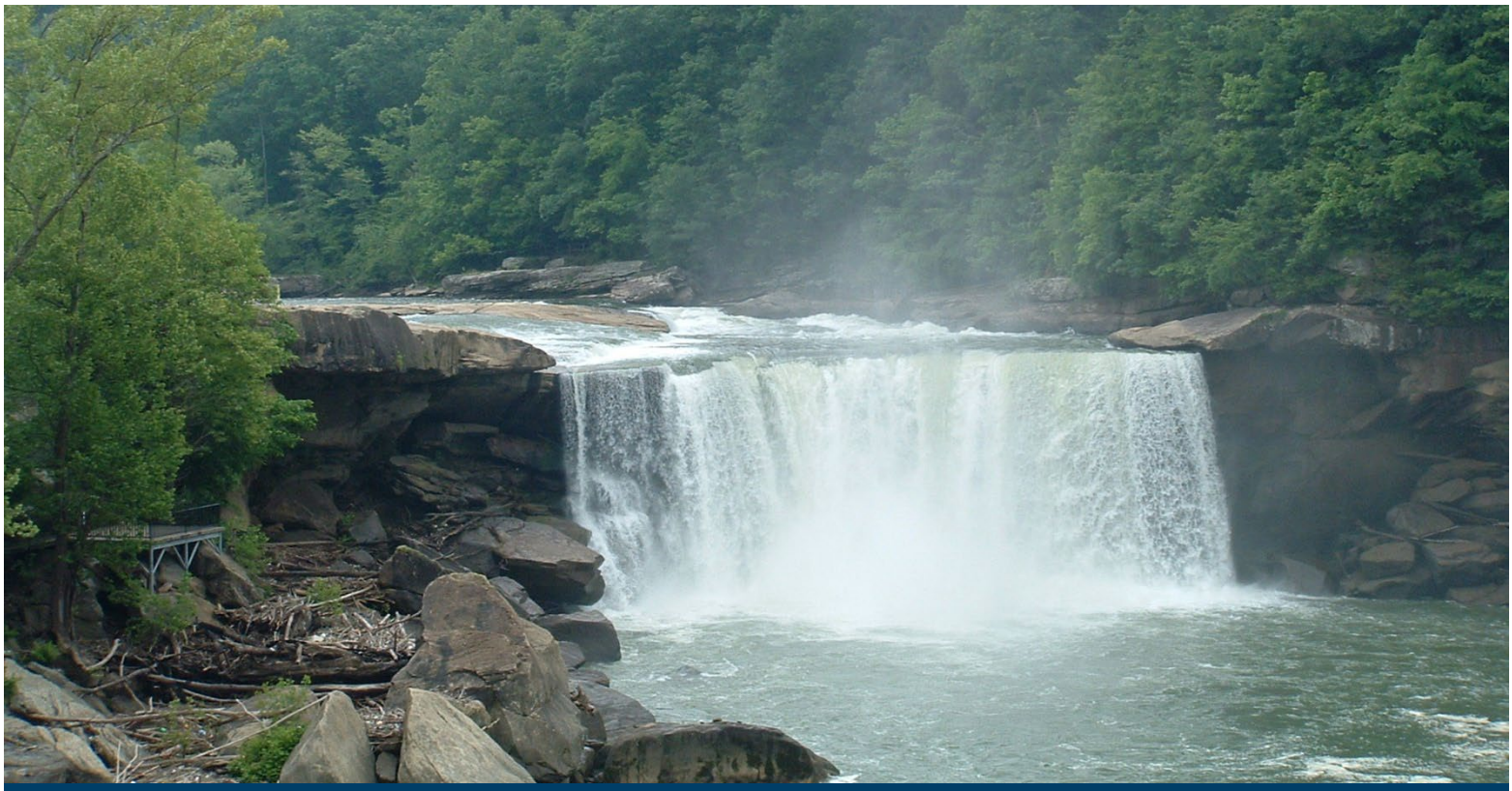

{Insert CTP Name(s)}

COOPERATING TECHNICAL PARTNERS

FEMA-APPROVED FLOOD RISK PROJECTS

MAPPING ACTIVITY STATEMENT

FRP MAS No. {Insert MAS Number}

Fiscal Year 2025

FEMA

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Table of Contents

Document Organization and Instructions

Cooperating Technical Partners (CTPs) should use this template to apply for an award to complete Flood Risk Project activities.

This document is organized into two parts. The goal is to simplify and streamline the Mapping Activity Statement (MAS) completion and improve its use for both CTPs and the Federal Emergency Management Agency (FEMA).

Part 1 lists MAS elements that the CTP can customize (formatted in tables). Part 1 has required elements which cannot be modified:

- Parts 1.1 – 1.3. In these sections, the CTP will describe the project and identify the scope elements to be completed under this MAS. The CTP can clarify or modify the standard descriptions and deliverables on fundable activities (as shown in Part 2). The CTP will also indicate the schedule for delivery, leverage, budget, performance measures and other related components of the MAS.

- Parts 1.4 – 1.11. These sections include standard language, to which the CTP is agreeing, that addresses standards, hiring of contractors, reporting and performance, and protection of Personally Identifiable Information (PII). The CTP may not edit this language.

Part 2 provides standard language on scope activities that can be funded. If the CTP is applying for an individual fundable activity, they agree to the scope as written in Part 2 under that subsection unless otherwise noted in Part 1. CTPs can customize this language (by note/deliverable additions, subtractions, and other mechanisms) after each scope element in the “Custom Scope Elements” field. If the text is accepted as is, there is no need to copy text from Part 2 into Part 1. It is incorporated by reference.

1. Part 1 – Custom Mapping Activity Statement Information

In accordance with the CTP Partnership Agreement referenced in Table 1 between {insert name of community(ies) or county} (herein referred to as "CTP") and FEMA, the FEMA-Approved National Flood Risk Projects (FRP) MAS No. {Insert MAS #} is as follows:

1.1. Project and Point of Contact Information

Instructions: Complete Table 1 with the basic project information and points of contact for both the CTP and FEMA staff.

Table 1. Project and Point of Contact Information

Information Type	Insert Information
Project Name/Title (if applicable)	{Insert Project name/title}
CTP Organization Name:	{Insert CTP name}
CTP Contractor Working on the activities in this MAS: *Optional, only if contractors have already been identified. Please see Part 1.6 for more information*	{Insert name of CTP contractor, if applicable}
Sub-Recipient Working on the activities in this MAS: *Optional, only if sub-recipients have already been identified*	{Insert name of CTP sub-recipient, if applicable}
CTP Partnership Agreement Date:	{Insert Partnership Agreement Date}
Period of Performance:	{Insert Start Date} to {Insert End Date}
CTP Project Manager:	{Insert name of CTP Project Manager}
FEMA Regional Project Officer: *When necessary, ask for FEMA assistance through the FEMA Regional Project Officer.*	{Insert name of FEMA Regional Project Officer} {Insert FEMA Region}
FEMA Funding to Complete this FRP MAS:	{Insert amount of funding provided by FEMA through Cooperative Agreement}

Information Type	Insert Information
CTP Estimated Leverage: *Leverage dollars or units will be entered throughout the project lifecycle within most purchases. This includes Discovery, all data development types, Preliminary, Due Process, Outreach, and Final Mapping. Leverage entries should follow the guidance in the Estimating the Value of Partner Contributions to Flood Mapping Projects "Blue Book" (Blue Book)*	{Based on Blue Book estimate to be provided}
Project Team Coordination Activities: *During the project, all members of the Project Team will coordinate, as needed, to see that activities, products, and deliverables meet FEMA requirements and contain accurate, up-to-date information.*	Meetings, teleconferences, and video conferences with FEMA and other Project Team members {specify frequency or dates for meetings} Telephone or video conversations with FEMA and other Project Team members (scheduled {specify schedule for calls} and as needed) Email as needed {Add/delete/modify information as necessary.}

Instructions: Complete Table 2 with a high-level narrative of the work to be done under this FRP MAS, and the intended audience of the project.

Table 2. Narrative and Audience

Information Type	Insert Information
MAS Narrative:	{Add a high-level summary of what the CTP will do in this project. You may add maps as appendices to this document as needed and reference them here.}
Intended Audience:	{Add a high-level list of the intended audience within the footprint of this project. Identify State, Local, Tribal, and Territorial communities within the scope of this project/task}, herein referred to as "community(ies)."

Instructions: Table 3 outlines the watersheds and jurisdictions in which FRPs will be performed. It also details their applicable project types and activities. The table below should identify all applicable project types (e.g., Data Investments [2D Base Level Engineering (BLE)], Pre-Discovery, Discovery with BLE, Data Development, Produce Preliminary Map Products, Distribute Preliminary Map Products, Post-Preliminary Processing/Due Process, or Other [with description]). Watershed reports will be created and distributed to counties and communities identified to include Discovery in the Project Type.

Funding information is also required for each watershed and/or project. Please indicate the leverage for each watershed/project as follows:

- **A - FEMA Contribution**. This is the funding FEMA is providing to the CTP to complete this FRP MAS.
- **B - Partner Contribution**. These are other required resources that the CTP will provide to complete the assigned activities for this FRP MAS (also known as **Leverage**). Use Blue Book values or actual costs where Blue Book values do not exist. The current Blue Book is dated 2023. You can download it from FEMA's Information Resource Library at: Estimating the Value of Partner Contributions to Flood Mapping Projects "Blue Book".
- **A+B – Total Project Cost**. The sum of A and B.

Table 3. Flood Risk Project Watersheds and Jurisdictions

No.	Watershed/ Project Name	Geographic Footprint	Counties/ Parishes and Communities Included in Project	Project Type	(A) FEMA Cont. ($)	(B) Partner Cont. ($)	(A+B) Total Project Cost ($)
1							
2							
3							
4							
5							
	[Add more as needed]						

The CTP for this project will also develop new and/or updated flood hazard data as shown in Table 5. Total Stream or Shoreline Mile or 2D Square Mile Counts by Type of Study. The Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for the watersheds and areas shown in Table 5 will be produced in the North American Vertical Datum of 1988 (NAVD88). In Table 4, insert the jurisdiction(s) in each watershed, the total miles to be studied per watershed (summary of Table 5).

Table 4. Watershed Stream or Shoreline Totals and Jurisdiction Info

	{Watershed #1}	{Watershed #2}	{Watershed #3}	{Watershed #4}	{Watershed #5}
Jurisdiction(s)					
Total of all miles to be studied					

Table 5. Total Stream or Shoreline Mile or 2D Square Mile Counts by Type of Study

Study Type	Unit	{Watershed #1}	{Watershed #2}	{Watershed #3}	{Watershed #4}	{Watershed #5}
Effective Flood Insurance Study (Coordinated Needs Management Study [CNMS])	Coastal miles					
Effective Flood Insurance Study (Coordinated Needs Management Study [CNMS])	Riverine miles					
Effective Flood Insurance Study (Coordinated Needs Management Study [CNMS])	Total miles					
Effective Flood Insurance Study (Coordinated Needs Management Study [CNMS])	Unverified miles[1]					
Effective Flood Insurance Study (Coordinated Needs Management Study [CNMS])	Unmapped miles[1] (expansion)					

[1] CNMS miles in the project footprint that will be updated based on this project. This does not include miles that will not be updated in the project.

Study Type	Unit	{Watershed #1}	{Watershed #2}	{Watershed #3}	{Watershed #4}	{Watershed #5}
Updated Effective Studies (miles)*Identify if miles are planned 1D or 2D	New Approx.					
Updated Effective Studies (miles)*Identify if miles are planned 1D or 2D	New Detailed					
Updated Effective Studies (miles)*Identify if miles are planned 1D or 2D	New Coastal					
Updated Effective Studies (miles)*Identify if miles are planned 1D or 2D	New BLE (not planned for FIRM)					
Updated Effective Studies (miles)*Identify if miles are planned 1D or 2D	Leveraged Approx.					
Updated Effective Studies (miles)*Identify if miles are planned 1D or 2D	Leveraged Detailed					
New Studies/ Unmapped (miles)*Identify if miles are planned 1D or 2D	New Approx.					
New Studies/ Unmapped (miles)*Identify if miles are planned 1D or 2D	New Detailed					

Study Type	Unit	{Watershed #1}	{Watershed #2}	{Watershed #3}	{Watershed #4}	{Watershed #5}
New Studies/ Unmapped (miles)*Identify if miles are planned 1D or 2D	New BLE (not planned for FIRM)					
New Studies/ Unmapped (miles)*Identify if miles are planned 1D or 2D	Leveraged Approx.					
New Studies/ Unmapped (miles)*Identify if miles are planned 1D or 2D	Leveraged Detailed					

1.2. Identify Tasks and Deliverables to be Completed Under this MAS

1.2.1. PROJECT TASKS AND DELIVERABLES

Instructions: List tasks and deliverables that can be done under this FRP MAS in the FRP task tables in Part 1.2.1. Please fill out the table for each task by checking the boxes with the deliverables the CTP will complete. Describe the custom scope elements for each relevant task.

The following 24 tasks can be done under this FRP MAS:

1. Project Management and Earned Value Data Entry.
2. Project Outreach and Communication Plan (POCP).
3. Event Data Capture.
4. Discovery Data Capture.
5. Base Map Data Capture.
6. Independent QA/QC: Base Map Data Capture.
7. Existing or New Topographic Data Capture and Terrain Data Capture.
8. Independent QA/QC: Topographic Data Capture.
9. Survey Data Capture.
10. Hydrology Data Capture.
11. Independent QA/QC: Hydrology Data Capture.
12. Hydraulics Data Capture.

13. Independent QA/QC: Hydraulics Data Capture.
14. Coastal Data Capture.
15. Independent QA/QC: Coastal Data Capture.
16. Floodplain Mapping Data Capture.
17. Independent QA/QC: Floodplain Mapping Data Capture.
18. Flood Risk Products Data Capture.
19. Independent Quality Assurance/Quality Control (QA/QC) of Flood Risk Products.
20. Draft FIRM Database Capture.
21. Produce Preliminary Map Products.
22. Independent QA/QC: Produce Preliminary Map Products.
23. Distribute Preliminary Map Products.
24. Post-Preliminary Map Production.

These tasks and their associated deliverables are listed in the sections below.

Task 1 – Project Management and Earned Value Data Entry

Instructions: Add the required information to Table 6.

The CTP will deliver the checked item(s) to the FEMA Regional Project Officer.

