need to be fitted to newer or more detailed stream locations and/or topography than was previously used for the existing FIRM? ❑ Yes ❑ No

{Insert notes.}

Are new hydrologic and hydraulic models available? If so, please describe them. ❑ Yes ❑ No

{Insert notes.}

Do hydrologic and hydraulic models need inclusion? ❑ Yes ❑ No

{Insert notes.}

Flood Hazard Data (Continued)

Were the hydrologic and hydraulic data developed using automated modeling and mapping techniques? If so, describe them. ❑ Yes ❑ No

{Insert notes.}

Are digital files containing data needed for hydrologic or hydraulic modeling (e.g., land use or soils) available? ❑ Yes ❑ No

{Insert notes.}

Are supplemental data (e.g., photographs, etc.) available? ❑ Yes ❑ No

{Insert notes.}

Are supplemental data in digital format? ❑ Yes ❑ No

{Insert notes.}

Are there levees in this community? ❑ Yes ❑ No

{Insert notes.}

If levees are present, do they provide protection from the 1% annual chance flood event? ❑ Yes ❑ No

{Insert notes.}

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Is U.S. Army Corps of Engineers certification available for these levees? ❑ Yes ❑ No

{Insert notes.}

Do the coastal analyses reflect primary frontal dunes? ❑ Yes ❑ No

{Insert notes.}

Do the coastal analyses reflect wave heights? ❑ Yes ❑ No

{Insert notes.}

Does the community maintain hydrologic and hydraulic analyses that reflect future conditions? ❑ Yes ❑ No

{Insert notes.}

Are other hazard data available? If yes, what are they? ❑ Yes ❑ No

{Insert notes.}

Are elevation certificates for floodprone structures available in a database or other electronic format? ❑ Yes ❑ No

{Insert notes.}

I.1.6 Potential Obstacles to Project Completion Checklist Template

FEMA designed the Potential Obstacles to Project Completion Checklist Template, shown on pages I-30 to I-35, to record identified potential obstacles to the completion of a Flood Map Project, as well as to record creative solutions and/or alternatives to minimize or avoid potential obstacles. The assigned Project Team member shall check the type of obstacle identified, and then fill in the necessary information. The checklist is a "living" document that the assigned Project Team member shall update throughout the entire lifecycle of the Project, when necessary.

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Community Name	{Insert Community Name.}
Project Management Team	{List Project Management Team Members.}
Date Created	{Insert checklist completion date.}
Date Revised	{Insert checklist revision date.}
Date Revised	{Insert checklist revision date.}
Date Revised	{Insert checklist revision date.}

❑

Unable To Adequately Address Needs with Available Funding
Minimum Project Needs • {Insert needs.}
Estimated Funding Required • {Provide estimated funding level required.}
Possible Solutions or Alternatives • {List and/or discuss possible solutions or alternatives.}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

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❑ **Base Map Availability**

- ❑ USGS DOQ not available
- ❑ Local base map not available
- ❑ Local base map does not meet FEMA's minimum specifications. Explain why:

  (For additional information, visit FEMA' Web site at www.fema.gov/mit/tsd and view "Guidance Information for Base Map Specifications for New Digital Flood Insurance Rate Map Product." The following minimum standards must be met for FEMA to use community-supplied base map data rather than USGS DOQs for DFIRM production. Check those that apply to this project.)

  - ❑ Resolution
  - ❑ Horizontal Accuracy
  - ❑ Horizontal Reference System
  - ❑ Data Sources
  - ❑ Currency
  - ❑ Coverage
  - ❑ Availability
  - ❑ Restrictions on Use
  - ❑ Contents
  - ❑ Thematic Separation of Data
  - ❑ File Format

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❑ Data Structure ❑ Metadata
Comments: {Insert notes.}
Possible Solutions or Alternatives • {List and/or discuss possible solutions or alternatives for base map availability issues.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

❑

Hydrologic or Hydraulic Issues
Hydrologic & Hydraulic Issues • {List and/or discuss any hydrologic & hydraulic issues that could threaten the success of the project.}
Possible Solutions or Alternatives • {List and/or discuss possible solutions or alternatives for each hydrologic & hydraulic issue.}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

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❑ **Community Concerns**
Community Needs, Concerns, and/or Preferences • {List and/or describe any community needs, concerns, and/or preferences.}
Other Potential Community-Related Obstacles • {Discuss and/or describe any other obstacles posed by the community.}
Possible Solutions or Alternatives • {List and/or discuss possible solutions or alternatives to community-related issues.}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

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❑ **Reliance on Other Studies or Data**
Relationship to the Proposed Flood Project • {Describe how the dependent on-going study or studies tie in with the proposed flood mapping project.} • {Describe if, how, and why the dependent on-going study or studies could delay the proposed flood mapping project.} • {Describe data that will not be available within the project's scheduling constraints; e.g., topographic mapping.}

Possible Solutions • {List and/or discuss possible solutions or ways to work around this obstacle. For example, if the dependent on-going study or studies are a source of data for the proposed mapping project, are there alternative sources of data?}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

❑

Project Priority
Change in Priority • {List any possible changes in the priority for this project.}
Needs Update • {Discuss any updates to the needs that may affect the priority.}
Possible Solutions or Alternatives • {Describe appropriate course of action should priorities change.}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

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❑ **Other Considerations**
Federal/State/Non-Governmental Organizations • {Describe and/or discuss any politically motivated considerations that could delay/impede the project.}
Programmatic • {Describe and/or discuss any programmatic considerations that could delay/impede the project.}
Disaster-Related • {Describe and/or discuss any disaster-related issues or considerations that could delay/impede the project.}
Legal • {Describe and/or discuss any legal considerations that could delay/impede the project.}
Other • {Describe and/or discuss any additional considerations that could delay/impede the project.}
Possible Solutions or Alternatives • {Describe any possible solutions or alternatives.}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

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I.1.7 Draft Scope of Project Template

FEMA designed the Draft Scope of Project Template, shown on pages I-37 to I-41, to record the elements of the draft Scope of Project. The draft Scope of Project is based on mapping needs determined during the Mapping Needs Assessment Phase of the Flood Map Project and/or the research portion of the Scooping Phase of the Flood Map Project. The draft Scope of Project is a "living" document that the FEMA Lead and other Project Team members shall update, when necessary.

[February 2002]

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Scope of Project

{Insert Name of Project}

{Insert Date}

{Insert Revision Date}

{Insert Revision Date}

{Insert Revision Date}

{Insert Revision Date}

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{Insert Name(s) of Author(s)}

Introduction

{Insert paragraph describing the purpose of this project. The purpose statement should include a summary of the research and outreach activities completed. Note in the purpose statement that the project is subject to change due to community priorities and funding availability.}

1. Needs List

Mapping Need	Need Type	Source of Need
{Insert brief summary of need; e.g., "Restudy of Mill Brook" or "Convert Maps to DFIRM." Add new table row for each need.}	{Insert either "Flood Data Update" or "Map Maintenance."}	{Explain how the need was identified; e.g., community, MAPPING PARTNER Research, etc.}

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2. DFIRM Production

Check all that apply:

- ❑ Countywide
- ❑ Community-based
- ❑ Incorporate LOMCs
- ❑ Effective Information for Non-Revised Flooding Sources will be digitized

A. Proposed Paneling Scheme

{Describe and discuss the proposed paneling scheme for this project. Attach an index.}

B. Base Map

{Indicate the sources for base maps to be used for the project.}

Source	Date	Scale	Contour Interval	Coverage
{Insert source of base map. Note: Add table row for each source.}	{Insert date.}	{Insert scale.}	{Insert contour interval.}	{Describe coverage.}

{Additional comments}

C. Option Choices

- ❑ Resolve external mismatches
- ❑ Incorporate Physical Map Revision or Existing Data Studies
- ❑ Fit existing FIS profiles to newer topographic data
- ❑ Expand database to include:
  - {List what will be included in expanded database.}
- ❑ Fit Zone As to newer topo
- ❑ Map unmapped communities
- ❑ Convert to North American Vertical Datum of 1988
- ❑ Convert to metric
- ❑ Add supplemental images:

  {Examples: Scanned Documents, Engineering Study Data Package, Technical Support Data Notebook, etc.}

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- ❑ Replace ERMs with National Geodetic Survey benchmarks
- ❑ Include future conditions mapping
- ❑ Include erosion mapping
- ❑ Include other hazards:

  {Specify other hazards.}
- ❑ Other community options:

  {Specify other community options.}

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3. Description of Project Area (Add flooding source tables as needed)

Flooding Source: (Insert Name}

Hazard Identification Method		Data Collection	
Hydrology	Hydraulics	Field Surveys for Cross Sections and Structures	Topographic Data (Include Scale and Contour Interval)

Flooding Source: (Insert Name}

Hazard Identification Method		Data Collection	
Hydrology	Hydraulics	Field Surveys for Cross Sections and Structures	Topographic Data (Include Scale and Contour Interval)

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I.1.8 Draft Scope of Project Conference Call/Agenda Meeting Minutes Template

FEMA designed the Draft Scope of Project Conference Call/Agenda Meeting Minutes Template, shown on pages I-43 and I-44, to record the results of the conference call that the FEMA Lead will hold with the community once research has been completed and the draft Scope of Project has been prepared. If more than one conference call is conducted or more than one community is contacted, the FEMA Lead or other assigned FEMA staff shall prepare a separate form for each call.

[February 2002]

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Community/Mapping Project:	
Date:	**Case No.:**
FEMA Lead:	
Participants: 1. 6. 2. 7. 3. 8. 4. 9. 5. 10.	
Agenda Items	**Estimated Time:**
1. Introductions/Roll-Call	
{Insert notes.}	
2. Overview of Agenda for Conference Call	
{Insert notes.}	
3. Summary of Research Methods	
{Review how the draft Scope of Project was developed.}	
4. Discuss Draft Scope of Project: • Flooding sources to be studied • Flood hazard identification methods to be used • Data collection needs and methods • Proposed paneling scheme • Base map • DFIRM options • Digital Conversion of Existing Data	
{Insert notes.}	

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Agenda Items	Estimated Time:
5. Schedule Scoping Meeting and Identify Attendees	
{Insert notes.}	
6. Summary of Action Items	
{Insert notes.}	

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I.2 Scoping Meeting Activities

The templates, checklists, and forms that the FEMA Lead and other Project Team members shall use to record activities during the Project Scoping Meeting are summarized in Subsections I.2.1 through I.2.8.

[February 2002]

I.2.1 Scoping Meeting Item Checklist Template

FEMA designed the Scoping Meeting Item Checklist Template, shown on pages I-46 to I-48, for the FEMA Lead to use in recording what items the individual Project team members must bring to the Scoping Meeting. The FEMA Lead or other designated FEMA staff shall complete this checklist before the Scoping Meeting is held.

[February 2002]

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The following items are considered essential for the Scoping Meeting:

Item	Responsible Team Member
FIS Report(s)	
FIRM Panel(s)	
USGS Quad(s)	
Best Available Community Base Map(s)	
Effective FIRM Summary	
Available Data Inventory	
Scoping Map	
Draft Scope of Project	
Scoping Meeting Agenda/Minutes Form and Other Relevant Scoping Meeting Tools	

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Bring the following items, if available:

Available	Item	Responsible Team Member
❑ Yes ❑ No	Aerial Photographs and/or DOQQ Images	
❑ Yes ❑ No	Aerial Topography	
❑ Yes ❑ No	Pertinent Reports/Studies/Plans (e.g., Federal Agency Reports or Master Drainage Plans)	
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		

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The following community resources should also be available for the Scoping Meeting:

Available	Item	Responsible Team Member
❑ Yes ❑ No	Community Master Plan(s)	
❑ Yes ❑ No	As-Built Plans	
❑ Yes ❑ No	Drainage Master Plans	
❑ Yes ❑ No	Street Maps	
❑ Yes ❑ No	Zoning Maps	
❑ Yes ❑ No	Floodplain Ordinance(s)	
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		

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I.2.2 Document Transmittal Letter Template

FEMA designed the Document Transmittal Letter Template, shown on pages I-50 and I-51, for the FEMA Lead, FEMA Assistance Officer (AO), or FEMA Contracting Officer (CO) to use in distributing the Scoping Meeting Item Checklist and background information on the Flood Map Project to all individuals that will attend the Scoping Meeting.

[February 2002]

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Federal Emergency Management Agency
Region {Insert Regional Office Number}

{Date}

{Name of Community Official}
{Community Official's Title}
{Address 1}
{Address 2}
{Community, State ZIP code}

Dear {Name of Community Official}:

We have scheduled your community's Flood Mapping Project Scoping Meeting for {INSERT DATE OF SCOPING MEETING}. The meeting will be held at {INSERT TIME AND LOCATION OF MEETING}. Details regarding attendees, how you can prepare for the meeting, and what you will need to bring are listed below.

Flood Mapping Project:	{Insert the name of the Flood Mapping Project.}
Case Number:	{Insert Case Number.}
FEMA Lead:	{Name of FEMA Lead}
Attendees:	{Insert names of all attendees.}

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The following are attachments to this letter:

- Scoping Meeting Agenda
- Revised Draft Scope of Project
- Project Management Plan

The Project Management Team will bring the following items:

- {Add items, as necessary.}

Your community has agreed to provide the following for the Flood Mapping Project Scoping Meeting:

- As-Built Construction Plans:
- Development Proposals
- Topographic Mapping
- Community Master Plan
- Street Maps
- Zoning Maps
- Floodplain Ordinances

We look forward to working with the community officials of {INSERT NAME OF COMMUNITY} to ensure that the goals of this Flood Mapping Project are met. This will allow {INSERT NAME OF COMMUNITY} to administer effective floodplain management programs. If you have any questions, please do not hesitate to contact the Director, Mitigation Division of the FEMA Region {Region Number} Office, at {Telephone}, or {Name of FEMA HQ Engineer} at our Headquarters Office in Washington, D.C., at {Telephone}, or by facsimile at {Fax Number}.

THIS DOCUMENT HAS BEEN SUPERSEDED.
FOR REFERENCE ONLY.

Sincerely,

{INSERT NAME AND TITLE OF FEMA LEAD AND/OR CONTRACTING OFFICER}

cc: {FEMA HQ Engineer}, FEMA Headquarters

{OTHER PROJECT TEAM MEMBERS, AS NECESSARY}

Attachments

I.2.3 Scoping Meeting Attendance Sheet Template

FEMA designed the Scoping Meeting Attendance Sheet Template, shown on page I-53, for the FEMA Lead or other designated FEMA staff to use in recording the name, title, organization/affiliation, and contact information for the Project Team members and other individuals that attend the Scoping Meeting.

[February 2002]

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Community/Mapping Project:				
Date/Time:		**Case No.:**		
FEMA Lead:		**Location of Meeting:**		
Name	**Title**	**Organization/ Affiliation**	**Telephone/Fax**	**E-Mail Address**
			(P) (F)	
			(P) (F)	
			(P) (F)	
			(P) (F)	
			(P) (F)	
			(P) (F)	

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I.2.4 Scoping Meeting Agenda/Meeting Minutes Template

FEMA designed the Scoping Meeting Agenda/Meeting Minutes Template, shown on page I-55, for the FEMA Lead or other designated FEMA staff to use in documenting the agenda and results of the Scoping Meeting. The estimated times listed in the template are simply a guideline to assist in running the meeting.

[February 2002]

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Scoping Meeting Agenda / Meeting Minutes

Community / Mapping Project:	
Date / Time:	**Case No.:**
FEMA Lead:	**Location of Meeting:**
Participants:	
1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

Agenda Items	Estimated Time
Introduction/Sign-In Sheet	10 minutes
{Insert notes.}	
Overview of Scoping Meeting Agenda	5 minutes
{Insert notes.}	
National Flood Insurance Program Overview	10 minutes
{Insert notes.}	
Needs List Development	15 to 45 minutes
{Insert notes.}	
Scope of Project Refinement	30 to 45 minutes
{Insert notes.}	
Community and Partner Agreement Discussion	15 minutes
{Insert notes.}	
Summary of Action Items	5 minutes
{Insert notes.}	
Total Time:	**1 ¾ to 2 ½ hours**

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I.2.5 Task Assignment and Scheduling Worksheet Template

FEMA designed the Task Assignment and Scheduling Worksheet Template, shown on page I-57, to document task assignments made at the Scoping Meeting to Project Team members and to develop a schedule for the Flood Map Project. The assigned Project Team member that records this information shall refer to the Flood Map Project Process flowchart in Subsection I.2.6 and mark any components that will not be included as not applicable under the column entitled "Responsible Entity."

[February 2002]

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Task Assignment and Scheduling Worksheet

Case No. _____

(See also the Flood Map Project Process flowchart.
Mark any components that will not be included as "N/A" under "Responsible Entity.")

Community/Flood Map Project:			
Map Project Component	**Responsible Partner**	**Target Due Date**	**Typical Timeframe**
Field Surveys and Reconnaissance			1-8 months
Topographic Data Development			1-8 months
Independent QA/QC Review of Topographic Data			≤ 1 month
Hydrologic Analyses			1-6 months
Independent QA/QC Review of Hydrologic Analyses			≤ 1 month
Hydraulic Analyses			2-8 months
Independent QA/QC Review of Hydraulic Analyses			1-3 months
Floodplain Mapping (Revised Areas)			1-3 months
Independent QA/QC Review of Floodplain Mapping (Revised Areas)			≤ 1 month
Base Map Acquisition			1-2 months
DFIRM Production (Non-Revised Areas)			3-6 months
DFIRM Production (Merge Effective and Revised Information)			≤ 1 month
Application of DFIRM Graphics and Database Specifications			≤ 1 month
Independent QA/QC Review of Final DFIRM Product			≤ 1 month
Preliminary DFIRM and FIS Report Distribution			≤ 1 week
Post-Preliminary Processing			3-4 months
Final DFIRM and FIS Report Distribution			1-2 months

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I.2.6 Flood Map Project Process Flowchart

FEMA designed the Flood Map Project Process flowchart, shown on page I-59, as a tool that the FEMA Lead and all Project Team members shall use for developing the Flood Map Project schedule at the Scoping Meeting.