Table 6. Task 1 – Project Management and Earned Value Data Entry

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Watershed 1	Watershed 2	Watershed 3	Watershed 4	Watershed 5	All Projects
Monthly earned value data report through the Mapping Information Platform (MIP), explaining variance to support the management of technical mapping activities in the stated time frame for Regulatory and Flood Risk Products	☐	☐	☐	☐	☐	☐
Management of Schedule Performance Index (SPI) and Cost Performance Index (CPI) for an organization	☐	☐	☐	☐	☐	☐
Overall project Quality Management Plan (QMP), with QA/QC maintenance information, by maintaining a QA/QC log and providing a QA/QC approach to FEMA to review and approve *(early in the grant lifecycle)*	☐	☐	☐	☐	☐	☐
Managed adherence to the quality and scope of work for an organization	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐

By watershed, mark “X” if deliverable will be done under this task
Custom Scope Elements
Note that if you do not modify this cell, you agree to the scope as written in Part 2.1. Earned Value Data Entry. If you accept the text as is, you do not need to copy the wording here. Detail here only what you plan to change. {enter custom scope elements}

Task 2 – Project Outreach and Communication Plan

Instructions: Add the required information to Table 7 below. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed.

Table 7. Task 2 – Project Outreach and Communication Plan

	By watershed, mark "X" if deliverable will be done under this task					
Deliverable	**Water-shed 1**	**Water-shed 2**	**Water-shed 3**	**Water-shed 4**	**Water-shed 5**	**All Projects**
A Project Communication Plan that details outreach and coordination activities (**Required** unless part of a COMS overarching Outreach plan). NOTE: The MIP includes tasks that capture outreach activities. Once you complete these tasks, upload relevant data to those tasks in the MIP [2, 3]	☐	☐	☐	☐	☐	☐
Watershed/Community Assessment outputs with logs of telephone discussions	☐	☐	☐	☐	☐	☐
Meeting invitation, format (in person, virtual, hybrid), agenda, presentation slides (as requested), and meeting notes for FEMA review	☐	☐	☐	☐	☐	☐
Action Identification and Advancement Plan	☐	☐	☐	☐	☐	☐
Project update status reports for project communities	☐	☐	☐	☐	☐	☐

[2] Upload all products to the MIP. Submit them to MIP Help on a hard drive if they are larger than the size listed in the MIP Guidance document.

[3] You can find the FEMA Flood Risk Communication Toolkit for Community Officials: Communication Plan Guide online at: FEMA Flood Rick Communication Toolkit for Community Officials

	By watershed, mark "X" if deliverable will be done under this task					
Provide documentation of adherence with the requirements for the community 30-day review of proposed models and 30-day review of work maps, completed models, and associated information	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.2. Project Outreach and Communication Plan. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 3 – Events

Instructions: Add the required information to Table 8. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. Complete all sections in Part 2.3 (including 2.3.1-2.3.9) for this project for each watershed identified. Deliverables include submitting each document listed in the Data Capture Technical Reference.

Table 8. Task 3 – Events

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
Risk Communication and Outreach	☐	☐	☐	☐	☐	☐
Advancing Mitigation Action	☐	☐	☐	☐	☐	☐
Watershed and Community Assessment	☐	☐	☐	☐	☐	☐
30-Day Review of Proposed Models	☐	☐	☐	☐	☐	☐
30-Day Review of Completed Models, Work Maps and Database	☐	☐	☐	☐	☐	☐
Television and Radio Outreach	☐	☐	☐	☐	☐	☐
Discovery Meeting(s)	☐	☐	☐	☐	☐	☐
Project Initiation/Coordination Calls	☐	☐	☐	☐	☐	☐
Flood Risk Review Meeting(s)	☐	☐	☐	☐	☐	☐
Resilience Meeting(s)	☐	☐	☐	☐	☐	☐
Final Consultation Coordination Officer (CCO) Meeting(s)	☐	☐	☐	☐	☐	☐
Status Reports	☐	☐	☐	☐	☐	☐
Local Levee Partnership Team Meeting(s)	☐	☐	☐	☐	☐	☐
Open House(s)	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐

Custom Scope Elements

Note that if you do not modify the cell, you agree to the scope as written in Part 2.3. Event Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here.

{Include start and end dates to these tasks}

{enter custom scope elements}

Task 4 – Discovery

Instructions: Add the required information to Table 9.

Table 9. Task 4 – Discovery

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
Stakeholder Engagement	☐	☐	☐	☐	☐	☐
Data and Information Collection	☐	☐	☐	☐	☐	☐
Discovery Meeting(s)	☐	☐	☐	☐	☐	☐
Post-Discovery	☐	☐	☐	☐	☐	☐
Scope Refinement	☐	☐	☐	☐	☐	☐
Validation Basin Support for Comprehensive Models	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.4. Discovery Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables planned for development in the "Other" row in the table above. Detail the tasks to be completed for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 5 – Base Map Data Capture

Instructions: Add the required information to Table 10. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. The CTP will produce items listed in the Base Map Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

The CTP will address all concerns and questions about the base map that are raised during the Independent QC review or during the MIP Validate Content Submission Process. Table 11 is useful if multiple counties are involved in this map update. Record any other base map information discovered after the MAS is complete in a supplemental report. Then, deliver that report to the FEMA Regional Office.

Table 10. Task 5 – Base Map Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task				
	Watershed 1	Watershed 2	Watershed 3	Watershed 4	Watershed 5
Spatial Files and Supplemental Data	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐
Custom Scope Elements					
Note that if you do not modify this cell, you agree to the scope as written in Part 2.5. Base Map Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}					

Table 11. Summary of Planned Base Map (if known)

Data	New/ Existing	Leveraged	Study Area	Accuracy and Year Acquired	Source/ Data Vendor	Contact Information	Use Restrictions
Hydrography							
Public Land Survey System							

Data	New/ Existing	Leveraged	Study Area	Accuracy and Year Acquired	Source/ Data Vendor	Contact Information	Use Restrictions
Corporate Boundaries							
Transportation Features							
(Enter more base map data as needed)							
(Enter more base map data as needed)							
(Enter more base map data as needed)							

.

Task 6 – Independent QA/QC: Base Map Data Capture

Instructions: Add the required information to Table 12.

Table 12. Task 6 – Independent QA/QC: Base Map Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
Quality Review (QR) checklist and any documents that relate to independent reviews of Base Map data submittals	☐	☐	☐	☐	☐	☐
Any revised spatial files and supplemental data	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.6. Independent QA/QC: Base Map Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 7 – Existing or New Topographic Data Capture and Terrain Data Capture

Instructions: Add the required information to Table 13. In the custom scope elements cell, add the start and end dates for this task. Justify omission of this task and/or specific deliverables if needed. The CTP will produce the items listed in the New or Existing Topographic Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA. Where state law requires paper documentation for professional certifications, the CTP may submit the paper and a scanned version for the digital record. Please coordinate with the regional and/or state representative to confirm the state reporting requirements.

Additionally, complete Table 14. Summary of Topographic Elevation Data.

Table 13. Task 7 – Existing or New Topographic Data Capture and Terrain Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Watershed 1	Watershed 2	Watershed 3	Watershed 4	Watershed 5	All Projects
Source	☐	☐	☐	☐	☐	☐
Spatial Files	☐	☐	☐	☐	☐	☐
Supplemental Data	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.7. Existing or New Topographic Data Capture and Terrain Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Table 14. Summary of Topographic Elevation Data

Watershed/ Flooding Source	Identify New OR Existing	Year Acquired	Data Type	Vertical Accuracy (RMSEz)	Source/Data Vendor (e.g., Public domain, community supplied, procured as part of this MAS)	Contact Information	Use Restrictions

Task 8 – Independent QA/QC: Topographic Data Capture

Instructions: Add the required information in Table 15 below. The responsible Mapping Partner(s) will produce the items listed in the New or Existing Topographic Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 15. Task 8 – Independent QA/QC: Topographic Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
QR checklist and any documents that relate to independent technical reviews of topographic and terrain data submittals	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.8. Independent QA/QC: Topographic Data Capture. If you accept the text as is, you do not need to copy the wording here. Detail here only what you plan to change. {enter custom scope elements}						

Task 9 – Survey Data Capture

Instructions: Add the required information to Table 16. The CTP will produce the items listed in the Survey Data Capture section of the current Data Capture Technical Reference and upload the data to the MIP to make them available to FEMA. Where state law requires paper documentation for professional certifications, the CTP may submit the paper and a scanned version for the digital record. Please coordinate with the regional and/or state representative to confirm the state reporting requirements.

Table 16. Task 9 – Survey Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
Photos	☐	☐	☐	☐	☐	☐
Sketches	☐	☐	☐	☐	☐	☐
Survey Data	☐	☐	☐	☐	☐	☐
Supplemental Data	☐	☐	☐	☐	☐	☐
As-built Data	☐	☐	☐	☐	☐	☐
Spatial Files	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Additional Data Quality Assurance	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.9. Survey Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 10 – Hydrology

Instructions: Add the required information to Table 17. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. The CTP will produce the items listed in the Hydrology Data Capture section of the current Data Capture Technical Reference document and upload the data to the MIP to make them available to FEMA. Where state law requires paper documentation for professional certifications, the CTP may submit the paper and a scanned version for the digital record. Please coordinate with the regional and/or state representative to confirm the state reporting requirements.

Complete Table 18. Summary of Hydrologic Analyses. Add rows as needed.

Table 17. Task 10 – Hydrology

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
Spatial files, simulations, and Supplemental Data for the peak flood discharges and/or flood hydrographs for the 10, 4, 2, 1, "1-plus" and 0.2% annual chance events using the analysis method identified in Table 18	☐	☐	☐	☐	☐	☐
Task documentation	☐	☐	☐	☐	☐	☐
BLE (Note: if checked, the Hydraulics and Draft FIRM database deliverable are required)	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.10. Hydrology Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Table 18. Summary of Hydrologic Analyses

Study Area/Flooding Source	Methodology	Square Miles of Leveraged Hydrology	Square Miles of New Hydrology

Task 11 – Independent QA/QC: Hydrology

Instructions: Add the required information to Table 19. The responsible Mapping Partner(s) will produce the items listed in the Hydrology Data Capture section of the current Data Capture Technical Reference and upload the data to the MIP to make them available to FEMA.

Table 19. Task 11 – Independent QA/QC: Hydrology Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
QR checklist and any documents that relate to independent reviews of Hydrology data submittals	☐	☐	☐	☐	☐	☐
Other (e.g., Summary Report documenting findings, or recommendations to resolve problems): {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.11. Independent QA/QC: Hydrology Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 12 – Hydraulics

Instructions: Add the required information to Table 20. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. The CTP will produce the items listed in the Hydraulics Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Complete Table 21. Summary of Hydraulic Analyses.

Table 20. Task 12 – Hydraulics Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
Simulations	☐	☐	☐	☐	☐	☐
FIS Inserts and/or Profiles	☐	☐	☐	☐	☐	☐
Floodway Data Tables (FWDT)	☐	☐	☐	☐	☐	☐
Supplemental Data	☐	☐	☐	☐	☐	☐
Spatial Files	☐	☐	☐	☐	☐	☐
BLE (Note: if checked, the Draft FIRM database deliverable is also required. See Part 2.20. Draft FIRM Database Capture)	☐	☐	☐	☐	☐	☐
Task Documentation (Hydraulic report, draft FIS)	☐	☐	☐	☐	☐	☐
Task Documentation (Hydraulic report, draft FIS)						
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.12. Hydraulics Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Table 21. Summary of Hydraulic Analyses

Study Area/Flooding Source	Hydraulic Analysis Option(s) [4]	Total Miles of New Base Level or Enhanced Level Hydraulics	Description of Level of Study (i.e., AE with BFE, A zone mapping, etc.)	Model Type (1D or 2D)

[4] List option letters Table 42. Hydraulic Analysis Options for Base and Enhanced Level Engineering.

Task 13 – Independent QA/QC: Hydraulics

Instructions: Add the required information to Table 22. The CTP will produce the items listed in the Hydraulics Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA. Where state law requires paper documentation for professional certifications, the CTP may submit the paper in and a scanned version for the digital record. Please coordinate with the regional and/or state representative to confirm the state reporting requirements.

Table 22. Task 13 – Independent QA/QC: Hydraulics Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
QR checklist and any documents that relate to independent reviews of Hydraulic data submittals	☐	☐	☐	☐	☐	☐
Revised data elements based on QR	☐	☐	☐	☐	☐	☐
Other (e.g., Summary Report documenting findings or recommendations to resolve problems): {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.13. Independent QA/QC: Hydraulics Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 14 – Coastal Data Capture

Instructions: Add the required information to Table 23. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. The CTP will produce the items listed in the Coastal Data Capture section of the current Data Capture Technical Reference and following the Coastal Data Capture guidance document. Upload the data to the MIP to make them available to FEMA. The coastal data submittals will follow an intermediate data submittal organization as outlined below and detailed in the current Coastal Study Documentation and Intermediate Data Submittals guidance document.

Complete Table 24. Summary of Coastal Data. List out each methodology component separately, i.e., storm surge, wave heights, erosion.

All Regions:

- Intermediate Submission No. 1 – Data Acquisition and Technical Approach.
- Intermediate Submission No. 2 – Offshore Water Levels and Waves: Storm Selection and Numerical Model Validations.
- Intermediate Submission No. 3 – Offshore Water Levels and Waves: Production Runs and Statistical Analyses.
- Intermediate Submission No. 4 – Nearshore Hydraulics and Overland Wave Calculations.
- Intermediate Submission No. 5 –Flood Hazard Mapping.