[February 2002]

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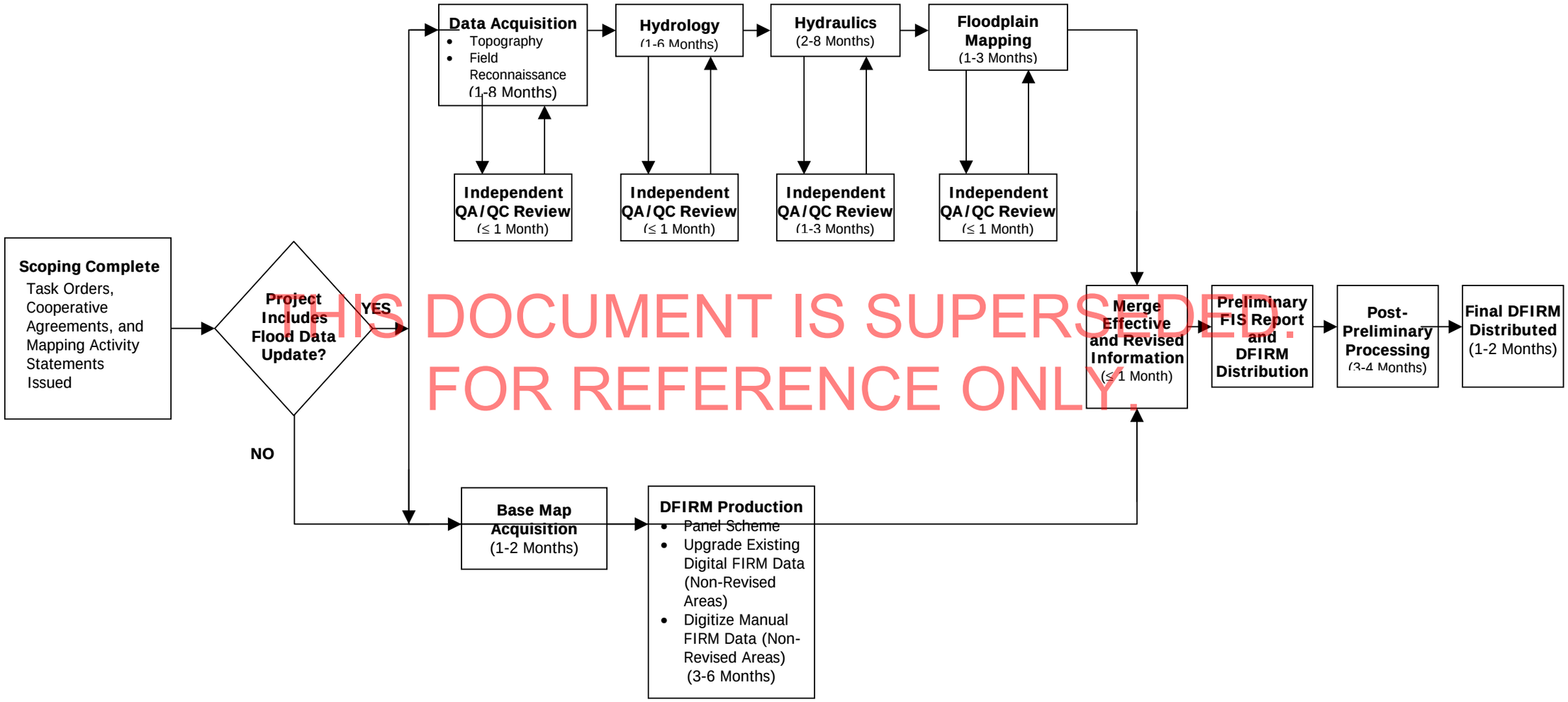
Flood Map Project Process



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Note: Many of these steps can be conducted concurrently. Initiation of most steps is not necessarily contingent on the completion of previous steps.

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I.2.7 Community Partner Memorandum of Agreement Template

FEMA designed the Community Partner Memorandum of Agreement Template, shown on pages I-62 and I-63, to assist the FEMA Lead and/or AO in developing an agreement between FEMA and a community that will participate in a Flood Map Project. FEMA and the community will sign this Agreement when a community will be contributing work or base map data, but will not be participating in the Cooperating Technical Partners initiative.

If the community will not be participating in the Project by contributing work or data, FEMA will sign a Community Partner Memorandum of Agreement with the community to:

- Document the good faith efforts to collaboratively assess the community's needs;
- Develop an appropriate Scope of Project; and
- Develop and publicize the updated map that results from the Flood Map Project.

[February 2002]

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Federal Emergency Management Agency
Community Partner Memorandum of Agreement

AGREEMENT is made on {Insert Date}, by these parties: {Insert name(s) of community and/or partner(s)} and the Federal Emergency Management Agency (FEMA).

BECAUSE the National Flood Insurance Program (NFIP), established by the National Flood Insurance Act of 1968, has several purposes, the most significant being:

- To better indemnify individuals from losses through the availability of flood insurance;
- To reduce future flood damages through community floodplain management regulations; and
- To reduce costs for disaster assistance and flood control.

BECAUSE a critical component of this program is the identification and mapping of the nation's floodplains to create a broad-based awareness of the flood hazard and to provide the data necessary for community floodplain management programs and to actuarially rate flood insurance;

BECAUSE FEMA administers the NFIP and is authorized by §1360 of the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4101), to establish and update flood-risk zone data in floodplain areas. Further, in the identification of flood-prone areas, FEMA is authorized to consult with, receive information from, and enter into agreements or other arrangements with the head of any State, regional, or local agency in order to identify these floodplain areas;

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BECAUSE FEMA encourages strong Federal, State, regional, and local partnerships for the purposes of reducing flood losses and disaster assistance; and FEMA and its State, regional, and local partners have determined that it is advantageous to encourage and formalize greater cooperation in the flood hazard identification and mapping processes;

BECAUSE {Insert name(s) of community and/or partner(s)} participates in the NFIP {indicate if the community or partner shares flood protection and/or floodplain management responsibilities with communities that participate in the NFIP}, and {Insert name(s) of community and/or partner(s) or representatives of NFIP participating community}, {Insert has or have} been deemed by FEMA to be in good standing in the NFIP; and

BECAUSE {Insert name(s) of community and/or partner(s)} {Insert has or have} expressed a desire to cooperate with FEMA in the flood hazard identification process and have worked with FEMA to identify and prioritize {Insert name(s) of community and/or partner(s). Note name is possessive here.} flood mapping needs and develop a scope of study to produce an updated, digital flood map.

NOW, THEREFORE, it is mutually agreed that the parties enter into this agreement to work together to produce an updated, digital flood map for {Insert name(s) of community and/or partner(s)}.

Community Authorized Representative	Date
Community Authorized Representative (Printed)	Date
FEMA Authorized Representative	Date
FEMA Authorized Representative (Printed)	Date

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[February 2002]

I.2.8 Cooperating Technical Partners Memorandum of Agreement Template

FEMA designed the Cooperating Technical Partners Partnership Agreement Template, shown on pages I-65, I-66, and I-67, to assist the FEMA Lead and/or AO in developing an agreement with a community, regional agency, or State agency that chooses to participate in the Cooperating Technical Partners initiative. Additional information on the Cooperating Technical Partners initiative may be found on the FEMA Flood Hazard Mapping website at www.fema.gov/mit/tsd/CTP_main.htm.

This Partnership Agreement is a broad statement of principle, emphasizing the value of the National Flood Insurance Program's three components of insurance, floodplain management, and mapping. Through this Partnership Agreement, FEMA and the community, regional agency, or State agency acknowledge the fundamental importance of flood hazard identification in the successful reduction of future flood losses and commit to the flood hazard identification effort.

[February 2002]

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Federal Emergency Management Agency
Cooperating Technical Partners
Partnership Agreement

AGREEMENT is made on {Insert Date}, by these parties: {Insert name(s) of community and/or partner(s)} and the Federal Emergency Management Agency (FEMA).

BECAUSE the National Flood Insurance Program (NFIP), established by the National Flood Insurance Act of 1968, has several purposes, the most significant being:

- To better indemnify individuals from losses through the availability of flood insurance;
- To reduce future flood damages through community floodplain management regulations; and
- To reduce costs for disaster assistance and flood control.

BECAUSE a critical component of the NFIP is the identification and mapping of the nation's floodplains to create a broad-based awareness of the flood hazard and to provide the data necessary for community floodplain management programs and to actuarially rate flood insurance;

BECAUSE FEMA administers the NFIP and is authorized by §1360 of the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4101), to establish and update flood-risk zone data in floodplain areas. Further, in the identification of flood-prone areas, FEMA is authorized to consult with, receive information from, and enter into agreements or other arrangements with the head of any State, regional, or local agency in order to identify these floodplain areas;

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BECAUSE FEMA encourages strong Federal, State, regional, and local partnerships for the purposes of reducing flood losses and disaster assistance; and FEMA and its State, regional, and local partners have determined that it is advantageous to encourage and formalize greater cooperation in the flood hazard identification and mapping processes;

BECAUSE {Insert name(s) of community and/or partner(s)} participates in the NFIP {indicate if the community or partner shares flood protection and/or floodplain management responsibilities with communities that participate in the NFIP}, and {Insert name(s) of community and/or partner(s) or representatives of NFIP participating community}, {Insert has or have} been deemed by FEMA to be in good standing in the NFIP; and

BECAUSE {Insert name(s) of community and/or partner(s)} {Insert has or have} expressed a desire to cooperate with FEMA in the flood hazard identification process and have worked with FEMA to identify and prioritize {Insert name(s) of community and/or partner(s). Note name is possessive here.} flood mapping needs and develop a scope of study to produce an updated, digital flood map; and

BECAUSE {Insert name(s) of community and/or partner(s)} {Insert has or have} expressed a desire to perform certain functions in the flood hazard identification process and {Insert has or have} provided evidence that it {Insert has or have} sufficient technical capability and will dedicate the resources necessary to perform those functions.

NOW, THEREFORE, It is mutually agreed that the parties enter into this Agreement to work together to produce an updated, digital flood map for {Insert name(s) of community and/or partner(s)}.

1. CONSULTATIONS

The parties shall consult with each other to fully integrate each other's contributions into flood hazard identification efforts. Questions regarding the execution of the agreement will be resolved by an implementation committee consisting of a FEMA representative and a representative of {Insert name(s) of community and/or partner(s)}. In States where statutory and/or regulatory requirements require State review and/or approval of new flood hazard data, a State representative will also serve on the implementation committee, as appropriate.

2. EVALUATION AND REPORTING

The parties shall annually review the partnership created by this Agreement to determine and document the activities undertaken to maintain accurate flood hazard data, and to revise the Agreement as necessary.

3. RESOURCE COMMITMENT

The parties agree to commit the appropriate human and available financial resources sufficient to coordinate effectively with all entities impacted by flood hazard identification efforts to implement this Agreement.

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4. STANDARDS

Unless otherwise agreed to by the parties, all flood hazard identification activities will be accomplished in accordance with the standards documented in *Guidelines and Specifications for Flood Hazard Mapping Partners* , dated February 2002, and subsequent updates.

5. TERM

The respective duties, responsibilities, and commitments of the parties in this Agreement shall begin on the date this agreement is signed by the parties and may be periodically renewed, revised, or terminated at the option of any of the parties. The parties agree that a 60-day notice shall be given prior to the termination of this Agreement.

THEREFORE, each party has caused this Agreement to be executed by its duly authorized representatives on the date this Agreement is signed.

CTP Authorized Representative	Date
CTP Authorized Representative (Printed)	Date
FEMA Authorized Representative	Date
FEMA Authorized Representative (Printed)	Date
State Representative	Date
State Representative (Printed)	Date

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(In States where statutory and/or regulatory requirements require State review and/or approval of new flood hazard data, the State must be a signatory to a community's Agreement.)

[February 2002]

I.3 Post-Scoping Meeting Activities

The templates, checklists, and forms that the FEMA Lead and other Project Team members shall use to record activities after the Project Scoping Meeting are summarized in Subsections I.3.1, I.3.2, and I.3.3.

[February 2002]

I.3.1 Statement of Work Template

FEMA designed the Statement of Work Template (pages I-70 to I-101) to assist the FEMA Lead in documenting task assignments and standards for a Flood Map Project. The FEMA Lead shall prepare one Statement of Work for an entire Flood Map Project, covering all of the following tasks that apply to that Flood Map Project:

- Task 1—Field Surveys and Reconnaissance;
- Task 2—Topographic Data Development;
- Task 3—Independent QA/QC Review of Topographic Data;
- Task 4—Hydrologic Analyses;
- Task 4A—Coastal Hazard Analyses
- Task 5—Independent QA/QC Review of Hydrologic Analyses;
- Task 5A—Independent QA/QC Review of Coastal Hazard Analyses;
- Task 6—Hydraulic Analyses;
- Task 7—Independent QA/QC Review of Hydraulic Analyses;
- Task 8—Floodplain Mapping (Detailed Riverine or Coastal Analysis);
- Task 8A—Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data);
- Task 8—Floodplain Mapping (Refinement or Creation of Zone A);

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- Task 9—Independent QA/QC Review of Floodplain Mapping (Revised Areas);
- Task 10—Base Map Acquisition;
- Task 11—DFIRM Production (Non-Revised Areas);
- Task 12—DFIRM Production (Merge Effective and Revised Information);
- Task 13—Preliminary DFIRM and FIS Report Distribution;
- Task 14—Post-Preliminary Processing; and
- Task 15—Reporting

Using the template, the resulting Statement of Work shall clearly identify the responsible Project Team member assigned to complete each Project task and the standard that each Project Team member shall meet for completion of each task and delivery of final products. The matrix of standards in the "Applicable Standards" section of the template (page I-98), subject to change when these Guidelines are updated, is a guide. Mapping Partners are strongly encouraged to use the listed references to standards to identify key sections of these Guidelines applicable to the task, but not limit their familiarity with these Guidelines to those sections. Final decisions regarding the standards to be met shall be made by the FEMA Lead in consultation with the rest of the Project Management Team.

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[February 2002]

Statement of Work

{Insert Name of Project}

{Insert Case Number}

{Insert Date}

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Introduction

The purpose of this mapping project is to develop {new/updated} Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) for {insert name of community(ies) or county}. The FIS and FIRMs will be produced in {countywide or community-based} digital FIRM (DFIRM) format.

<Delete this text and the table below if the project includes only conversion of maps to DFIRM>Additionally, this project will include developing new and/or updated flood data, as summarized in the following table:

Flooding Source	Reach Limits	Hydrology	Hydraulics	Floodplain Mapping	Redelin-eation of SFHAs Using Effective Profiles	Refine/ Establish Zone As
{Insert name of flooding source}	{Insert reach limits}	{Check if applicable}	{Check if applicable}	{Check if applicable}	{Check if applicable}	{Check if applicable}

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This project will be completed by {insert names of Mapping Partner that will participate in this project}. The tasks, and who they will be completed by, are described in the Scope of Work below.

Scope of Work

The following sections describe the specific tasks associated with this mapping project. Each task description identifies the responsible entity, the applicable standards, and resultant deliverables.

<Include only those tasks listed below that apply to this mapping project>

<If any of the tasks are assigned to more than one project team member, copy the applicable subsection and renumber it using subletters (e.g., hydraulic analysis of different flooding sources can be divided and designated as Task 6a and Task 6b).>

Tasks	Mapping Partner No. 1	Mapping Partner No. 2	Mapping Partner No.3
Task 1 – Field Surveys and Reconnaissance			
Task 2 – Topographic Data Development			
Task 3 – Independent QA/QC Review of Topographic Data			
Task 4 –Hydrologic Analyses			
Task 4A –Coastal Hazard Analyses			
Task 5–Independent QA/QC Review of Hydrologic Analyses			
Task 5A–Independent QA/QC Review of Coastal Hazard Analyses			
Task 6 – Hydraulic Analyses			
Task 7 – Independent QA/QC Review of Hydraulic Analyses			
Task 8 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)			
Task 8A – Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)			
Task 8B – Floodplain Mapping (Refinement or Creation of Zone A)			
Task 9 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)			
Task 10 – Base Map Acquisition			
Task 11 – DFIRM Production (Non-Revised Areas)			
Task 11A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)			

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Tasks	Mapping Partner No. 1	Mapping Partner No. 2	Mapping Partner No.3
Task 12 – DFIRM Production (Merge Revised and Non-Revised Information)			
Task 12A – Application of DFIRM Graphic and Database Specifications			
Task 12A – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphic and Database Specifications			
Task 13 – Preliminary DFIRM and FIS Report Distribution			
Task 14 – Post-Preliminary Processing			
Task 15 – Reporting			

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Task 1 - Field Surveys and Reconnaissance

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: To supplement any field reconnaissance conducted during the scoping phase of this project, {insert responsible party} 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, this task includes conducting field surveys, including obtaining channel and floodplain cross-sections, identifying or establishing elevation reference marks (ERMs), and obtaining the physical dimensions of hydraulic and flood control structures. {Insert responsible party} is responsible for coordinating with other team members collecting topographic data under Task 2 of this Statement of Work (SOW).

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead:

<Add, modify or delete deliverables below, as necessary>

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- A report summarizing the findings of the field reconnaissance.
- Maps and drawings that provide the detailed survey results.
- Survey note book containing cross sections and structural data.

Task 2 - Topographic Data Development

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: To supplement the field surveys conducted under Task 1 of this SOW, additional topographic data of the overbank areas of flooding sources will be obtained to delineate floodplain boundaries. Specifically, new topographic data will be generated for {insert flooding souce(s)} using {Insert method for collecting additional topopgrahic data}. {Insert responsible party} is responsible for coordinating with other team members conducting field surveys under Task 1 of this SOW.

<Optional paragraph if automated H&H is used>This task also consists of developing topographic maps and/or Digital Elevation Models (DEMs) for the subject flooding sources using the data collected in Task 1 and 2. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this Task raised during the independent QA/QC review (Task 3 of this SOW).

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: Upon completion of topographic data collection and processing for {insert flooding sources}, this data will be submitted to {insert name of party responsible for QA/QC review of the topographic data} for independent review under Task 3 of this SOW. Data for the remaining flooding sources will be submitted for an independent QA/QC review at the completion of this task.

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In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

FOR REFERENCE ONLY.

<Add, modify or delete deliverables below, as necessary>

- Hardcopy topographic maps.
- Completed Form No. 5 of *Revisions to National Flood Insurance Program Maps, Application/Certification Forms and Instructions* (MT-2).
- Report summarizing methodology and results.
- Triangular Irregular Network (TIN) data on CD-ROM.
- Checkpoint analyses to assess the accuracy of TIN data including Root Mean Square Error (RMSE) calculations to support vertical accuracy.
- Identification of remote sensing data voids and methods used to supplement data voids.
- NGS data sheets for Network Control Points (NCP) used to control remote sensing and ground surveys.