Table 23. Task 14 – Coastal Data Capture

Deliverable	By coastal reach or county, mark "X" if deliverable will be done under this task					
	Water-body 1	Water-body 2	Water-body 3	Water-body 4	Water-body 5	All Projects
Coastal_IDS_1 through Coastal_IDS_5	☐	☐	☐	☐	☐	☐
Stillwater Data	☐	☐	☐	☐	☐	☐
Stillwater Analysis	☐	☐	☐	☐	☐	☐
Wave Analysis	☐	☐	☐	☐	☐	☐
Combined Riverine & Coastal Flooding	☐	☐	☐	☐	☐	☐
Transect Based Wave Hazard Analysis	☐	☐	☐	☐	☐	☐
Spatial Files	☐	☐	☐	☐	☐	☐
Coastal Flood Risk Spatial Files	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.14. Coastal Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Table 24. Summary of Coastal Data

Study Area/Flooding Source	Methods (SWEL, wave setup, erosion, waves, runup, overtopping)	Total Shoreline Miles of New Detailed Coastal Analysis

Study Area/Flooding Source	Methods (SWEL, wave setup, erosion, waves, runup, overtopping)	Total Shoreline Miles of New Detailed Coastal Analysis

Task 15 – Independent QA/QC: Coastal Data Capture

Instructions: Add the required information to Table 25. The responsible Mapping Partner(s) will produce the items listed in the Coastal Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 25. Task 15 – Independent QA/QC: Coastal Data Capture

Deliverable	By coastal reach or county, mark "X" if deliverable will be done under this task					
	Water-body 1	Water-body 2	Water-body 3	Water-body 4	Water-body 5	All Projects
QR checklist and any documents that relate to independent reviews of coastal data submittals	☐	☐	☐	☐	☐	☐
Revised data elements based on QR	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.15. Independent QA/QC: Coastal Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 16 – Floodplain Mapping Data Capture

Instructions: Add the required information to Table 26. In the custom scope elements cell, add the start and end dates for this task and include justification of omission of this task and/or specific deliverables if applicable. The CTP will produce the items listed in the Floodplain Mapping Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Complete Table 27. Summary of Floodplain Mapping.

Table 26. Task 16 – Floodplain Mapping Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
New or Revised Base Map (as needed to update what was provided under Task 11)	☐	☐	☐	☐	☐	☐
Spatial Files	☐	☐	☐	☐	☐	☐
Revised Topographic Data as needed, updated from Task 9	☐	☐	☐	☐	☐	☐
Supplemental Data	☐	☐	☐	☐	☐	☐
BLE (Note: if checked, the Hydraulics and Draft FIRM database deliverable are also required)	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.16. Floodplain Mapping Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Table 27. Summary of Floodplain Mapping

Study Area/Flooding Source	Method	Mapping Type (A/AE)	Miles	Topographic Data Source (e.g., lidar and year published)

Task 17 – Independent QA/QC: Floodplain Mapping Data Capture

Instructions: Add the required information to Table 28. The responsible Mapping Partner(s) will produce the following checked items listed in the Floodplain Mapping Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 28. Task 17 – Independent QA/QC: Floodplain Mapping Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
A Summary Report that describes the findings of the QA/QC review and notes errors in or agrees with the mapping results	☐	☐	☐	☐	☐	☐
Suggestions to resolve any problems found in the independent QA/QC review	☐	☐	☐	☐	☐	☐
An annotated work map with all questions and/or concerns shown as needed	☐	☐	☐	☐	☐	☐
Updated deliverables for past tasks (if data changed during the review)	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.17. Independent QA/QC: Floodplain Mapping Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 18 – Flood Risk Products Data Capture

Instructions: Add the required information to Table 29. In the custom scope elements cell, add the start and end dates for this task and include justification of omission of this task and/or specific deliverables. The CTP will produce the items listed in the Flood Risk Products Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 29. Task 18 – Flood Risk Products Data Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Watershed 1	Watershed 2	Watershed 3	Watershed 4	Watershed 5	All Projects
Flood Risk Database (FRD)	☐	☐	☐	☐	☐	☐
Changes Since Last FIRM (CSLF)	☐	☐	☐	☐	☐	☐
Flood Depth Analysis Grids (FDAG)	☐	☐	☐	☐	☐	☐
Flood Risk Assessment (FRA)	☐	☐	☐	☐	☐	☐
Flood Risk Report (FRR)	☐	☐	☐	☐	☐	☐
Flood Risk Map (FRM)	☐	☐	☐	☐	☐	☐
Flood Risk Products Index (FRPI)	☐	☐	☐	☐	☐	☐
Supplemental Data	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.18. Flood Risk Products Data Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 19 – Independent QA/QC of Flood Risk Products

Instructions: Add the required information to Table 30. The CTP will produce the items listed in the Flood Risk Products Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA. The current MIP guidance document has a section for data upload methods and limits. It also explains how performance will be tracked for Flood Risk Products.

Submit deliverables through the FEMA Regional Office with help from the Regional Service Center (RSC). The Mapping Partner will confirm and/or obtain any revised or updated guidance from the FEMA Regional Office or FEMA RSC lead.

Data from flood hazard assessment will be coordinated with your FEMA Regional Point of Contact. Those data will be submitted 60 days before release of this data to the public.

Table 30. Task 19 – Independent QA/QC of Flood Risk Products

	By watershed, mark "X" if deliverable will be produced under this task					
Deliverable	**Water-shed 1**	**Water-shed 2**	**Water-shed 3**	**Water-shed 4**	**Water-shed 5**	**All Projects**
Flood Risk Datasets (CSLF, FDAG, FRA)	☐	☐	☐	☐	☐	☐
Flood Risk Products (FRD, FRR, FRM)	☐	☐	☐	☐	☐	☐
Flood Risk Products Index	☐	☐	☐	☐	☐	☐
Project Narrative of assumptions made and approaches taken for analysis	☐	☐	☐	☐	☐	☐
Large Scale Automated Engineering Report or Base Level Engineering Report	☐	☐	☐	☐	☐	☐
The Hazus system files (.hpr files)	☐	☐	☐	☐	☐	☐
Updated local parcel/building information, topographic data, and other data used in analysis	☐	☐	☐	☐	☐	☐
Description of data used that were not part of the default Hazus datasets	☐	☐	☐	☐	☐	☐

	By watershed, mark "X" if deliverable will be produced under this task					
QR checklist and any documents that relate to independent reviews of Flood Risk Product submittals	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.19. Independent QA/QC of Flood Risk Products. If you accept the text as is, you do not need to copy the wording here. Detail here only what you plan to change. {Include start and end dates to this task} {enter custom scope elements}						

Task 20 – Draft FIRM Database Capture

Instructions: Add the required information to Table 31. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. The CTP will produce the items listed in the Draft FIRM Database Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 31. Task 20 – Draft FIRM Database Capture

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Watershed 1	Watershed 2	Watershed 3	Watershed 4	Watershed 5	All Projects
FIRM Database Draft Metadata	☐	☐	☐	☐	☐	☐
FIS Text Overflow for Principal Flood Problems and Special Considerations (if necessary)	☐	☐	☐	☐	☐	☐
FIRM Database Files	☐	☐	☐	☐	☐	☐
BLE (note if checked, this is also required under Part 2.12. Hydraulics Data Capture)	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.20. Draft FIRM Database Capture. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 21 – Produce Preliminary Map Products

Instructions: Add the required information to Table 32 and Table 33. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. The CTP will produce the items checked below, which are listed in the Produce Preliminary Products Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 32. FIRM Panel Summary

Watershed/Area of Study	County/Communities	Number of Revised Panels

Table 33. Task 21 – Produce Preliminary Map Products

	By watershed, mark "X" if deliverable will be done under this task					
Deliverable	**Water-shed 1**	**Water-shed 2**	**Water-shed 3**	**Water-shed 4**	**Water-shed 5**	**All Projects**
FIRM Database Preliminary Metadata	☐	☐	☐	☐	☐	☐
FIRM Database Files	☐	☐	☐	☐	☐	☐
Complete set of Preliminary FIRM panels showing all detailed flood hazard information at a suitable scale as developed by FEMA's Automated Map Production (AMP) tool	☐	☐	☐	☐	☐	☐
FIS Report	☐	☐	☐	☐	☐	☐
Preliminary or Revised Preliminary Issuance Letters	☐	☐	☐	☐	☐	☐
Preliminary Summary of Map Actions (SOMAs) prepared using the SOMA Tool on the MIP	☐	☐	☐	☐	☐	☐
Pre-and Post-Quality Review 3 (QR3) Documentation	☐	☐	☐	☐	☐	☐

	By watershed, mark "X" if deliverable will be done under this task					
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.21. Produce Preliminary Map Products. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 22 – Independent QA/QC: Produce Preliminary Map Products

Instructions: Add the required information to Table 34. The responsible Mapping Partner(s) will produce the items listed in the Produce Preliminary Products Data Capture section of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 34. Task 22 – Independent QA/QC: Produce Preliminary Map Products

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
QR checklist and any documents that relate to independent reviews of Preliminary Map Product submittals	☐	☐	☐	☐	☐	☐
Revised data elements based on QR	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.22. Independent QA/QC: Produce Preliminary Map Products. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 23 – Distribute Preliminary Map Products

Instructions: Add the required information to Table 35. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. The CTP will produce the items listed in the Distribute Preliminary Products section within the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 35. Task 23 – Distribute Preliminary Map Products

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Water-shed 1	Water-shed 2	Water-shed 3	Water-shed 4	Water-shed 5	All Projects
Distribute Preliminary Products receipts	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.23. Distribute Preliminary Map Products. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the tasks that were chosen for this activity here. {Include start and end dates to this task} {enter custom scope elements}						

Task 24 – Post-Preliminary Map Production

Instructions: Add the required information to Table 36. In the custom scope elements cell, add the start and end dates for this task. Justify the omission of this task and/or specific deliverables if needed. The CTP will produce the items listed in the CCO Meeting Data Capture, Feedback Data Capture, Due Process, and Final Map Production and Distribution Products Data Capture sections of the current Data Capture Technical Reference. Upload the data to the MIP to make them available to FEMA.

Table 36. Task 24 – Post-Preliminary Map Production

Deliverable	By watershed, mark "X" if deliverable will be done under this task					
	Watershed 1	Watershed 2	Watershed 3	Watershed 4	Watershed 5	All Projects
CCO Meeting Data Capture (Task Documentation and Correspondence)	☐	☐	☐	☐	☐	☐
Feedback Data Capture (Task Documentation, Correspondence, Feedback Type)	☐	☐	☐	☐	☐	☐
Due Process (Task Documentation, Correspondence, Appeal Start Documentation, Affidavit/Receipt Documentation, Record Appeal/Comment Documentation)	☐	☐	☐	☐	☐	☐
Final Map Production and Distribution Products Data Capture (Technical Support Data Notebook [TSDN] Checklist, QR 5-7 submittals, revalidation letters)	☐	☐	☐	☐	☐	☐
Other: {Insert additional details}	☐	☐	☐	☐	☐	☐
Custom Scope Elements						
Note that if you do not modify this cell, you agree to the scope as written in Part 2.24. Post-Preliminary Map Production. If you accept the text as is, you do not need to copy the wording here. Enter any other deliverables for development in the "Other" row in the table above. Detail the deliverables in this section. {Include start and end dates to this task} {enter custom scope elements}						

1.2.2. ADDITIONAL LEVEE SUMMARY TABLE

Please complete Table 37. Levee System Data in Study Area below. Example text for completing this table is included in italics. You may delete that text. It is for guidance only.

Table 37. Levee System Data in Study Area

Project Area	National Levee Database (NLD) Levee System ID [5]	NLD Levee System Name	Effective FIRM Status of Levee	Proposed Mapping Path Forward [6]
	Example: 5000000001	*Example: Floodville Levee RB*	*Example: Accredited*	*Example: TBD*
	5000000002		*PAL*	*TBD*
	1000000001		*Non-accredited*	*TBD*
	5000000001		*Accredited*	*Accredit*
	5000000002		*PAL*	*Freeboard Deficient*
	1000000001		*Non-accredited*	*Natural Valley*
	5000000001		*Accredited*	*Natural Valley*
	5000000002		*PAL*	*Natural Valley*
	5000000003		*Accredited*	*PAL*
	5000000004		*PAL*	*Accredit*
	5000000005		*Accredited by LOMR*	*Accredit*
	5000000006		*Non-accredited*	*Natural Valley*

[5] Levee System ID obtained from the NLD.

[6] Mapping Path Forward must be coordinated with the FEMA Regional Project Officer. All hydraulically significant non-accredited levees require Local Levee Partnership (LLPT) formation and an appropriate level of engagement.

1.3. Schedule, Performance, and Risk Identification (Required)

1.3.1. SCHEDULE

Instructions: Identify each deliverable for all activities included in this FRP MAS in Table 38. FRP Deliverables Schedule. Deliverables can be listed individually or grouped by a single date. Add more rows to the table as needed. Due dates will be discussed with the FEMA Regional Project Officer.

Table 38. FRP Deliverables Schedule

MAS Activities	Deliverable	Deliverable Due Date	Submitted To
[insert Flood Risk Project Activities in this column]		*Ex. two months from award date*	*FEMA Regional Project Officer*

The activities documented in this MAS will be completed in accordance with Table 38. FRP Deliverables Schedule. If this schedule needs to change, the CTP will coordinate with the FEMA Regional Project Officer and other necessary Mapping Partners as soon as possible. Deliverables must be uploaded to the MIP unless otherwise approved by the FEMA Regional Project Officer. The CTP must upload final deliverables in the MIP before the period of performance ends.

1.3.2. PERFORMANCE

The CTP must report performance of the grant in the progress report. The performance of the CTP is assessed by the measures below. The 2025 CTP Performance Measures Matrix and your FEMA Regional Project Officer will define quantitative targets for performance measures. Table 39. Performance Measures Targets lists those measures.

Instructions: Add measures to the table below. Base them on the 2025 CTP Performance Measures Matrix and coordination with your FEMA Regional Project Officer.

Note: Performance measures are parameters captured to track project performance. The CTP Performance Measures Matrix, included in the Appendix of the Notice of Funding Opportunity (herein referred to as the funding opportunity), shows how project details and action items can be used to demonstrate a project aligns with its stated goals.

Identify the appropriate performance measures in Table 39 based on the "2025 CTP Performance Measures Matrix." Coordinate with your FEMA Regional Project Officer. **Delete this instructional note before submitting the application.**

Table 39. Performance Measures Targets

Outcome [7] and Output Measure (from NOFO)	Output Measurement [8] (with customized Target)	Recorded Unit/Scale
Outcome: Advancement of program metrics and/or accomplishment of project performance measures, captured as Earned Value **Output Measure:** SPI Threshold (final)	Report on SPI. Must be between **0.92 and 1.08**. If it is not, provide information on what is being done to correct the problem.	SPI ratio (Budgeted Cost of Work Performed/ Budgeted Cost of Work Scheduled [planned])
Outcome: Advancement of program metrics and/or accomplishment of project performance measures, captured as Earned Value **Output Measure:** CPI Threshold (final)	Report on CPI. Must be between **0.92 and 1.08**. If it is not, provide information on what is being done to correct the problem.	CPI ratio (Budgeted Cost Work Performed/ Actual Cost Work Performed)
{Insert Outcome and Output Measure}	{Insert Output Measurement Option (customized)}	{Insert Recorded Unit/Scale}
{Insert Outcome and Output Measure}	{Insert Output Measurement Option (customized)}	{Insert Recorded Unit/Scale}
{Insert Outcome and Output Measure}	{Insert Output Measurement Option (customized)}	{Insert Recorded Unit/Scale}

[7] An outcome is an observable and measurable change of knowledge, behavior, skills and/or efficiency resulting from the MAS project.