Task 3 - Independent Quality Assurance/Quality Control Review of Topographic Data

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the mapping data generated by {Insert party responsible for conducting the topographic information} under Task 2 of this SOW to ensure that this information is consistent with FEMA standards and standard engineering practice and are sufficient to revise the FIRM.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review.
- Recommendations to resolve any problems that arise as a result of the QA/QC review.

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Task 4 – Hydrologic Analyses

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Hydrologic analyses will be completed for approximately {insert number of square miles} square miles of drainage area for the flooding source(s) listed in the Introduction of this Statement of Work. The hydrologic methods used for this analysis will be {insert the hydrologic methods to be used. Include a table if multiple methods are used}. Peak flood discharges will be calculated for the {specify recurrence intervals} annual chance storms. These flood discharges will be the basis for subsequent hydraulic analyses of the subject flooding sources. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this Task raised during the independent QA/QC review (Task 5 of this SOW).

<Optional paragraph for GIS-based modeling> If GIS-based modeling is used, automated data processing and modeling algorithms will be documented and provided to FEMA to ensure they are consistent with the standards outlined above. Digital data sets (such as elevation, basin, or land use data) will be documented and provided to FEMA for approval prior to performing the analyses to ensure they meet minimum requirements. If non-commercial (i.e., custom-developed) software is used for the analysis, then full user documentation, technical algorithm documentation, and the software will be provided to FEMA for review prior to performing the scope of work.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

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Deliverables: Upon completion of hydrologic modeling for {Insert flooding sources; specifiy a subset of all flooding sources being analyzed}, the results will be submitted to {insert name of party responsible for QA/QC review of the hydrologic modeling} for independent review under Task 5 of this SOW. The results for the remaining flooding sources will be submitted for QA/QC review at the completion of this task.

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In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead:

<Add, modify or delete deliverables below, as necessary>

- Digital copies of all hydrologic modeling (input and output) files for {specify recurrence intervals}.
- "Summary of Discharge" Table(s) for each subject flooding source.
- Appropriate Mapping Partner application/certification form for hydrology.
- All backup data used in the analysis.
- <Optional for GIS-based modeling> For GIS-based modeling, deliverables include all input and output data, intermediate data processing products, and GIS data layers.

Task 4A – Coastal Hazard Analyses

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Coastal analyses will be completed for approximately {Insert Number of Transects} transects along {Insert Number of Miles} miles of shoreline, including the following coastal flooding sources: {Insert names of flooding source(s) or reference attached list}. Analyses will include: {Insert all that apply to this activity (e.g., Stillwater Elevations (SWEL) determinations, wave setup, wave height analyses, erosion analyses and wave runup)}.In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this Task raised during the QA/QC review (Task 5A of this SOW).

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: Upon completion of the analyses for {Insert flooding sources; specifiy a subset of all flooding sources being analyzed}, the results will be submitted to {insert name of party responsible for QA/QC review} for independent review under Task 5A. The results for the remaining flooding sources will be submitted for QA/QC review at the completion of this task.

In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead:

- Digital 1- and 0.2-percent-annual chance floodplain boundaries and hazard zones;
- Digital wave envelope profiles for each transect representing the 1-percent-annual-chance stillwater and wave crest elevations and ground profile conditions;
- Draft Flood Insurance Study (FIS) report materials;
- Draft work maps used to prepare digital floodplain boundaries and hazard zones with each transect located accordingly;
- Digital copies of all coastal modeling (input and output files); and
- Copies of any other supporting computations.

In addition to the TSDN, a coastal study technical documentation notebook with all backup data, description of methodology, and input and output files used in the analyses and mapping (see Appendix D of *Guidelines and Specifications for Flood Hazard Mapping Partners*).

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Task 5 - Independent Quality Assurance/Quality Control Review of Hydrologic Analyses

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the technical, scientific, and other information submitted by {Insert party responsible for conducting the hydrologic analysis} under Task 4 of this SOW 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 will include, at a minimum, the following:

<Delete or add tasks below, as necessary>

- Review submittal for technical and regulatory adequacy, required information, application/certification forms, and supporting data and documentation. The technical review will focus on:
  - Use of acceptable models.
  - Use of appropriate methodology(ies) for area of study or restudy.
  - Correctly applied methodology(ies)/model(s), including Quality Control of input parameters.
  - Comparison with gage data and/or regression equations, if appropriate.
  - 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.

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Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review.
- Recommendations to resolve any problems that arise as a result of the QA/QC review.

Task 5A - Independent Quality Assurance/Quality Control Review of Coastal Hazard Analyses

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the technical, scientific, and other information submitted by {Insert party responsible for conducting the coastal hazard analysis} under Task 4A of this SOW 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 will include, at a minimum, the following:

<Delete or add tasks below, as necessary>

- Review submittal for technical and regulatory adequacy, required information, application/certification forms, and supporting data and documentation. The technical review will focus on:
  - Use of acceptable models;
  - Use of appropriate methodology(ies) for area of study or restudy; and
  - Correctly applied methodology(ies)/model(s), including Quality Control of input parameters.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for review.

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Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the independent QA/QC review.
- Recommendations to resolve any problems that arise as a result of the independent QA/QC review.

Task 6 – Hydraulic Analyses

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Hydraulic analyses will be completed for approximately {insert number of miles} miles of the flooding sources listed in the Introduction of this SOW. The modeling will include the {insert recurrence intervals} annual chance events based on peak discharges computed under Task 4 of this SOW. The hydraulic methods used for this analysis will include {insert the hydraulic methods to be used. Include a table if multiple methods are used.}. Cross section and field data collected under Task 1 of this SOW will be used to prepare the hydraulic analyses. The hydraulic analyses will be used to establish flood elevations and floodways for the subject flooding sources. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this task raised during the independent QA/QC review (Task 7 of this SOW).

<Optional paragraph for GIS-based modeling> Automated data processing and modeling algorithms for GIS-based modeling will be documented and provided to FEMA to ensure they are consistent with the standards outlined above. Digital data sets will be documented and provided to FEMA for approval prior to performing the analyses to ensure they meet minimum requirements. If non-commercial (i.e., custom-developed) software is used for the analysis, then full user documentation, technical algorithm documentation, and the software will be provided to FEMA for review prior to performing the scope of work.

<Add additional details regarding the scope, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

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Deliverables: Upon completion of hydraulic modeling for {Insert flooding sources; specifiy a subset of all flooding sources being analyzed.}, the results will be submitted to {insert name of party responsible for QA/QC review of the hydraulic modeling} for independent review under Task 7 of this SOW. The results for the remaining flooding sources will be submitted for a final QA/QC review at the completion of this task.

In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead:

<Add, modify or delete deliverables below, as necessary>

- Digital profiles of the 10-, 2-, 1- and 0.2-percent-annual-chance water-surface elevations representing existing conditions;
- Floodway Data Table(s) for each subject flooding source;
- Digital copies of all hydraulic modeling (input and output) files;
- All backup data used in the analysis.
- <Optional for GIS-based modeling> 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.

Task 7 - Independent Quality Assurance/Quality Control Review of Hydraulic Analyses

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the technical, scientific, and other information submitted by {insert party responsible for conducting the hydraulic analysis} under Task 6 of this SOW 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 will include, at a minimum, the following:

<Delete or add tasks below, as necessary>

- Review submittal for technical and regulatory adequacy, required information, application/certification forms, and supporting data and documentation. The technical review will focus on
  - Use of acceptable models;
  - Starting water-surface elevations;
  - Cross-section geometry;
  - Manning's "n" values and expansion/contraction coefficients;
  - Bridge and culvert modeling;
  - Discharges;
  - Floodway methods; and
  - Tie-in to upstream and downstream non-revised Flood Profiles.
- When the HEC-2 or HEC-RAS model is used, the reviewer will utilize the CHECK-2 or CHECK-RAS programs 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.

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Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the independent QA/QC review.
- Recommendations to resolve any problems that arise as a result of the independent QA/QC review.

Task 8 - Floodplain Mapping (Detailed Riverine or Coastal Analysis)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Digital floodplain boundaries and floodway boundaries (if required) will be delineated for the flooding sources listed in Tasks 4A and 6 of this SOW. The mapping will incorporate all revised modeling and newly acquired topographic information. The floodplain boundaries for the {insert recurrence intervals} recurrence intervals and a floodway (if required) will be delineated on a digital work map based on topographic data developed under Task 2 of this SOW. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this task raised during the QA/QC review (Task 9 of this SOW).

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: Upon completion of floodplain mapping for {Insert flooding sources; specify a subset of all flooding sources being remapped}, the results will be submitted to {insert name of party responsible for QA/QC review of the hydrologic modeling} for independent review under Task 9 of this SOW. The mapping for the remaining flooding sources will be submitted for QA/QC review at the completion of this task.

In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead:

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<Add, modify or delete deliverables below, as necessary>

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- Digital work maps with the 1- and 0.2-percent-annual chance floodplain boundaries and floodway boundaries (if required) delineated. These maps should also include cross sections, BFEs, and flood insurance risk zone designation labels.
- <For Coastal Areas—delete if not for coastal area>Digital work map with the Coastal High Hazard Area (V Zone) delineated along {Indicate either Atlantic Ocean, Gulf of Mexico, Great Lakes, Pacific Ocean, or other.} shorelines. These maps should include transect locations, BFEs, and flood insurance risk zone designation labels.
- Any backup or supplemental information used in the mapping required for the independent QA/QC review (Task 9 of this SOW) is to be included.

Task 8A - Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Digital floodplain boundaries will be delineated for the flooding sources listed in the Introduction to this SOW. The mapping will incorporate newly acquired topographic information. The floodplain boundaries for the 1- and 0.2-percent-annual-chance floods will be delineated on a digital work map based on topographic data developed under Task 2 of this SOW. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this task raised during the independent QA/QC review (Task 9 of this SOW).

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: Upon completion of floodplain mapping for {Insert flooding sources; specify a subset of all flooding sources being remapped}, the results will be submitted to {insert name of party responsible for QA/QC review of the hydrologic modeling} for independent review under Task 9 of this SOW. The mapping for the remaining flooding sources will be submitted for an independent QA/QC review at the completion of this task.

In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead:

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<Add, modify or delete deliverables below, as necessary>

FOR REFERENCE ONLY.

- Digital work maps with the 1- and 0.2-percent-annual chance floodplain boundaries and floodway boundaries (if delineated on the effective FIRM or FBFM) delineated. These maps should also include cross sections, BFEs, and flood insurance risk zone designation labels as shown on the FIRM and FBFM.

- <For Coastal Areas—delete if not for coastal area>Digital work map with the Coastal High Hazard Area (V Zone) delineated along {Indicate either Atlantic Ocean, Gulf of Mexico, Great Lakes, Pacific Ocean, or other.} shorelines. These maps should include transect locations, BFEs, and flood insurance risk zone designation labels.

Any backup or supplemental information used in the mapping required for the independent QA/QC review (Task 9 of this SOW) is to be included.

Task 8B - Floodplain Mapping (Refinement or Creation of Zone A)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Digital floodplain boundaries will be delineated for the flooding sources listed in the Introduction to this SOW. The mapping will incorporate newly acquired topographic information. The floodplain boundaries for the 1-percent-annual-chance flood will be delineated on a digital work map based on topographic data developed under Task 2 of this SOW. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this task raised during the independent QA/QC review (Task 9 of this SOW).

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW. {insert responsible party}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 before analysis and mapping begin.

Deliverables: Upon completion of floodplain mapping for {Insert flooding sources; specify a subset of all flooding sources being remapped}, the results will be submitted to {insert name of party responsible for QA/QC review of the hydrologic modeling} for independent review under Task 9 of this SOW. The mapping for the remaining flooding sources will be submitted for an independent QA/QC review at the completion of this task.

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In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead:

FOR REFERENCE ONLY.

<Add, modify or delete deliverables below, as necessary>

- Digital work maps with the 1-percent-annual chance floodplain boundaries delineated. These maps should include flood insurance risk zone designation (Zone A) labels.
- Written summary of the analysis methodologies used shall be included.
- <For Coastal Areas—delete if not for coastal area>Digital work map with the Coastal High Hazard Area (V Zone) delineated along {Indicate either Atlantic Ocean, Gulf of Mexico, Great Lakes, Pacific Ocean, or other.} shorelines. These maps must include flood insurance risk zone designation labels.
- 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 (Task 9 of this SOW) is to be included. If computer models are used, input and output should be provided in both hardcopy and digital (CD-ROM, 3.5" diskette, or zip disk) format.
- If automated GIS-based models are applied, all input data, output data, intermediate data processing products, and GIS data layers shall be submitted.

Task 9 - Independent Quality Assurance/Quality Control Review of Floodplain Mapping (Revised Areas)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the floodplain work maps submitted by {Insert party responsible for conducting the floodplain mapping} under Tasks 8, 8A, and 8B of this SOW to ensure that the results of the hydraulic analyses are accurately represented on the work maps. This work will include, at a minimum, the following:

<Add, modify or delete tasks below, as necessary>

- Cross sections were properly located and oriented on the work map and agree with the Floodway Data Table.
- The Base Flood Elevations (BFEs) shown on the work map are properly located and agree with the results of the hydraulic modeling.
- The floodway widths agree with the widths shown in the Floodway Data Table(s) and the results of the hydraulic modeling.
- The floodplain boundaries agree with the flood elevations shown in the Floodway Data Table(s) and the contour lines and other topographic information shown on the work maps.
- For coastal studies, setup and runup height elevations shown on the work map agree with those shown on the data table(s), and stillwater elevations are shown where coastal and riverine flooding studied in detail join.
- Zone designations are indicated properly.

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Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies and providing recommendations to resolve them or agreeing with the mapping results.
- Recommendations to resolve any problems that arise as a result of the QA/QC review.
- An annotated work map with all questions and/or concerns indicated will be provided, if necessary.

Task 10 - Base Map Acquisition

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: This task consists of obtaining the digital base map {specify which one} for the project, and includes the following activities:

<Add, modify or delete tasks below, as necessary>

- 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 conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

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- Written certification that the digital data meet the minimum standards and specifications.
- Documentation that the digital base map can be used by FEMA.

Task 11 – Digital Flood Insurance Rate Map Production (Non-Revised Areas)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: For all flooding sources except those specified in the Introduction to this SO W (that will have updated flood data developed under Tasks 1 – 9), the effective FIRMs and Flood Boundary Floodway Maps (FBHMs) will be converted to digital format that conforms with FEMA DFIRM specifications. The base map acquired under Task 10 will be used for the conversion. The scope of this task covers the digitization of {insert number of panels} FIRM panels and {insert number of panels} FBFM panels. Letters of Map Change (LOMCs) issued since the current effective FIRM for each affected community will also be incorporated. The digital flood theme for the flooding sources specified in the Introduction will not be digitized as part of this task; rather, {insert name of responsbile party} will leave these as "holes" in the digital flood theme that will be filled in as part of Task 12 using digital flood data from Task 8.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- DFIRM mapping files in one of the GIS file formats specified in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications. These files should be provided on CD-ROM.
- DFIRM database files in one of the database formats specified in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications. These files should also be provided on CD-ROM.
- Metadata files describing the DFIRM data should be provided. These files will include the required information and follow the examples shown in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications.
- A complete set of plots of the DFIRM panels showing all detail at the scale(s) agreed upon in the "Scope of Project" will be provided.
- A Quality Assurance/Quality Control (QA/QC) report that includes a description and the results of all automated or manual quality assurance steps taken during the preparation of the DFIRMs will be provided.

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Task 11A – Independent Quality Assurance/Quality Control Review of Digital Flood Insurance Rate Map Production (Non-Revised Areas)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the DFIRM panels submitted by {Insert party responsible for producing DFIRM panels for non-revised (i.e., effective) areas} under Task 11 of this SOW to ensure that the new DFIRM panels accurately represent the information shown on the effective FIRMs and FBFMs for the area mapped. This work will include, at a minimum, checking the following:

<Add, modify or delete tasks below, as necessary>

- Cross sections were properly located and oriented as shown on the FIRM or FBFM.
- The BFEs are properly located and agree with the BFEs shown on the FIRM.
- The floodway widths agree with the widths shown on the FIRM or FBFM.
- The 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.
- For coastal studies, setup and runup height elevations shown on the work map agree with those shown on the data table(s), and stillwater elevations are shown where coastal and riverine flooding studied in detail join.
- Zone designations are indicated properly.

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Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies and providing recommendations to resolve them or agreeing with the mapping results;
- Recommendations to resolve any problems that arise as a result of the QA/QC review; and
- An annotated copy of the DFIRM with all questions and/or concerns indicated, if necessary.

Task 12 – Digital Flood Insurance Rate Map Production (Merge Revised and Non-Revised Information)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Upon completion of the floodplain mapping tasks (Tasks 8, 8A, and/or 8B of this SOW) for the revised flooding sources and the DFIRM production for non-revised areas (Task 11 of this SOW), the digital floodplain data will be merged into a single, updated Digital FIRM. This work will include tying in Flood Profiles, floodplain boundaries and floodways with contiguous communities that were not studied as part of this SOW. {Insert name of responsible party} will be responsible for coordinating with those Mapping Partners conducting Tasks 8, 8A, 8B, and 11, as necessary, to resolve any potential tie-in issues.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- DFIRM mapping files in one of the FEMA-approved GIS file formats. These files should be provided on CD-ROM.
- DFIRM database files in one of the FEMA-approved database formats. These files should also be provided on CD-ROM.
- Metadata files describing the DFIRM data are to be provided in FEMA-approved format.
- A complete set of plots of the DFIRM panels showing all detail at the scale(s) agreed upon in the "Scope of Project" shall be provided.
- A QA/QC report that includes a description and the results of all automated or manual QA/QC steps taken during the preparation of the DFIRMs shall be provided.