[8] An output is a direct, specific, and quantifiable product of CTP activities that lead to/indicate success of the intended outcome, expressed in units of measure that allow quantifiable recording of performance.

1.3.3. RISK IDENTIFICATION AND MITIGATION

Risks to the planned completion of a project may come from many sources. Identify risks in the planning phase. Monitor them throughout the project to assess their potential impact. Form plans to solve those issues and carry out those plans as needed.

Instructions: {Add risk, impact and solution strategy information to this paragraph and the table below, as needed. Add an Integrated Baseline Review for the project. The Regional Office requires this.}

Table 40. Project Risk Identification and Mitigation

Project Risk	Potential Impact	Solution Strategy

1.4. Project Management

Project management is the active planning, organizing, and managing resources to meet project goals and objectives. The CTP will coordinate project management and technical mapping with the FEMA Regional Office.

The CTP will work with FEMA or its designee to set a baseline schedule for each project activity. FEMA or its designee will use the individual project task schedule and create the FRP in the MIP. It will also set goals for the project activities. It will do so with schedule and cost information, within 30 days of the funds being awarded, and with FEMA's approval of the final cost and schedule. The baseline schedule for individual project activities may be modified in the MIP with approval from the FEMA Regional Project Officer. This does not require a change to this MAS unless the project end date changes.

For projects that start after Discovery, the Discovery Database for the with study scope (in DCS_S_Discovery_Map feature class), study watershed (in DCS_S_HUC feature class), and FIRM panels to be updated (in DCS_S_Prp_FirmPan feature class) is provided. The available lidar footprint is also provided. The CNMS database is updated after Discovery.

The CTP will alert FEMA and all applicable parties of all meetings with community officials and other relevant meetings three to six weeks before the meeting. These notifications will list the intended audience and meeting type (in person, virtual, hybrid). FEMA and/or its contractor may choose to attend the community meetings.

The CTP will maintain an archive of all data submitted. It must retain all supporting data for three years after a funding recipient submits its final expenditure report to FEMA. The CTP must demonstrate to FEMA compliance with Subpart 24.1 of the Federal Acquisition Regulation (FAR). This relates to the handling of PII associated with the activities in this MAS.

The CTP must provide a QMP to include an independent QA/QC plan for all assigned activities. The CTP will submit a summary report. This report will share and explain the results of all automated or manual QA/QC review steps. It should include the process for all assigned activities. The QMP is delivered directly to the FEMA Regional Office. Guidance for Flood Risk Analysis and Mapping: Quality Management for Flood Risk Projects offers guidance and recommended approaches to support quality management.

The CTP or FEMA's contractor may perform independent QC review activities at the discretion of FEMA. If the CTP will be responsible for the QC review, state who will perform QC in this MAS. The CTP will need to submit its QC plan to the FEMA Regional Project Officer for approval.

Please note that FEMA will also perform periodic audits and overall study/project management. This includes national QRs required per FEMA standards for all FRPs. The CTP must address all comments that result from national QRs and any other QRs the FEMA Regional Office requires. This includes the re-submittal of deliverables to pass technical or quality review. This applies even if the CTP does not perform the independent QC review mentioned above. The CTP will submit regulatory products to FEMA's designated National QR reviewer (for QR 1-8 reviews) for review and approval. It must do so before public issuance. Some activities require metadata.

FIRM-related tasks require a passing QC report from FEMA's National FIRM database auto-validation tool: the Database Validation Tool (DVT) for QRs #1, #2, and #5. The DVT is FEMA's national FIRM database auto-validation tool. FEMA standards require this step. You can find the DVT in the MIP tasks that relate to the QRs above: Draft FIRM Database Capture, Produce Preliminary Products Data Capture, and Final Mapping Products Data Capture. Training materials for this step are available on the MIP at MIP User Care Training Materials.

FEMA will provide download/upload capability for data submittals through the MIP. As each activity is completed, the CTP or other designee must submit the data to the MIP. After data is submitted, a Validation task must be completed. FEMA's designee will complete a validation task.

The CTP assigned to the activity will respond to any comments that come from the mandatory quality control checks by the Production and Technical Services (PTS) contractor. The PTS QC process is nationally funded. Each non-PTS study requires it.

With help from the FEMA Regional Project Officer, the CTP will establish a Project Management Team (PMT). This team consists of representatives from the CTP, FEMA's Regional Engineer, and other appropriate parties (e.g., FEMA contractors) at the discretion of FEMA. The PMT will manage the activities in this MAS. The FEMA Regional Office will be provided with documentation that identifies the PMT.

1.5. Guidelines and Standards

The standards relevant to this MAS are found in FEMA Policy 204-078-1 Standards for Flood Risk Analysis and Mapping, Revision 14.

This Policy supersedes all previous standards in the Guidelines and Specifications for Flood Hazard Mapping Partners. This includes all related appendices and procedure memoranda. Find more information and links to guidance documents, technical references, templates, and other resources that support these standards on the FEMA Guidelines and Standards website. This is at: Guidelines and Standards for Flood Risk Analysis and Mapping Activities Under the Risk MAP Program. FEMA reviews standards each year. Please use the most current version of the policy.

For any studies with Floodplain Mapping Data Capture tasks, the CTP will perform self-certification audits to confirm compliance with the required Floodplain Boundary Standards (FBS) for all flood hazard areas. All FIRM database work will comply with applicable standards and requirements specified in the FIRM Data Technical Reference and other related documents. You can find these at "Guidelines and Standards for Flood Risk Analysis and Mapping Activities Under the Risk MAP Program." All studies must also pass the required automated and visual national QRs before the distribution of Preliminary or effective copies of the FIS report, SOMA letters, FIRM panels, or FIRM database. You can find more information about coastal flood hazard analysis and mapping at Coastal Flood Risk.

For studies producing BLE, the data must be submitted in the database format specified in latest version of the FIRM Database Technical Reference. Also, studies producing new FIRM panels including draft, preliminary and final must utilize the AMP Tool. Any deviations for either of these require an approved exemption request from both the FEMA regional and headquarters project officer.

CTPs and their sub-awardees must comply with the regulations in Title 44 of the Code of Federal Regulations (CFR): Emergency Management and Assistance, specifically Subchapter B: Insurance and Hazard Mitigation Sections 65, 66 and 67. They must also comply with the appropriate year CTP funding opportunity and Agreement Articles. CTPs will also coordinate with their FEMA Regional Office to determine if any additional requirements must be met.

1.6. Use of Contractors

Check the applicable statement in Table 41.

Table 41. Use of Contractors

Select One	Contractor Options
☐	CTPs may engage contractor support for all activities in this MAS, except staffing and mentoring, which must be completed by the CTP. The CTP intends to engage the services of the contractor in Table 1 for this MAS. The CTP will ensure that the procurement for all contractors employed for this program management activity complies with the requirements of Title 2 CFR 200 documents at: Part 200 - Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. Guidance provided in this part includes, but is not limited to, contract administration and recordkeeping, notification requirements, review procedures, competition, methods of procurement, and cost and pricing analysis. View the Title 2 CFR 200 documents. Contractors must not pose a conflict-of-interest issue.
☐	The CTP does not intend to engage a contractor for this MAS. It will not transfer funds to agencies other than those identified in the approved cooperative agreement application without prior approval from FEMA. The CTP will ensure that the procurement for any contractors complies with the requirements of Title 2 CFR 200 documents at: Part 200 - Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. Guidance provided in this part includes, but is not limited to, contract administration and recordkeeping, notification requirements, review procedures, competition, methods of procurement, and cost and pricing analysis. View the 2 CFR 200 documents. Contractors must not pose a conflict-of-interest issue.

1.7. Reporting and Performance

Financial Reporting: Because it is using FEMA funding, the CTP's financial report requirements will meet the terms of the funding opportunity, Articles of Agreement or Award Notice for this MAS. Refer to Title 2 CFR Part 200. The CTP will provide financial reports to the FEMA Regional Project Officer and Assistance Officer in accordance with the terms of the signed Cooperative Agreement for this MAS.

Performance Reporting: CTPs will provide a signed performance report using the required list of information shown in the funding opportunity. This will be done quarterly during the period of performance, including partial calendar quarters and periods during which no grant award activity occurs. CTPs may substitute an old Standard Form-Performance Progress Report (SF-PPR) for the performance report, if preferred. See the minimum requirements for progress reporting in Title 2 CFR Part 200. The FEMA Regional Project Officer may request more information on progress as needed.

The CTP will meet with FEMA and/or its contractor(s) as frequently as needed to review the project's progress and the quarterly financial and status submittals. These meetings may alternate between the FEMA Regional Office, the CTP office, and conference calls.

The CTP will communicate with communities during each project. Continued engagement is needed and appropriate. It will build upon the relationships established or enhanced during Discovery and will provide transparency into the Risk MAP process. Community engagement may occur through monthly or quarterly updates or project status calls with community leaders, project websites with updates at milestones or along a timeline, or other methods.

CTPs are responsible for entering their quarterly performance of each measure into the CTP Performance Measures Reporting Tool (Tool) each quarter, unless otherwise directed by their FEMA Regional Project Officer. Each output measurement identified above must have a quarterly performance reported in the Tool within one month of the end of the quarter. Quarterly performance data can be exported from the Tool and attached to the Quarterly Report that must be uploaded to FEMA Grants Outcomes.

1.8. Privacy and Protection of Personally Identifiable Information

A CTP's organizational access to the MIP provides you access to PII. Please have your organization coordinate with the FEMA Regional Office. Each user must currently meet the new Risk Analysis Management (RAM) Access Portal (RAP) process requirements.

Please contact your FEMA Regional Project Officer for more information.

1.9. Technical and Administrative Support Data Submittal

The project team members for this FRP responsible for completing activities in this MAS will comply with the data submittal requirements. These are summarized below and in appropriate guidance.

Submit all supporting documentation for the activities in this MAS per FEMA standards and requirements. Include a Flood Elevation Determination Docket (FEDD) folder. Make submittals to the appropriate PTS for a review of required materials. The CTP will respond to requests from FEMA or its contractors for more information. It will also make sure that the TSDN includes all required documents.

Some issues could affect the completion of an activity within the proposed scope or budget. If any arise, the CTP will complete and submit to FEMA a Special Problem Report (SPR) as soon as possible after identifying the issue. The SPR describes the issue and proposes possible resolutions. For additional information on SPRs, consult the FEMA Regional Office.

Find information to support FEMA standards and requirements for the TSDN and FEDD file in the Data Capture Technical Reference document and other relevant guidance documents. The first column of Table 42 is the list of Mapping Activities. The remainder of the columns represent TSDN sections.

Table 42. TSDN Section Mapping Activities

Mapping Activities	Change Requests	Telephone Conversation Reports	Meeting Minutes/ Reports	General Correspondence	Hydrologic Analyses	Engineering Analyses	Hydraulic Analyses	Key to Cross-Section Labeling	Key to Transect Labeling	Draft FIS Report	Mapping Information	Miscellaneous Reference
Discovery Data Capture	X	X	X	X							X	X
Independent QA/QC: Discovery Data Capture	X	X	X	X							X	X
Survey Data Capture	X	X	X	X	X		X	X	X			X
Independent QA/QC: Survey Data Capture	X	X	X	X	X		X	X	X			X
New/Existing Topographic Data Capture	X	X	X	X							X	X
Independent QA/QC: New/Existing Topographic Data Capture	X	X	X	X							X	X
Terrain Data Capture	X	X	X	X							X	X
Independent QA/QC: Topographic Data Capture	X	X	X	X							X	X
Base Map Data Capture	X	X	X	X	X		X	X	X	X	X	X
Independent QA/QC: Base Map Data Capture	X	X	X	X	X		X	X	X	X	X	X
Hydrology Data Capture	X	X	X	X	X	X	X	X	X	X		X
Independent QA/QC: Hydrology Data Capture	X	X	X	X	X		X	X	X	X		X

Mapping Activities	Change Requests	Telephone Conversation Reports	Meeting Minutes/ Reports	General Correspondence	Hydrologic Analyses	Engineering Analyses	Hydraulic Analyses	Key to Cross-Section Labeling	Key to Transect Labeling	Draft FIS Report	Mapping Information	Miscellaneous Reference
Hydraulics Data Capture	X	X	X	X	X	X	X	X	X	X	X	X
Independent QA/QC: Hydraulics Data Capture	X	X	X	X	X		X	X	X	X		X
Coastal Data Capture	X	X	X	X	X	X	X	X	X	X	X	X
Independent QA/QC: Coastal Data Capture	X	X	X	X	X		X	X	X	X		X
Levee Data Capture	X	X	X	X	X	X	X	X	X	X		X
Independent QA/QC: Levee Data Capture	X	X	X	X	X		X	X	X	X		X
Levee Analysis and Mapping Procedures Data Capture	X	X	X	X	X	X	X	X	X	X		X
Independent QA/QC: Levee Analysis and Mapping Procedures Data Capture	X	X	X	X	X		X	X	X	X		X
Floodplain Mapping Data Capture	X	X	X	X	X		X	X	X		X	X
Independent QA/QC: Floodplain Mapping Data Capture	X	X	X	X	X		X	X	X		X	X
Draft Digital Flood Insurance Rate Map (DFIRM) Database Capture	X	X	X	X							X	X
Independent QA/QC: Draft DFIRM Database Capture	X	X	X	X							X	X

Mapping Activities	Change Requests	Telephone Conversation Reports	Meeting Minutes/ Reports	General Correspondence	Hydrologic Analyses	Engineering Analyses	Hydraulic Analyses	Key to Cross-Section Labeling	Key to Transect Labeling	Draft FIS Report	Mapping Information	Miscellaneous Reference
Flood Risk Products Data Capture	X	X	X	X							X	X
Independent QA/QC of Flood Risk Products Data Capture	X	X	X	X							X	X
Produce Preliminary Products Data Capture	X	X	X	X							X	X
Independent QA/QC: Preliminary Products Data Capture	X	X	X	X							X	X
Distribute Preliminary Products	X	X	X	X							X	X
Due Process Management	X	X	X	X							X	X
Event Data Capture												
Final Mapping Products Management	X	X	X	X							X	X

1.10. Certifications

1.10.1. DATA CAPTURE

Data Capture: See the current Data Capture Technical Reference document for instructions on certifications. Most data capture tasks include certification forms and a project narrative. CTPs should complete and submit only one Certification of Completeness and/or one Certification of Compliance form when the task is complete.