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Task 12A – Application of Digital Flood Insurance Rate Map Graphics and Database Specifications

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Upon completion of the floodplain mapping tasks (Tasks 8, 8A, and/or 8B of this SOW) and DFIRM production tasks (Tasks 11 and 12 of this SOW), the DFIRM will be revised as appropriate to meet current FEMA graphic specifications. In addition, the DFIRM spatial database will be revised as appropriate to meet current FEMA database specifications. {Insert name of responsible party} will be responsible for coordinating with those Mapping Partners conducting Tasks 8, 8A, 8B, 11, and 12, as necessary, to resolve any problems.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- DFIRM mapping files that meet FEMA specifications. These files should be provided on CD-ROM.
- DFIRM database files that meet FEMA specifications. These files should also be provided on CD-ROM.
- Metadata files that meet FEMA specifications.
- A complete set of plots of the DFIRM panels shall be prepared for the independent QA/QC review (Task 12B of this SOW).
- A QA/QC report that includes a description and the results of all automated or manual QA/QC steps taken during the preparation of the final DFIRMs shall be provided.

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Task 12B – Independent Quality Assurance/Quality Control Review of Digital Flood Insurance Rate Map Product Meeting FEMA Graphics and Database Specifications

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Upon completion of the floodplain mapping tasks (Tasks 8, 8A, and/or 8B of this SOW) and DFIRM production tasks (Tasks 11 and 12 of this SOW), the DFIRM will be revised as appropriate to meet current FEMA graphic specifications. In addition, the DFIRM spatial database will be revised as appropriate to meet current FEMA database specifications. {Insert name of responsible party} will be responsible for coordinating with those Mapping Partners conducting Tasks 8, 8A, 8B, 11, and 12, as necessary, to resolve any problems.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the TSDN format described in Task 15 of this SOW, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies and providing recommendations to resolve them 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 arise as a result of the QA/QC review; and
- An annotated copy of the DFIRM with all questions and/or concerns indicated, if necessary.

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Task 13 - Preliminary Digital Flood Insurance Rate Map and Flood Insurance Study Report Distribution

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: This task consists of the final preparation, review and distribution of the preliminary FIRM and associated FIS report for community and public review and comment. The activities to be performed include:

<Add, modify or delete tasks below, as necessary>

- *FIS Report Preparation:* Unless instructed otherwise by FEMA, the revised FIS report will be prepared in the format of the existing FIS report. It will be revised to reflect current conditions, and include updated data tables and flood profiles. At a minimum, it will include the following: text; cover; vicinity map; tables; photographs (if available); profiles; floodway schematic; and, when necessary, transect schematic and transect location map.

- *QA/QC:* A final QA/QC review of the preliminary FIRMs and FIS report, including all data tables, flood profiles, and other components of the FIS, as appropriate, and the news release will be conducted. The QA/QC procedures will be consistent with the *Guidelines and Specifications for Flood Map Production Coordination Contractors (Final Draft)* referenced in the "Standards" subsection of this SOW.

- *Discrepancy Resolution:* The party conducting this task will be responsible for working with the party(ies) performing the other tasks of this project to resolve discrepancies identified during QA/QC.

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- *Distribution of Preliminary DFIRM and FIS Report:* The Preliminary FIRM(s) and FIS report(s) will be distributed to the affected communities, State agencies, and others as appropriate.

- *News Release Preparation:* News release notifications of BFE changes will be prepared and submitted for QA/QC review (discussed below) before publication. The news release will summarize newly proposed BFEs, modifications to existing BFEs, and any changes to the community's floodplain management ordinances to be NFIP compliant.

- *Summary of Map Actions (SOMA) Preparation:* {insert name of responsible party} will prepare a Preliminary SOMA listing the Letters of Map Change that will be affected by the DFIRM.

- Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- {Insert number of sets to be printed} sets of printed Preliminary DFIRMs and revised FIS reports, including all updated data tables and Flood Profiles shall be mailed to the CEO and floodplain administrator of each community, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by the FEMA Lead.

- Preliminary transmittal letters for each community receiving Preliminary copies of the DFIRM and FIS report shall be provided. These letters and any additional letters requested by the FEMA Lead or other FEMA staff shall be prepared in accordance with the current version of the FEMA *Document Control Procedures Manual.*

- Preliminary SOMA document prepared in accordance with FEMA requirements shall be provided.
- Revised DFIRM mapping files in the FEMA-approved format shall be provided on CD-ROM.
- Revised DFIRM database files in the FEMA-approved format shall be provided on CD-ROM.
- Revised metadata files in the FEMA-approved format shall be provided on CD-ROM.
- A QA/QC report that includes a description and the results of all automated or manual QA/QC steps taken during the preparation of the Preliminary DFIRM(s) and FIS report(s) shall be provided.

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Task 14 - Post-Preliminary Processing

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: This task consists of finalizing the FIRMs and FIS report after the preliminary FIS and FIRM have been issued for public review and comment. The activities to be performed include:

<Add, modify or delete tasks below, as necessary>

- *Initiation of Statutory 9o-Day Appeal Period:* When required, upon completion of a 30-day community comment period and/or final coordination meeting with the community, {insert name of responsible Mapping Partner(s)} will arrange for and verify that a proposed BFE determination letter is sent to the community CEO(s) and floodplain administrator(s) for all affected communities, that a news release is published in prominent newspapers with local circulation within each affected community, and that a notice is published in the *Federal Register* in accordance with the current version of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manual*.

- *Resolving Appeals and Protests:* {insert name of responsible Mapping Partner(s)}will support FEMA in reviewing and resolving appeals and protests received during the 90-day appeal period. For each appeal and protest, the following activities will be conducted: initial processing of the submission, technical review of the appeal/protest, preparation of letters requesting additional supporting data, performing revised analyses, and preparing a proposed resolution for FEMA's review. {insert name of responsible Mapping Partner}will mail all associated correspondence upon authorization by FEMA.

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- *Special Correspondence:* {insert name of responsible party(ies)} will 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. {insert name of responsible Mapping Partner}will also mail the final correspondence upon authorization by FEMA.

- *Revise FIRMs and FIS Report:* If necessary, {insert name of responsible Mapping Partner}will work with those parties responsible for preparing the DFIRM under Tasks 8, 8A, 8B, 11, and 12 of this SOW to revise the DFIRM(s) and FIS report(s) at the direction of the FEMA Lead and distribute Revised Preliminary copies of the DFIRM(s) and FIS reports, including data tables and Flood Profiles.

- *Letter of Final Determination:* {insert name of responsible Mapping Partner}k will work with FEMA to establish the effective date(s) for the DFIRM(s) and FIS report(s), and will prepare Letter(s) of Final Determination (LFDs) for FEMA review in accordance with the FEMA *Document Control Procedures Manual*.

- *GPO Processing:* {insert name of responsible Mapping Partner} will prepare final reproduction materials for the DFIRM(s) and FIS report(s) and provide these materials to FEMA. These materials will include camera-ready film negatives of the DFIRM(s) and paper copies of the FIS report(s) and profiles. In addition, the appropriate paperwork will be prepared and included with the FIRMs and FIS report, including the Transmittal Letter to the Community CEO, the Print Processing Worksheet, the Printing Requisition Form, and the Community Map Action Form.

- *Archiving Data:* {insert name of responsible Mapping Partner} will ensure the engineering backup data and related correspondence are packaged and stored properly in the library archives until they are transmitted to the Engineering Study Data Package Facility.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable standards" section of this SOW.

Deliverables: In accordance with the requirements provided in the current version of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manaul* , {Insert responsible party} shall make the following products available to the FEMA Lead:

<Add, modify or delete deliverables below, as necessary>

- Documentation that the news release(s) was published in accordance with FEMA requirements;
- Documentation that the appropriate *Federal Register* notices were published in accordance with FEMA requirements;
- Draft LFD and associated backup data and information for FEMA review.
- Draft Special Correspondence and backup data and information for FEMA review.
- Appeal and Protest resolution letters, and all backup data and information for FEMA review.
- {Insert number of sets to be printed} sets of DFIRM negatives and printed FIS reports, including all updated data tables and Flood Profiles.
- Complete, organized Engineering Study Data Packages.

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Task 15 - Reporting

All Project Team members for this project have reporting responsibilities for tasks included in this SOW. All Project Team members shall comply with the reporting requirements summarized in Volume 3 of *Guidelines and Specifications for Flood Hazard Mapping Partners*. In addition, the following reporting requirements shall be met:

- <Add reporting requirements, as appropriate>
- If any issues arise that could affect the completion of a task within the proposed scope or budget, the Mapping Partner that is responsible for that task must complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submit it to the FEMA Lead. The SPR should describe the issue and propose possible resolutions.
- {Insert responsible party} will be responsible for collecting and maintaining a set of deliverables for all tasks and shall compile a comprehensive TSDN for the entire project.

All supporting documentation for the tasks in this SOW shall be submitted in the TSDN format in accordance with Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

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Applicable Standards

The table on pages I-98, I-99, and I-100 summarizes the relevant standards that apply to each task described in this SOW.

Task Number	Task Description	Guidelines Volume, Section/Subsection, and Appendix
1	Field Surveys and Reconnaissance	Volume 1, Sections 1.2, 1.3, 1.4 (specifically Subsection 1.4.2.1)
		Appendix A, Sections A.5, A.6, A.7, and A.8
		Appendices B, C, and M
2	Topographic Data Development	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1)
		Appendix A, Sections A.2 and A.3
		Appendix M
3	Independent QA/QC Review of Topographic Data	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.1)
		Appendix A, Sections A.2, A.3, A.7 (specifically Subsection A.7.5), and A.8 (specifically Subsection A.8.6)
		Appendix M
4	Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4)
		Appendix C, Sections C.1 and C.7
		Appendices E, F, G, H, and M
4A	Coastal Hazard Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.2.2)
		Appendix A, Section A.4
		Appendices B, D, and M
5	Independent QA/QC Review of Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1)
		Appendix C, Section C.2
		Appendices E, F, G, H, and M

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Task Number	Task Description	Guidelines Volume, Section/Subsection, and Appendix
5A	Independent QA/QC Review of Coastal Hazard Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 Appendices B, D, H, and M
6	Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix C, Sections C.3 and C.7 Appendices B, E, F, G, H, and M
7	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
8	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 Appendices K, L, and M
8A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.3) Appendices K. L, and M
8B	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

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Task Number	Task Description	Guidelines Volume, Section/Subsection, and Appendix
9	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 Appendices D, K, L, and M
10	Base Map Acquisition and Preparation	Volume 1, Sections 1.3 (specifically Subsection 1.3.1.8) and 1.4 (specifically Subsection 1.4.3) Appendices A and B
11	DFIRM Production (Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.2) Appendices K, L, and M
11A	Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsection 1.4.3) Appendices K, L, and M
12	DFIRM Production (Merge Revised and Non-Revised Information)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.3) Appendices K and L
12A	Application of DFIRM Graphic and Database Specifications	Volume 1, Section 1.4 (specifically Subsection 1.4.3) Appendices K and L Appendices K, L, and M
12B	Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications	Volume 1, Section 1.4 (specifically Subsection 1.4.3) Appendices K, L, and M

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Task Number	Task Description	Guidelines Volume, Section/Subsection, and Appendix
13	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
14	Post-Preliminary Processing	Volume 1, Section 1.5 Appendices J, K, L, and M
15	Reporting	Volume 3, Section 3.2

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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 will include:

<Add/delete/modify coordination activities, as necessary>

- Meetings, teleconferences, and videoconfernces with FEMA and other Project Team members {specify frequency or dates for meetings};
- Telephone conversations with FEMA and other Project Team members on a scheduled basis {specify schedule for calls} and an ad hoc basis, as required;
- Updates to FEMA status information systems; and
- E-mail, facsimile transmissions, and letters, as required.

Post-Submission Requirements

All Project Team members are responsible for assisting in the resolution of issues and questions raised prior to the DFIRM(s) becoming effective.

{Specify any post-submission requirements for each Project Team member.}

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I.3.2 Time and Cost Estimate Template

FEMA designed the Time and Cost Estimate Template (pages I-103 to I-107) for Project Team members to use in preparing time and cost estimates for the Flood Map Project. Non-FEMA Project Team members shall develop time and cost estimates for assigned tasks. As part of the time and cost estimates, Project Team members also shall establish schedules for the assigned work. These individual task schedules shall comply with the overall Flood Map Project schedule agreed-upon during the Scoping Meeting, or changes shall be submitted to the FEMA Lead and the rest of the Project Team for approval.

[February 2002]

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Time and Cost Estimate

Note that this form contains proprietary/privileged information and should be made available only to the FEMA Lead and/or FEMA Project Officer. Each member of the Project Management Team completes pertinent sections of the form for tasks assigned in the Project SOW and submits it to the FEMA Lead.

1. Project Team Member:		**2. Community and/or County:**	
3. State:	**4. Study Type:**	**5. Proposed Starting Date:**	**6. Completion Date:**
PLANNED WORK PART I – DETAILED STUDY			
7. Length of Stream(s):	**8. Length of Coastline:**	**9. Community Area:**	**10. No. of Hydraulic Structures:**
11. No. of Valley Cross Sections: **Existing:**_____ **New:**_____ **Average Cost (New) $:**_____		**12. Source(s):** **Existing:**_____ _____ _____	
PART II – APPROXIMATE STUDY			
13. Length of Stream(s):	**14. Cost per Stream Mile $:** _____ **Estimated Cost $:** _____		
PART III – MAPPING INFORMATION			
15. No. of Revised Map Panels:_____	**16. No. of Converted Map Panels:**_____	**17. Base Map Source(s):**_____ _____ _____	

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PART IV – SUMMARY OF COST ESTIMATE			
A. Labor Category (Fill in only for Assigned Tasks and mark others as "N/A.")	**Hourly Rate**	**Hours**	**Dollar Amount**
Task 1 – Field Surveys and Reconnaissance			
Task 2 – Topographic Data Development			
Task 3 – Independent QA/QC Review of Topographic Data			
Task 4 – Hydrologic Analyses			
Task 4A – Coastal Hazard Analyses			
Task 5 – Independent QA/QC Review of Hydrologic Analyses			
Task 5A – Independent QA/QC Review of Coastal Hazard Analyses			
Task 6 – Hydraulic Analyses			
Task 7 – Independent QA/QC Review of Hydraulic Analyses			
Task 8 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)			
Task 8A – Floodplain Mapping (Redelineation Using Effective Profiles and Updated Topographic Data)			
Task 8B – Floodplain Mapping (Refinement or Creation of Zone A)			
Task 9 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)			
Task 10 – Base Map Acquisition			
Task 11 – DFIRM Production (Non-Revised Areas)			
Task 11A– Independent QA/QC Review of DFIRM Production (Non-Revised Areas)			
Task 12 – DFIRM Production (Merge Revised and Non-Revised Information)			
Task 12A– Application of DFIRM Graphic and Database Specifications)			
Task 12B– Independent QA/QC Review of DFIRM Meeting Graphic and Database Specifications)			
Task 13 – Preliminary Map and Report Distribution			
Task 14 – Post-Preliminary Processing			
Task 15 – Reporting			

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B. Burden			
Total Direct Labor Cost $	_____	x Rate _____ =	$ _____
C. Direct Material (Show Basis of Estimate)			$ _____
D. Travel MILEAGE Miles _____ x Rate $ _____ = $ _____ No. of Trips _____ PER DIEM No. of Days _____ x Rate $ _____ = $ _____			
E. Subcontractors (Separate cost basis justification for each attached)			$ _____
F. Other Direct Cost (Basis for estimate attached)			$ _____
G. General Administrative Cost			
Total Direct Labor Cost	$ _____	x Rate _____ =	$ _____
H. Fee (Where applicable)			$ _____
TOTAL ESTIMATED COSTS			$ _____
Remarks:			

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PART V – PROJECT SCHEDULE (Fill in only for Assigned Tasks, Mark Others as "N/A.")			
Task Number	**Name**	**Start Date**	**End Date**
1	Field Surveys and Reconnaissance	December 31, 2002	December 31, 2002
2	Topographic Data Development		
3	Independent QA/QC Review of Topographic Data		
4	Hydrologic Analyses		
4A	Coastal Hazard Analyses		
5	Independent QA/QC Review of Hydrologic Analyses		
5A	Independent QA/QC Review of Coastal Hazard Analyses		
6	Hydraulic Analyses		
7	Independent QA/QC Review of Hydraulic Analyses		
8	Floodplain Mapping (Revised Areas)		
8A	Floodplain Mapping (Redelineation Using Effective Profiles and Updated Topographic Data)		
8B	Floodplain Mapping (Refinement or Creation of Zone A)		
9	Independent QA/QC Review of Floodplain Mapping (Revised Areas)		
10	Base Map Acquisition		
11	DFIRM Production (Non-Revised Areas)		
11A	Independent QA/QC Review of DFIRM Production (Non-Revised Areas)		
12	DFIRM Production (Merge Effective and Revised Information)		
12A	Application of DFIRM Graphic and Database Specifications		
12B	Independent QA/QC Review of DFIRM Meeting Graphic and Database Specifications)		

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PART V – PROJECT SCHEDULE (Fill in only for Assigned Tasks, Mark Others as "N/A.")			
Task Number	**Name**	**Start Date**	**End Date**
13	Preliminary DFIRM and FIS Report Distribution		
14	Post-Preliminary Processing		
15	Reporting		
Name and Title of Person Preparing Estimate		Phone Number	Date

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I.3.3 Notice to Proceed Letter Template

The FEMA AO or CO shall use the Notice to Proceed Letter Template (page I-109) to prepare the Notice to Proceed letter. The Notice to Proceed Letter distributes the final Scope of Work or Mapping Activity Statement to the Project Team members and notifies them to proceed accordingly.

[February 2002]

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Federal Emergency Management Agency
{Insert Address of FEMA Office}

{Date}

{Name}
{Address2}
{Address3}
{Address4}
{Address5}

{Flood Mapping Project Title}
{Community(ies)}

{Salutation}:

With this letter, you are authorized to begin your portion of the work necessary to complete the {Insert Flood Mapping Project Title} for the above-referenced community(ies).

Enclosed is a final copy of the Project Management Plan for the project, which provides details on your portion of the work including the Statement of Work, Time- and Cost-Estimate, project time schedules, and project deliverables.

We look forward to working with your <choose one {Firm/Agency/Community--For CTPs} and the community officials of {Insert Name of Community}, as well as other {Insert Name of State} communities, to ensure that the goals of this Flood Mapping Project are met. This will allow {Insert Name of Community} to administer a more effective floodplain management program.

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Sincerely,

{Insert Name of Contracting Officer and/or FEMA Lead}

{InsertTitle}

cc: {FEMA HQ Engineer}, FEMA Headquarters

{Insert Other Project Team Members, as necessary}

Enclosure