1.10.2. PERFORM FIELD SURVEYS AND DEVELOP TOPOGRAPHIC DATA

A registered Professional Engineer or licensed land surveyor will provide an accuracy statement for field surveys and/or topographic data used. They must also confirm that these data meet the

accuracy statement provided. Assess state data accuracy per the Federal Geographic Data Committee National Standards for Spatial Data Accuracy. The American Society for Photogrammetry and Remote Sensing standards are also acceptable.

1.10.3. PREPARE BASE MAP

- A community official or responsible party will provide written certification that the digital data meet FEMA minimum standards and specifications.
- The CTP will provide documentation that the digital base map can be used by FEMA. The CTP must also show that the map can be freely made available to the public. Uploading base map data to the MIP does not mean that FEMA can use the digital base map. The CTP still must document that FEMA can use the digital base map.
- Certifications are required when the intermediate or final data are submitted.

1.10.4. DEVELOP HYDROLOGIC DATA, DEVELOP HYDRAULIC DATA, PERFORM COASTAL ANALYSIS, AND PERFORM FLOODPLAIN MAPPING

- A registered Professional Engineer will certify hydrologic and hydraulic and coastal analyses data as written in Title 44 CFR 65.6(f).
- Any newly identified levee systems to be accredited on the FIRM must have the data certified by a registered Professional Engineer, or a federal agency with responsibility for levee design in Title 44 CFR 65 - Identification and Mapping of Special Hazard Areas, especially Section 65.10, Mapping of areas protected by levee systems. FEMA collects certified data pertaining to these for levee system accreditation, and certain scenarios pertaining to the analysis and mapping procedures for non-accredited levees.
- Certifications are required when the intermediate or final data are submitted.

1.11. Technical Assistance and Resources

Project team members may obtain copies of FEMA-issued Letters of Map Change (LOMCs), archived engineering backup data, and data from the CNMS process from FEMA and/or your FEMA Regional Project Officer.

You can download general technical and programmatic information from the FEMA website at: Cooperating Technical Partners Program. FEMA and/or its contractor can provide specific technical and programmatic support. Request such aid through the FEMA Regional Project Officer noted in Table 1. Project and Point of Contact Information.

Project team members also may consult with the FEMA Regional Project Officer to request support for selection of data sources, digital data accuracy standards, assessment of vertical data accuracy, data collection methods or subcontractors, and Geographic Information System (GIS)-based engineering and modeling training.

Please contact the FEMA Regional Office to obtain the current Risk MAP timeline.

You may request help with the MIP at FEMA-RiskMAP-ITHelp@fema.dhs.gov.

2. Part 2 – Available FRP Scope Activities

Note, unless otherwise noted in Part 1.2.1, the CTP is required to fulfill all scope requirements in the tasks described below. Submit all relevant documentation and correspondence to FEMA upon completion of those tasks.

The objective of the FRP documented in this MAS is to develop and/or support flood hazard data and program-related tasks through technical risk analysis and mapping activities. These activities may result in a new or updated FIRM and FIS report for one or more communities in the project area.

The mapping activities in this MAS will be completed as specified in the funding opportunity, Award Notice and/or Articles of Agreement. Either FEMA or the CTP may terminate the mapping activities per the provisions of the Partnership Agreement. If these mapping activities are terminated, the CTP must submit and update into the MIP (if applicable) all products produced to date. It will also return any remaining funds provided by FEMA for this MAS, from uncompleted activities to FEMA.

2.1. Earned Value Data Entry

Scope: The FEMA MIP tracks the earned value of FRPs. The MIP automatically calculates this information. It compares the actual cost and schedule of work performed, or "actuals," to the expected cost and schedule of work performed, or "baseline."

Once the FEMA Regional Office has funded a project, FEMA or its contractor will create the tasks in the MIP. This step sets the baseline for the project in the MIP. It uses the cost and schedule information for each task as outlined in this document.

The MIP study application lets FEMA and the CTP manage the status of these projects at a task level. The cost and schedule information are updated monthly by the CTP for each contracted task. These are compared to the baseline for each task. This information is rolled up to a project level. The FEMA Regional Office monitors this to assess progress and Earned Value.

Earned Value data entry requires the CTP to update cost, schedule, and performance (physical % complete), and as-of date in the MIP each month for each task.

Once the baseline has been set in the MIP, the CTP will input the performance and actual cost to date. The CTP does so for all tasks within each project for which they are responsible. The CTP must complete this at least once every 30 days and at the task's completion. When a task is completed and has been validated (if applicable), the CTP will enter "100% complete," the actual completion cost, and the actual completion date within the Track Task Progress Workbench as applicable. The tasks will be available on the Track Progress workbench up to 90 days after the completion of the producer task in each purchase.

The CTP must also populate the MIP with appropriate leverage information regarding who (CTP or community) paid for the data provided and the amount of data the FRP used. The CTP will maintain

an SPI and CPI between 0.92 and 1.08. The CTP must submit any SPRs explaining any variance in a timely manner as required.

The CTP will report each month on the Earned Value of projects that are in the MIP. They must explain variances outside of the tolerance defined in Table 39. Performance Measures Targets. The CTP must initiate and create a Corrective Action Plan (CAP) when a CTP is outside of the tolerance. The CTP is required to implement this CAP as instructed by their FEMA Regional Office. A CAP must define the reason for the variance and the intended resolution. FEMA Regional Offices will coordinate with FEMA Headquarters when CAPs are developed.

The MIP now tracks Program Management and overarching Community Outreach and Mitigation Strategies (COMS) Statement of Work (SOW) tasks. Document and define cost and schedule performance measures in those separate MASs or SOWs. Use these measures to monitor partner performance and to determine future funding eligibility. This exception only applies to tasks that cannot be conducted or tracked in the MIP.

The FEMA Regional Project Officer, as needed, may request additional status information on an ad hoc basis.

2.2. Project Outreach and Communication Plan

Scope: The CTP will develop the Project Outreach and Communication Plan (POCP) with the FEMA Regional Office at the start of this activity. This will help to support the implementation of the mapping project. The FEMA Regional Office will have access to many customizable outreach tools i.e., the Flood Risk Community Toolkit for Community Officials or the Guides to Expanding Mitigation. These tools were made for this process. They support each touchpoint that the PMT has with the community.

2.3. Events

Note: Community engagement and outreach takes place throughout the life of the FRP. Work with your FEMA Regional Office to develop a Project Outreach and Communication Plan.

A different tracking method is acceptable with approval from the FEMA Regional Office. Up to 10% of the total budget can be used for Community Engagement. An additional (up to) 10% of the total budget can be used for Project Outreach. The activities here are for project-specific community engagement and outreach. The main COMS SOW can be used for broader program-wide engagement activities.

2.3.1. RISK COMMUNICATION AND OUTREACH

Scope: Risk Communication and Outreach activities funded through this MAS will not replace or duplicate Community Engagement activities that other grants or contracts fund. Document other program-wide COMS activities that CTPs perform in a separate SOW document.

The activities below support ongoing efforts that relate to this project. These efforts support working relationships among Federal, State, Local, Tribal, and Territorial governments with private and public interests to reduce the impact of natural disasters where a community may change or avoid its interaction with a natural hazard. Review how these activities are carried out throughout the Risk MAP lifecycle. Include the meetings defined within it.

These approaches should help to increase risk awareness and develop actionable steps to reduce risk within the FRP footprints. Carry out these activities as directed by the FEMA Regional Project Officer to:

- Increase the understanding of natural hazard risk within a community.
- Support local efforts to reduce natural hazard risk within a community or watershed area.
- Make meetings and engagement opportunities with communities more effective throughout the Risk MAP life cycle.

2.3.2. ADVANCING MITIGATION ACTION

Scope: When an individual, community, watershed group or other entity acts to reduce their risk of a hazard, which is a mitigation action. Advancing mitigation actions and strategies is a key part of the Risk MAP program vision. It is also vital to moving communities toward resilience. Resilience is reducing vulnerability and overall risk while increasing the ability to recover. As such, helping communities carry out mitigation actions should be a part of each FRP. Community mitigation action cannot be bought through a Risk MAP project. However, proper project and communications planning throughout the Risk MAP process can influence and advance it. The tools and tactics identified below can help to plan strategic communication.

2.3.3. WATERSHED AND COMMUNITY ASSESSMENT

Scope: When you work with a community, it is important to understand the challenges they face. Sometimes, what looks like an obvious challenge is based in something you did not expect. It is crucial to gather information. It helps you know the communities with whom you work. It can also inform your mapping and outreach. CTPs should plan time to meet with watershed and high-risk communities. This will help CTPs learn what is important to them, their mitigation priorities, and their relationships with FEMA. This may include holding telephone, virtual, or in-person discussions with local officials and residents to learn about the watershed and key stakeholders. These talks should include local planners, floodplain administrators (FPAs), elected officials, community leaders (including local organizations), local levee/dam/coastal leadership/business owners and others. Base this on local needs and the guidance provided on Discovery stakeholders.

2.3.4. ACTION IDENTIFCATION, PLANNING, AND ASSESSMENT

Scope: Identify, plan, and assess actions, to help communities learn of and/or advance mitigation opportunities and/or choose alternatives. Do so by providing data, analysis, and/or strategic support.

Use information learned from conversations with community influencers, the Hazard Mitigation plan, and Discovery to identify the top two or three actions to advance within each community. Work with community contacts to form a plan to advance those actions.

2.3.5. 30-DAY REVIEW OF PROPOSED MODELS

Scope: Before beginning any data development tasks supporting an FRP that includes a FIRM update, notify each community affected by new or updated regulatory products (FIS or FIRM) of the planned models. Those communities will have a 30-day review period that starts when they are notified. They can use this time to consult with FEMA and the CTP about whether the mapping models and results are a good fit. These results do not guarantee that a change will be made. Clearly document all decisions. This consultation does not waive or affect the right of the community to later appeal any flood hazard determinations. See Standard Identification (SID) 620 for more information. You can find it at: Flood Risk Templates and Other Resources.

2.3.6. 30-DAY REVIEW OF COMPLETED MODELS, WORK MAPS, AND DATABASE

Scope: The CTP must provide access to the draft FIRM database and other needed data at community request by the end of QR 1. This applies when a FRP includes new or updated FIRM panels. The CTP also must give the affected communities a 30-day review period. In that time, the communities may provide data to FEMA and the CTP. These data can add to or modify the current data. The CTP should add any community-submitted data into the project as appropriate. To be added to a study, data or information must be consistent with current engineering principles or do one of the following to show scientific incorrectness:

- Identify and document the methods or assumptions claimed to be scientifically incorrect.
- Provide data that show why the methods or assumptions used are not appropriate.
- Provide new or alternative analysis and mapping data using methods that are consistent with current engineering principles that meet FEMA's Standards.
- Provide technical information or data that show how the new or updated analysis and mapping are more correct.

See SID 621 for more information. You can find it at: Flood Risk Templates and Other Resources.

2.3.7. TELEVISION AND RADIO OUTREACH

Scope: The project team will work with the appropriate staff in the FEMA Regional Office of External Affairs, other FEMA staff, and community officials to engage with local radio and television outlets. The team will further inform property owners about flood map revisions and appeals. FEMA cannot fund advertising. As such, public service announcements are a great chance to meet this standard. Any engagement with the media should explain the full appeal process for flood hazard information. This should include comments on other information on the FIRM and FIS report. Users should review

the Stakeholder Engagement - Due Process, Post-Preliminary Due Process guidance documents and associated templates available in the G&S Library.

2.3.8. MEETINGS

Scope: FRPs will include in-person and/or virtual chances to engage communities, build risk awareness, increase capabilities for risk communication, and stimulate mitigation action at the local level. The main goal of these meetings is to support understanding and ownership of the mapping process. This must occur at both the state and local levels. Well-planned and executed community engagement and project outreach can reduce political stress, conflict in the media, and public controversy. These can arise from a lack of information, misunderstanding, and/or misinformation. Community engagement and outreach activities can also help the CTP, FEMA, and other members of the PMT respond to congressional inquiries. The CTP will capture all meeting information in the MIP. This includes sign-in sheets, attendee lists, meeting minutes, and shared documents.

Make provisions for remote access video/audio feeds for those who cannot attend in person. These may also work as an alternative to in-person meetings. These opportunities consist of:

- *Discovery Meeting* – This meeting is held to engage communities, learn the communities' and watershed's needs, inform the communities about the purpose of FEMA's engagement, balance FEMA resources, build partnerships, and plan project execution. It is a working meeting. It brings together a large cross- section of community stakeholders with interests that relate to flood risk and mitigation. It gives all the communities in a project area a chance to validate the collected information. It also lets them find areas of local concern that prior research or interviews may not have captured. Discovery is a separate task in this MAS.

- *Project Initiation Meeting/Coordination Call* – This communication will serve to talk about the project scope and timeline, set risk communication expectations for communities, share methods and data to be used in the mapping efforts in the project, and answer local questions. If regulatory product updates are included, this meeting can also serve as the required coordination with communities about the expected results (e.g., increasing/decreasing flood hazard areas/depths). You can hold this as an in-person meeting, a webinar or a conference call. This call/meeting is not required unless regulatory products are involved. Still, it helps to introduce the project to the involved communities six or more months after the post-Discovery coordination.

- *Local Levee Partnership Team (LLPT) Meeting* – An LLPT meeting and an appropriate level of engagement take place if a known non-accredited hydraulically significant levee is in the geographic project area. This occurs per the Guidance for Flood Risk Analysis and Mapping - Levees. A Levee Analysis and Mapping Procedures data capture task(s) will be created in the MIP. Such tasks collect non-engineering data from the LLPT meetings for each hydraulically significant levee. See Table 37. Levee System Data in Study Area.

- *Flood Risk Review Meeting* – This meeting gives communities engineering data and drafts of Flood Risk products. It is a chance to collect feedback and revise. It is also a chance to show how the datasets and outreach tools can help communities grow more resilient. They help communities understand risk data, talk about risk, prioritize mitigation actions, and improve mitigation plans. This especially applies to risk assessments and mitigation strategies. Activities include planning, presenting, and carrying out discussions with community officials about data inputs and engineering models used for flood studies. Draft work maps that show initial study results will be shared at the meeting. This meeting may kick off the 30-day review of materials at the workmap stage (e.g., workmap, associated models). It also may occur during the workmap stage. Note: It is also recommended to hold a meeting with the community and other stakeholders for a coastal storm surge study. Use this meeting to review the results of the storm surge or stillwater modeling. Do so before modeling coastal wave heights and mapping.

  Activities include:

  - Develop an Engagement Plan to reach the key community stakeholders during the Flood Risk Review period. These include local officials and community partners.
  - Build relationships with key community stakeholders. This will increase the reach of messages about risk. It will also improve the local will and ability to take mitigation actions.
  - Drive meeting attendance through personalized follow-up emails and calls to invitees.
  - Hold a meeting/webinar to engage and inform attendees.
  - Track engagement efforts and responses to reflect ongoing work.
  - Talk with local officials about their desired roles in engaging the public. Do so after Preliminary FIRMs are issued.
  - Create or update an outreach toolkit. Use materials such as fact sheets, talking points, social media template, Frequently Asked Questions (FAQs), brochures, and media engagement.
  - Revise or create a community profile and/or dashboard. This should reflect the current community information and insights.
  - Hold a post-meeting review session with the project team. Provide a future recommendations report.
  - Identify and document community commitments. These include mitigation action and engagement activities. This will help to inform future interactions with the community. Update and collect project charters (when applicable).

- *Resilience Meeting* – The meeting will give a full view of mitigation planning, mitigation options available to communities, the sharing of success stories, and potential mitigation actions that

communities can start. Activities include planning, presenting, and running community discussions that relate to mitigation plan status, community risks and hazards, chances for local mitigation action, and mitigation best practices. Document mitigation strategies that communities have carried out or advanced since Discovery at or before this meeting. Talking about a community's outreach plans at this meeting helps local officials start or strengthen local risk communication.

Activities include:

- Develop/update an engagement plan to reach potential partners in resilience. This includes local officials and community partners.
- Hold listening sessions with community stakeholders. This can help to learn their mitigation priorities. It can also inform the Resilience Meeting agenda.
- Foster relationships between community stakeholders and federal and state partners. This will help to build the local ability to take mitigation action.
- Drive meeting attendance through personalized follow-up emails and calls to invitees.
- Stand up a resilience team. It should consist of FEMA Regional Office staff and Subject Matter Experts. The team will help to prepare for the resilience meeting. It will also support the community.
- Brief local elected officials on the community's flood risk and the need for resilience.
- Hold a meeting.
- Provide community-specific applications/explanations of Flood Risk Products. This will help to teach community officials how to use those products to achieve or inform mitigation projects.
- Work with other key stakeholders, such as government agencies and nonprofits. They can help you work with the community to build resilience in a "Resilience Marketplace."
- Give the community a media relations strategy template and sample tools (e.g., media advisory, talking points). This will promote community knowledge of flood risk. It will also advance the discussion of key community mitigation projects.
- Revise or create a community profile and/or dashboard. Include it in the current community information and insights.
- Create a resilience report and dataset.
- Capture potential and/or advanced mitigation actions.

- Create a post-meeting outreach plan with a public awareness toolkit. The toolkit should include web content, newsletter content, media follow-up, and other parts. This will help the community keep the public informed of the valuable mitigation as it advances actions to increase public buy-in.

- Form a follow-up plan (e.g., one-year mitigation check-up). This will help to add community touchpoints and maintain relationships after the Risk MAP project ends. You can scope post-resilience support under special services.

- *Final Consultation Coordination Officer (CCO) Meeting and Public Meeting (or Open House)* – These meetings occur if an FRP includes regulatory products. They give local officials a chance to confirm that appropriate revisions have been made to previously shared information. They also let officials take ownership of the products and share their results with local community members. Activities include planning, presenting, and holding discussions with community officials for the awareness and acceptance of regulatory products. The meeting's goal is to review data inputs to a flood study; preview changes to Preliminary FIRM data and maps; talk about new flood risk and community actions to reduce risk; and share information about the appeals period, map adoption, and insurance impacts. The CTP will support the local officials at the public meeting or deliver the messages there if the local officials do not want to. Also, communities will be encouraged to find short- and long-term efforts to improve flood risk awareness and management. These meetings may be held at the same time. This occurs at the FEMA Regional Office's and community's discretion.

  Activities include:

  - Develop/update an engagement plan. This will help to reach key community stakeholders for the CCO meeting and Preliminary map release. Stakeholders include local officials, community partners, and key members of the public.

  - Build relationships with key community stakeholders. This will improve the reach of messages about risk. It also improves the local will and ability to take mitigation actions.

  - Drive meeting attendance through personalized follow-up emails and calls to invitees.

  - Hold meetings/webinars to further engage and inform attendees.

  - Track engagement efforts and responses to reflect ongoing work.

  - Start conversations with local officials about Flood Risk Products (e.g., Average Annualized Loss data, Changes Since Last FIRM). This will help to prepare them for more robust conversations about overall risk and the road to resilience.

  - Develop/update an outreach toolkit. Use materials such as a fact sheet, talking points, social media template, FAQs, brochures, and media engagement.

- Create or revise a community profile and/or dashboard. Include the most current community information and insights.
- Hold feedback check-ins with local officials. Gauge their satisfaction with the process to date.
- Hold a post-meeting review session with the project team. Share future recommendations report.
- Create a post-meeting outreach plan with a public awareness toolkit and coordinate with community officials. Use it to find available resources to promote flood risk education.
- Find and document community commitments to inform future interactions. These include mitigation action and engagement activities.

For all meetings, make provisions for remote access video/audio feeds for those who cannot attend in person.

The risk, need, and interest at the local level will inform the actual number of meetings. Determine this when forming the project-based communication plan.

2.3.9. STATUS REPORTS

Scope: In addition to Risk MAP meetings, the CTP will give communities regular status reports. These will detail the current project status, key accomplishments to date, identified risks (if any), and next steps. These steps include the next meeting date and content. FEMA can provide a template, or the CTP can create one. These meetings help to share information and continue dialogue between the PMT and the community. Provide the status reports to FEMA for review before electronic distribution. Send out project update status reports to communities at mid-points between each meeting. Do the same between the final meeting and effective date (if included in this MAS). This will help to introduce and prepare the communities for upcoming discussions.

2.4. Discovery

Discovery is the process of assessing a watershed to learn which parts of an FRP may be appropriate for study. Discovery starts once a watershed is prioritized and sequenced. An FRP may include regulatory and non-regulatory flood hazard identification, risk assessment, mitigation planning technical assistance, and outreach and communication assistance. The FRP may include one or all of these elements. This depends on the needs of the watershed. Discovery is split into six main activities: Stakeholder Engagement, Data and Information Collection, Data Information Analysis, Discovery Meeting, Post-Discovery, and Scope Refinement. Additionally, in support of comprehensive flood modeling, there is a task for geographies with ongoing validation studies (Validation Basin Support for Comprehensive Models.)

If BLE occurs before Discovery, use it to assess the current flood hazard inventory. Make it available to communities during the Discovery phase of the FRP. CTPs will use BLE data to provide flood

hazard analysis results and support data visualization. This will help them better engage community stakeholders. CTPs will also use BLE data to support engagement and productive communication.

Many templates have been created to aid the CTP during Discovery. Please contact the FEMA Region to get the templates. You can use these templates during Discovery as needed for the project. CTPs may revise or change these templates. They must coordinate with the FEMA Regional Office to do so.

The CTP will produce the deliverables listed in the Discovery Data Capture section of the current Data Capture Technical Reference document. You can find more information about Discovery and BLE at Guidance for Flood Risk Analysis and Mapping and Base Level Engineering Analysis and Mapping.

2.4.1. STAKEHOLDER ENGAGEMENT

Scope: Stakeholder Engagement starts with upfront coordination with the project management team. This helps to plan the Discovery effort, note roles and responsibilities, and plan the level of stakeholder engagement. You can scale engagement based on community need and risk. Work with this team throughout Discovery. The team includes state and FEMA representatives with mapping, risk, and mitigation expertise. It helps to collect data from national and state datasets and mitigation plans. It also collects information about communities through two-way information exchange before the Discovery meeting. All activities before the Discovery meeting should increase involvement, build partnerships, reduce the potential for conflict, and make sure that more people talk about local risks and think about mitigation actions. Some examples of pre-Discovery meeting activities are included below.

When you select the Stakeholder Engagement deliverable in Part 1.2.1 in Table 9. Task 4 – Discovery, perform and document the following activities:

- *Community Understanding Activities* – These include developing community profiles. Profiles help to better understand communities in the watershed before Discovery begins. A community profile may include information such as where people live and work, their incomes, their hazard risks, frequency, Community Disaster Resiliency Zones [CDRZ]) and intensity of the hazards that affect the community, and goals and strategies from their mitigation plan.

- *Development of an Engagement Plan* – This plan's goal is to reach key community stakeholders such as local officials and community partners. It then helps to build relationships with key community stakeholders to improve the reach of messages about risk. It also builds on the local will and ability to take mitigation actions.

- *Introductory and Pre-Call Screenings* – These activities include holding a pre-Discovery interview with each key influencer. These give a chance to confirm their knowledge of FEMA's involvement with the community. It also helps to build thorough knowledge of what matters to the influencer.

2.4.2. DATA AND INFORMATION COLLECTION

Scope: At the start of Discovery, the CTP will start to collect data and information from Federal, State, Local, Tribal, and Territorial sources. To appropriately analyze and map the flood hazards in levee-impacted areas, the CTP will coordinate with communities during the Discovery Phase of a Flood Risk project, and throughout the project lifecycle as necessary, to understand the location and impacts of levee systems. The CTP should complete the research and identification of levees during Discovery or as early as possible during project initiation. Early identification of levees on the FIRM panels or LOMR study area will allow FEMA to address mapping needs. In addition, the CTP should determine if there are any levee alignments that need revision, or not previously identified within the project area. This identification should include coordination with USACE, the community, levee owners and appropriate stakeholders to collect information and clarify operation and maintenance responsibilities for the levee system. Levees identified should meet the definition of a levee as noted in Chapter 2 of the FEMA Levee Guidance. The CTP should reference the mapping options in Figure 1 from Section 1.2 of this Levee Guidance document to help determine the path forward. In addition to the more technical data, the project team will collect information on areas of vulnerability that need to be mitigated through future actions as well as details on completed mitigation projects.

2.4.3. DATA INFORMATION ANALYSIS

Scope: Before the Discovery meeting, provide communities with Discovery-related data that use appropriate background research. Present these data at the Discovery meeting to support discussions.

When you select the Data Information Analysis deliverable in Part 1.2.1 in Table 9. Task 4 – Discovery, a Discovery report and relevant data must be provided to communities after the Discovery meeting.

2.4.4. DISCOVERY MEETING

Scope: A Discovery Meeting with project stakeholders. All communities and other stakeholders, as identified by the project management team, may join the Discovery meeting. It may be virtual, hybrid, in-person or via teleconference. Analyze the data collected before the meeting. Use that analysis during the meeting to support discussions about appropriate topics. These include Risk MAP, the watershed vision, local flood-related concerns and potential mitigation strategies, regulatory map study needs, levees, risk assessment, and local communication capabilities and responsibilities. Document newly identified or improved mitigation strategies at the meeting. Document any support communities need to advance their mitigation actions.

Activities will include:

- Build relationships with key community stakeholders. This will help to grow the reach of messages about risk. It also helps to improve the local will and ability to take mitigation actions.
- Use personalized emails and calls to drive attendance.

- Set a baseline to help form a resilience activity roadmap. Include real risk and pain points for hazards.
- Track engagement efforts and responses to reflect ongoing work.
- Hold meeting and breakout sessions.
- Create an outreach toolkit. Use materials such as a fact sheet, talking points, social media templates, FAQs, brochures, and media engagement.
- Make a community-specific infographic or dashboard. This will help local officials visualize complex ideas.
- Hold a post-meeting review session with the study team. Provide a future recommendations report (one to two pages).
- Provide mitigation assistance to the community. This will increase their ability to act.

When you select the Discovery Meeting deliverable in Table 9. Task 4 – Discovery, perform and document the following activities:

- Develop an engagement plan to reach the key community stakeholders during Discovery. These include local officials and community partners.
- Create a Discovery report (20-30 pages).
- Collect Project Charters (if used).
- Create a post-meeting outreach plan. Include a public awareness toolkit. Work with community officials to find available resources to promote flood risk education. Document all contacts, engagements, toolkits, and baseline data.

2.4.5. POST-DISCOVERY

Scope: After the Discovery Meeting, the CTP will provide meeting notes, outreach materials, and updated contacts to the attendees and stakeholders. The Mapping Partner will collect Project Charters (if used). The Mapping Partner will update the Discovery Report to reflect the meeting discussions. The Mapping Partner must include recommendations for an FRP. A final Discovery Report and appropriate data will be provided to stakeholders. Provide FEMA with a list of all actions discussed with the communities. This must occur within two weeks after meetings are held.

When the Post-Discovery deliverable is selected in Table 9. Task 4 – Discovery, the following activities will be performed (provide documentation on following activities and/or reports listed):

- Update the CNMS Regional File Geodatabase to reflect information gathered during Discovery for needs and/or requests as appropriate:

- Updated, cleaned linework that reflects any new validation that has changed due to an evaluation or a determination of study in Discovery.
- Supporting documentation for new validation.
- An updated requests layer. This should contain all requests made as part of Discovery.
- A self-certified CNMS spatial database using the CNMS QC tool.
- Update the CNMS database to reflect the status of all streams or shorelines within the watershed. This applies even if they are not scoped.

- Update the P4 and MIP per the Geospatial Data Coordination (GDC) Guidance to reflect data collected.
- Upload the final Discovery Report and relevant data to the MIP.
- Explain whether Project Refinement and Project Charters were used as part of Discovery and deliver final signed documents.

2.4.6. SCOPE REFINEMENT

Scope: FEMA and the CTP will work with communities to refine the elements of the project. They will update the Discovery report as needed. FEMA and the CTP may also work with communities to form a Project Charter. This will help to document the FRP and the roles and responsibilities of all parties. If used, Project Charters are sent out to each community affected by a planned FRP. The CTP will track the number of signed charters.

When you select the Scope Refinement deliverable in Table 9. Task 4 – Discovery, perform the following activities:

- Explain whether project refinement and Project Charters were used as part of Discovery. Deliver final, signed documents.

2.4.7. VALIDATION BASIN SUPPORT

Scope: Support data collection and validation basin execution for comprehensive modeling (in support of the Future of Flood Risk Data [FFRD] initiative) and provide FEMA Regions and Headquarters ways to improve the processes.

For this agreement, the CTP will work with the FEMA Region and Headquarters to develop data or evaluate processes related to the Future of Flood Risk Data initiative. This may include working with the USACE FFRD Project Delivery Team (PDT) and FEMA in co-production of data to support validation efforts or evaluating data created from the initiative.

2.5. Base Map Data Capture

Note: Every MAS for a flood data update must include this task. This helps to make sure that the base map included is documented and submitted. Document and submit any used base map data for this task as well.

Scope: Base map preparation activities consist of obtaining and formatting the digital base map (raster or vector). Activities also include reviewing the base map and confirming that FEMA may use and send out base map data sources. This task is equivalent to the Base Map Data Capture task in the MIP. The CTP will prepare and provide the digital base map. To do so, they must:

- Obtain digital files (raster or vector) of the base map. Work with the partner that performed Discovery to make sure this work follows the FEMA GDC Policy and Implementation Guide.
- Secure needed permissions from the base map source to let FEMA use and send out hard copy and digital map products through the digital base map. These products will be free of charge.
- Review and add to the content of the acquired base map to meet FEMA standards.
- For the base map elements that have a required data type, convert the base map data to the format that meets FEMA standards.
- Confirm that the digital data meet the minimum standards and specifications that FEMA requires for FIRM production.

2.6. Independent QA/QC: Base Map Data Capture

Scope: The Independent QA/QC Mapping Partner will perform an impartial review of the base map that the CTP obtained and prepared. This review will make sure it includes data that meet FEMA standards. It will also ensure the map is sufficient to include on the FIRM. Make any needed edits to meet FEMA standards.

Note: FEMA will also perform periodic audits and overall study/project management to ensure study quality. The CTP will address all reasonable comments that result from independent QC of the base map. This includes resubmitting deliverables as needed to pass technical review.

2.7. Existing or New Topographic Data Capture and Terrain Data Capture

Note: Every MAS for a flood data update must include this task. This helps to ensure that the topography used is documented and submitted. In addition, document and submit leveraged topographic data used. For coastal studies, include collection or leveraged bathymetry data plans.

Scope: Topographic/elevation data may be new or existing. "New" refers to aerial survey data that will be purchased, collected, and processed for the study areas in this MAS per the referenced specifications. Existing topographic/elevation data may be leveraged to produce flood studies and related products. However, if new data will not be collected, the FEMA Regional Office should be consulted before using the best available existing topographic data. This helps to make sure those data are suitable for use in a flood hazard study.

The CTP will obtain topographic data for the floodplain areas to be studied. This includes overbank areas. These data will be used for hydrologic analysis, hydraulic analysis, coastal analysis, floodplain boundary delineation and/or the testing of floodplain boundary standard compliance and flood risk products. The CTP will gather availability, currency and accuracy information for existing topographic data that cover the affected communities in this MAS. The CTP will use topographic data for work in this MAS only if they are of higher quality than those of the original study or effective studies. The CTP will follow the FEMA Geospatial Data Coordination Policy and Implementation Guide. The CTP will document any data obtained or to be produced per those policies and guidelines.

Requirements for New Topographic Data Capture (if applicable): The CTP will generate new topographic data for areas defined in Table 14. Summary of Topographic Elevation Data. The CTP will also coordinate with team members who conduct field surveys as part of this MAS. All ground control and checkpoint field surveys must meet the current version of the American Society for Photogrammetry and Remote Sensing (ASPRS) Positional Accuracy Standards. Surveys completed for New Topographic Data Capture require:

- A survey report that details the methodology and results for absolute vertical accuracy testing.
- A signed and sealed FEMA Certificate of Compliance from a certified public land surveyor.
- Survey monument datasheets and photos.
- Ground control coordinates or shapefile and photos.
- Checkpoint coordinates or shapefile and photos.
- A vertical accuracy validation spreadsheet that includes calculations.

The CTP will follow guidelines set forth in the Elevation Guidance to find the accuracy needed for the areas listed in this MAS. All new topographic data collected should meet the requirements outlined in the current version of the United States Geological Survey (USGS) lidar Base Specification and must include:

- All scoped elevation data products.
- Aerial survey flight reports:
    - Mission planning.

- Collection report(s) and flight logs.

- Metadata for all delivered products.
- Processing reports that detail the production and quality assurance of each deliverable product.
- Spatial files. These must include the project area, indices, and areas of low confidence (if applicable).
- A signed and sealed FEMA Certificate of Compliance from a certified photogrammetrist.

The CTP will also address all concerns or questions about the topographic data development and processing raised during the Independent QA/QC review. The CTP should confirm with the FEMA Regional Project Officer the appropriate data model(s) (e.g., mass points and breaklines) for the intended use of the data.

Requirements for Existing Topographic Data Capture (if applicable): The CTP will use topographic data for the areas described in Table 14. Summary of Topographic Elevation Data. The CTP must list the source of the topographic data. They will work with other team members who conduct field surveys as part of this MAS. The CTP should follow the guidelines set forth in the Data Capture – General or Data Capture (Workflow Details) documents, Technical Reference, and the Elevation Guidance documentation. This will let the CTP determine whether the existing dataset is current and accurate enough. The CTP should confirm the use of topographic data with the FEMA Regional Project Officer.

The CTP will also address all concerns or questions about the topographic data development raised during the Independent QA/QC review.

Requirements for Terrain Data Capture (if applicable): For this activity, the CTP will create a best available digital elevation model for the subject flooding sources. To do so, the CTP will use the data collected under the New and/or Existing Topographic Data Capture task and via field surveys. The CTP should confirm with the FEMA Regional Project Officer the appropriate data model(s) (e.g., DEMS).

The CTP will also address all concerns or questions about the topographic data development raised during the Independent QA/QC review.

2.8. Independent QA/QC: Topographic Data Capture

Scope: An independent QA/QC will be performed. This must include an impartial review of the mapping data defined in Table 14. Summary of Topographic Elevation Data. This will help to make sure that the data meets FEMA standards and standard engineering practice. It also ensures they are sufficient to be used in a flood risk study. FEMA may audit or aid in these activities if the FEMA Regional Project Officer deems it necessary.

FEMA will also perform periodic audits and overall study/project management to ensure study quality. The CTP will address all comments that result from independent QC as needed to pass the technical review. This includes the resubmittal of deliverables.

2.9. Survey Data Capture

Note: CTPs should consider including and completing this task in the MIP if the partner believes data will need to be submitted during the project. This is true even if the MAS does not include conducting field surveys. CTPs also must document and submit any field survey data used. Failure to submit these data could slow the workflow of production tasks and delay the schedule. If the CTP obtains field survey data that were not included in the MAS, the CTP must submit a change request to the FEMA Regional Office to include the task and leverage as part of the award. The CTP must also request that this task be added to the study in the MIP.

Scope: The CTP will conduct a detailed field or desktop reconnaissance of the specific study area. Such work will 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. This effort supports any field reconnaissance conducted in the Discovery phase of this project.

The CTP will conduct field surveys. They will obtain channel and floodplain cross sections, set temporary or permanent benchmarks, and obtain the physical dimensions of hydraulic and flood control structures. If appropriate, the CTP will also identify items needed for coastal analyses. These include land cover, vegetation types, housing, dunes, beach nourishment, coastal structures and transects. The CTP will coordinate with other entities involved in the topographic, hydrologic, and hydraulic data development processes. They will address ongoing activities and deliverables.

You may use existing survey data, or as-built data, to produce flood studies and related products. However, if existing data is to be collected, consult the FEMA Regional Office before using the best available existing survey data. This helps to ensure they are acceptable for the intended level of flood hazard study.

Note: For traditional flood hazard data provided by certified licensed professionals, additional quality assurance is not required. However, for additional data types, additional quality assurance certification is required.

2.10. Hydrology

Note: CTPs must complete this task in the MIP if an updated hydrologic analysis is completed. CTPs must document and submit to the MIP any hydrology data used for this task. Failure to submit this task when data should have been submitted is no longer an issue. The MIP

redesign lets you reopen tasks to upload data. However, if the CTP obtains hydrology data that the MAS did not include, the CTP must contact the FEMA Regional Office to submit a change request. The change request will include the task and leverage as part of the award. The CTP will also request that this task be added to the MIP workflow.

Scope: The CTP will perform hydrologic analyses for the flooding source(s) listed in Table 18. Summary of Hydrologic Analyses. Hydrologic analysis activities include determining peak flood discharges. They also include using rainfall-runoff models, regression equations, gage analysis and hydrograph development. These activities support the level of detail needed for the project. The CTP will calculate peak flood discharges and/or flood hydrographs for the 10, 4, 2, 1, "1-plus" and 0.2% annual chance events using the analysis method noted in Table 18. These flood discharges will be the basis for later hydraulic analyses. In addition, the CTP will address all comments that result from the independent QC review as needed to pass the technical review. This includes the resubmittal of deliverables.

The CTP will document automated data processing and modeling algorithms. They will also provide the data to FEMA. This helps to make sure these data meet FEMA standards. Document digital datasets such as elevation, basin, or land use data. Provide them to FEMA for approval before performing the hydrologic analyses. This helps to make sure the datasets meet minimum requirements. If non-commercial (i.e., custom-developed) software is used for the analysis, then the CTP must provide full user documentation, technical algorithm documentation and the software to FEMA for review. This must occur before the CTP performs the hydrologic analyses. Any numerical models used in hydrologic analyses should be listed in the "Hydrologic Numerical Models Meeting the Minimum Requirement of National Flood Insurance Program."

The CTP will compare the calculated discharge. They will use reliable gage data to assess discharge. They will only perform this comparison where two discharge values represent the same flooding source. The results of this comparison will help to determine the discharge to be used for the hydraulic analysis.

2.11. Independent QA/QC: Hydrology

Scope: The Independent QA/QC Mapping Partner will perform an impartial review of the technical, scientific, and other information submitted by the CTP specific to the hydrologic analyses. This will help to make sure the data and modeling meet FEMA standards and standard engineering practices. It will also ensure those data are sufficient to prepare the FIRM. FEMA may audit or aid in these activities if the FEMA Regional Project Officer deems it necessary. This work will at least include the activities below. FEMA will also perform periodic audits and overall study/project management. This will help to ensure study quality. Where state law requires paper documentation for professional certifications, the CTP may submit the paper and a scanned version for the digital record. Please coordinate with the regional and/or state representative to confirm the state reporting requirements.

- Review the submittal for technical and regulatory adequacy, all required information, and supporting data and documentation. The technical review will focus on the following:

- Use of acceptable models.
- Use of appropriate methodology(ies).
- Correctly applied methodology(ies)/model(s). These include QC of input parameters.
- Comparison with gage data and/or regression equations, if appropriate.
- Comparison with discharges for contiguous reaches or flooding sources throughout the watershed.

- Confirm that the data were submitted under the applicable folders on the MIP. Refer to the Data Capture Technical Reference and Guidance: Data Capture documents.
- Maintain records of all contacts, reviews, recommendations, and actions. Make those data readily available to FEMA.
- The reviewing Mapping Partner must record the results of the review in a memorandum or letter, send it to the Mapping Partner that performed the hydrologic analysis, and post it to the MIP through the Independent QA/QC of Hydrologic Analyses task. The review document must present specific comments. It may include any new calculations or model runs that support the review.

2.12. Hydraulics

Note: CTPs must complete this task in the MIP if an updated hydraulic analysis is completed. CTPs must also document and submit to the MIP any hydraulic data used for this task. Failure to submit this task when data should have been submitted is no longer an issue. The MIP redesign lets you reopen tasks to upload data. However, if the CTP obtains hydraulic data that the MAS did not include, the CTP must contact the FEMA Regional Office to discuss the potential need for a change request. This change request would include the task and leverage as part of the award. The CTP would also request that this task be added to the MIP workflow.

Scope: The CTP will perform hydraulic analyses as described in Table 21. Summary of Hydraulic Analyses. Hydraulics analysis activities include establishing and reviewing regulatory floodways and flood elevations for the 10, 4, 2, 1, "1-plus" and 0.2% annual chance events. These are based on flood discharge rates computed under the Hydrology Data Capture task. The hydraulic methods used for this analysis may include base level and/or enhanced level hydraulic modeling. The base level will use an automated hydraulic model and use the best available elevation data to model the 10, 4, 2, 1, "1-plus" and 0.2% annual chance events. It may not include field surveys, floodways or mapped Base Flood Elevations (BFEs). It will include mapped A or AE zones per Table 21. The enhanced level may include field surveys; floodways; and the 10, 4, 2, 1, 1-plus and 0.2% annual chance events using methods described in Table 43. The Mapping Partner, at a minimum, must delineate the floodplain and floodway, if applicable, boundaries of the base flood. The Mapping Partner must also define the floodplain boundaries associated with the 0.2% annual chance flood if it is calculated. If a

new hydrologic and/or hydraulic analysis is performed in an area with a levee, then both "with levee" and "natural valley" analyses must be performed. For accredited levee systems, the "with levee" analysis contains all of the 1% annual-chance discharge riverward of the levee. For more information on the "with levee" and natural valley analyses, refer to Section 4.4.2 of the FEMA Levee Guidance.

Table 43. Hydraulic Analysis Options for Base and Enhanced Level Engineering

Option /Class	Cross Sections (1D) or Mesh Refinement (2D)	Structure Representation	Manning's "n"/Land Cover	Flood Path Detail
A	1D: Cross sections auto-placed; may be unnaturally straight with computerized placement or auto-placed by "intelligent" methods. 2D: Large Nominal Grid sizing: optional refinement regions, sparse breaklines from pre-established spatial datasets.	Levees: a single natural valley run that excludes all levee systems. Enhancement consistent with Option/Class C, D, or E needed to meet regulatory application. 1D: Not included: cross sections auto-placed without consideration of structures. 2D: Model/mesh hydro-enforced/adjusted at structures (via breakline modifications, terrain mods, internal connections, etc.) only where significant water is retained in the channels at crossings.	1D: Single "n" value for each cross section. 2D: Composite form National Land Cover Database (NLCD) or better local data source.	1D: Left, right, and channel reach lengths assumed equal. 2D: Loosely enforce streams or flow paths.
B	1D: Cross sections auto-placed and hand adjusted or auto-placed by "intelligent" methods. 2D: Large Nominal Grid sizing; sparse refinement regions, breaklines added at significant ridgelines, transportation and hydraulic features, and important infrastructure	Levees: a single natural valley run that excludes all levee systems. Enhancement consistent with Option/Class C, D, or E needed to meet regulatory application. 1D: Not included, but cross sections placed to reflect significant constrictions and for future incorporation of structure modeling. 2D: Model/mesh hydro-enforced/adjusted at structures where significant water is retained throughout the mesh and to prevent unrealistic backwater in the channel.	1D: Overbanks from NLCD or better local source; channel value estimated separately 2D: Composite from NLCD or better local data source	1D: Reach lengths computed by offsetting stream centerline 2D: Enforce streams to at least 1 sq mi (mapped streams) with additional mesh resolution inside flowpath

Option /Class	Cross Sections (1D) or Mesh Refinement (2D)	Structure Representation	Manning's "n"/Land Cover	Flood Path Detail
C	1D: Each section is reviewed by engineers. 2D: Medium Nominal Grid sizing with additional refinement regions in developed areas, breaklines added at significant ridgelines and features; results reviewed and mesh refined where necessary in locations where ponding or flow is being improperly represented.	Levees: a single with-levee run that includes all levee systems, and individual natural valley runs for each hydraulically significant levee system 1D: Hydraulically significant structures included or approximated; estimated using national, state, or other data sources. 2D: Model/mesh adjusted at structures where water ponds and flow is restricted in the channel; where data is available, some opening sizes may be estimated and reservoirs and/or long culverts handled with rating curves.	1D: Overbanks from NLCD or better data; channel value estimated separately 2D: NLCD (or better local data source) with optional manual refinements or image processing, especially in developed areas	1D: Reach lengths adjusted based on the draft floodplain. 2D: Enforce streams to at least 1 square mile, with additional stream enforcement in developed/urban areas; mesh resolution refined inside flowpath.
D	1D: Each section is reviewed by engineers, with additional cross section density considered in developed areas. 2D: Medium to small nominal grid sizing with additional refinement regions in study areas and in developed areas, breaklines added throughout mesh and with more detail in study area.	Levees: a single with-levee run that includes all levee systems, and individual natural valley runs for each hydraulically significant levee system 1D: Included; structure data from as-builts, design plans, "measured" in the field, or other community datasets with opening information. 2D: Model/mesh hydro-enforced/adjusted for small structures; rating curves and/or internal connections for larger structures; consider approximations for underground storm systems.	1D: Overbanks from NLCD or better data; channel value estimated separately and calibrated where possible. 2D: NLCD (or better local data source), refined manually or with image processing.	1D: Reach lengths adjusted based on the draft floodplain. 2D: Enforce streams to at least 1 square mile, with additional stream enforcement in developed/urban areas; mesh resolution refined inside flowpath.

Option /Class	Cross Sections (1D) or Mesh Refinement (2D)	Structure Representation	Manning's "n"/Land Cover	Flood Path Detail
E	1D: Each section is reviewed by engineers; channel bathymetry included in sections. 2D: Medium to small nominal grid sizing with additional refinement regions in study areas and in developed areas; breaklines added throughout mesh and with detail in study area; additional mesh refinement near buildings and structures.	Levees: a single with-levee run that includes all levee systems, and individual natural valley runs for each hydraulically significant levee system 1D: Included; structure data from field survey, as-builts, design plans, "measured" in the field, or other community datasets; stormwater system information incorporated where appropriate. 2D: Openings modeling as 2D-storage area internal connections with culverts and/or bridges; underground storm systems can be approximated when small, but need refinement when significant.	1D: Overbanks from NLCD or better data and/or field data; channel value estimated separately from field data and calibrated where possible. 2D: NLCD (or better local data source), refined manually or with image processing.	1D: Reach lengths adjusted based on draft floodplain 2D: Enforce streams to at least 1 square mile, with additional stream enforcement in developed/urban areas; mesh resolution refined inside flowpath.

The CTP will use the cross section and field data or leveraged existing survey and as-builts collected during survey data capture to perform the hydraulic analyses. The CTP will also use them as the topographic data collected during the Topographic Data Capture when appropriate. The hydraulic analyses will help to establish flood water surface elevations, floodplain extents, and regulatory floodways for the listed study area or flooding sources.

The CTP will address all concerns or questions about the hydraulic analyses raised during the independent QA/QC review as needed to pass the technical review. This includes the resubmittal of deliverables.

The CTP will document automated data processing and modeling algorithms for all GIS-based studies. They will also provide the data to FEMA for review. This helps to make sure these data meet the standards outlined above. If analysis uses non-commercial (i.e., custom-developed) software, the CTP will provide full user documentation, technical algorithm documentation and software to FEMA for review. This must occur before the CTP performs the hydraulic analyses.

All hydraulically significant levees should have both "with-levee" and natural valley model runs to complete the analysis regardless of accreditation status. All levees that are intended to show reduced flood hazard on the FIRM should have newly accredited or continuing accreditation documentation since the last FIRM. Some levee-related flooding sources are mapped as providing flood hazard reduction on effective FIRMs but have a levee that will not continue to meet the

requirements of 44 CFR 65.10 to accredit the levee on the new FIRMs. Such sources will require a revised hydraulic analysis if they do not currently have a natural valley analysis. Perform all levee analysis per FEMA standards and guidance, in accordance with the mapping path forward defined in Table 37.

When you select the BLE deliverable in Table 20. Task 12 – Hydraulics Data Capture, the BLE will be produced through high-resolution ground elevation data and modeling technology advancements. These create engineering models and flood hazard data. Such analyses are produced at a large scale, like a watershed. They do not target individual stream reaches. The CTP will make sure that, for all BLE studies, the Hydraulics Data Capture and Draft FIRM Database tasks are created in the MIP. Use the Hydraulics Data Capture task to deliver all BLE models, engineering reports, and supporting data.

2.13. Independent QA/QC: Hydraulics

Scope: The Independent QA/QC Mapping Partner will perform an impartial review of the technical, scientific, and other information submitted by the CTP under Hydraulic Analysis to ensure that the data and modeling meet FEMA standards, guidance, and standard engineering practice. It also makes sure they are sufficient to revise the FIRM. FEMA may audit or aid in these activities if the FEMA Regional Project Officer deems it necessary. This work will include at least the activities below.

FEMA will also perform periodic audits and overall study/project management to ensure study quality. The CTP will address all comments that result from independent QC as needed to pass the technical review. This includes the resubmittal of deliverables.

- Review the submittal for technical and regulatory adequacy, all required information, and supporting data and documentation. The technical review will focus on the following:
    - Use of acceptable model(s).
    - Use of appropriate methodology(ies).
    - Starting water surface elevations.
    - Cross section geometry (for 1D models) or mesh orientation and resolution (for 2D models).
    - Manning's "n" values and expansion/contraction coefficients.
    - Bridge and culvert modeling.
    - Ineffective and non-conveyance areas.
    - Flood discharges.
    - Regulatory floodway computation methods.

- Tie-in to upstream and downstream non-revised Flood Profiles and floodways.
- Agreement among the model, spatial data, work maps, Flood Profiles and Floodway Data Tables, where applicable.
- Calibration of model(s) where high-water marks are available.
- Floodplain and floodway boundaries for the 1% and 0.2% annual chance events.

- Confirm that the data were submitted under the applicable GEOGRAPHIC FOOTPRINT folders in the MIP.
- Maintain records of all contacts, reviews, recommendations, and actions. Make the data readily available to FEMA.
- Maintain an archive of all data submitted for hydraulic modeling review. (All supporting data must be retained for three years from the date a funding recipient submits its final expenditure report to FEMA. Once the study is effective, submit all relevant data to the FEMA library.)
- The reviewing Mapping Partner must document the results of the review in a memorandum or letter. Send it to the Mapping Partner that performed the hydraulic analysis and post it to the MIP through the Independent QA/QC of Hydraulic Analyses task. The review document must present specific comments. It may include any new calculations or model runs that support the review.

2.14. Coastal Data Capture

Scope: The CTP will perform a coastal analysis for flooding sources identified in Table 24. Summary of Coastal Data. The coastal analysis will include the following parts as needed:

- Terrain and Bathymetric Data Processing.
- Combined Topo-Bathy Seamless DEM.
- Shoreline/baseline establishment.
- Field Reconnaissance.
- Water Level Station Analysis.
- Wave Gage Analysis.
- Historical Storm Statistical Analysis (from station/gage data).
- Storm Selection.
- Develop 2D Model Grid.

- Model Tidal Calibration and Validation.
- Wind and Pressure Field Development.
- Storm Validation (Storm Surge, Wave Height, and Wave Period).
- Storm Production Runs.
- Annual Exceedance Probability Analysis.
- Transect Layout.
- Primary Frontal Dune Assessment and Mapping.
- Coastal Structure Analysis.
- Coastal Levee Analysis.
- Storm Induced Erosion Analysis.
- Overland Wave Height Analysis (1 and 0.2% AEPs).
- Wave Runup and Overtopping Analysis (1% and 2% AEPs).
- 0.2% Coastal Wave Envelope FIS Profiles.
- Combined Probability Analysis for Riverine Areas in coastal floodplains.
- Coastal hazard mapping and workmap development.
- Limit of Moderate Wave Action (LiMWA) mapping analysis 1%
- Draft Coastal FIS components (i.e., Transect location Map, SWEL contour Map, Coastal Analysis Tables)
- White Papers or Memos on special technical considerations.

2.15. Independent QA/QC: Coastal Data Capture

Scope: The CTP will perform QA/QC of all coastal data and provide documentation of reviews and resolution of comments.

2.16. Floodplain Mapping Data Capture

Scope: CTPs must complete this MIP task to show the overlap in floodplains and related data layers (specified in the FIRM Database Technical Reference) for the project area. This applies to data layers that are based on any leveraged data; redelineation or digital conversion of effective study data; and

new or updated hydraulic or coastal analyses as delivered under the Hydraulics Data Capture or Coastal Data Capture tasks. The integrity of any new or updated hydraulic or coastal analyses that combine with one or more sources is key. Failure to submit this task when data should have been submitted is no longer an issue. The MIP redesign allows for tasks to upload data. If the CTP obtains floodplain mapping data that the MAS did not include, the CTP will contact the FEMA Regional Office to discuss the need to submit a change request. This request would include the task and leverage as part of the award. The CTP would also request that this task be added to the MIP workflow.

Responsible Mapping Partner: CTP/Mapping Partner

The CTP will perform floodplain mapping as described in Table 27. Summary of Floodplain Mapping. Floodplain mapping activities include mapping and redelineation of the 1 and 0.2% annual chance event floodplains and regulatory floodways. This is based on updated topographic data. Floodplain mapping may also include the digital conversion of non-revised floodplain areas. Coastal flood sources will include mapping coastal static BFE zones and areas of combined coastal and riverine flooding. They also include mapping the LiMWA.

The redelineation of floodplains uses updated topographic data to remap the floodplain boundary. This is based on effective water surface elevations. Per FEMA Standard ID #104, only redelineate when the terrain source data are better than effective data. The stream reach must also be classified as VALID in the CNMS database. Please review SID 104 in the latest FEMA Policy for the current language of the standard. Before redelineating effective floodplain boundaries, review the current CNMS database. Assess how appropriate this approach is. The CTP will use the effective FIS profile, floodway data table, FIRM/Flood Hazard Boundary Map (FHBM), and, as needed, the effective hydraulic model to delineate the floodplain boundary on updated topography.

Per FEMA Standard ID #137, you must revise the 1% annual chance Special Flood Hazard Area (SFHA) boundary and the 0.2% annual chance floodplain boundary to redelineate coastal flood hazard areas. You also must delineate primary frontal dunes. Please review SID 137 listed in the last FEMA Policy for the most current language of the standard.

Digital conversion of non-revised floodplain areas is adding the current effective floodplain boundary into the digital FIRM database. A CTP must georeference on effective paper maps for this activity. They also must digitize the effective floodplain and floodway boundaries. Digital conversions do not revise the effective SFHA. The CTP will use the results of all effective LOMCs for all affected communities on the FIRM. They must also provide to the appropriate PTS the required submittals to work into the National Flood Hazard Layer (NFHL). The CTP will address all concerns or questions about floodplain mapping raised during the independent QA/QC review.

Per FEMA SID 134, if the redelineated topographic data show that the effective hydraulic analyses are no longer valid, further actions must be planned with the FEMA Regional Project Officer. The CNMS database must also be updated. Please refer to SID 134 listed in the last FEMA Policy for the most current language of the standard. The CTP will capture flood hazard engineering and/or mapping data quality issues found during this activity in the CNMS database for the area(s) of

interest. Enter these issues as “Requests” or “Needs” in the CNMS requests feature dataset. Base this on the nature of the deficiency found. Part 1.5. Standards provides detailed information on carrying out this task.

2.17. Independent QA/QC: Floodplain Mapping Data Capture

Scope: The Independent QA/QC Mapping Partner will perform an impartial review of the floodplain mapping submitted by the CTP under Floodplain Mapping to ensure that the results of the analyses performed are accurately represented and that the redelineation of existing data on new updated topography is appropriate. It also ensures the new FIRM panels accurately represent the information shown on the effective FIRMs and Flood Boundary and Floodway Maps (FBFMs) for the unrevised areas that are mapped. FEMA may audit or aid in these activities if the FEMA Regional Project Officer deems it necessary. This work will at least include the activities below.

FEMA will also perform periodic audits and overall study/project management to ensure study quality. The CTP will address all comments that result from independent QC as needed to pass the technical review. This includes the resubmittal of deliverables.

- If developing Coastal Mapping:
    - Review the Summary of Stillwater Elevations and Transect Data tables. They should agree with the coastal modeling results.
    - Review the coastal transects for the proper location and orientation on the work maps. They should agree with the Transect Descriptions table. Make sure that the transects on the work maps extend to the inland limit of the coastal modeling results used for mapping.
    - Review the Primary Frontal Dunes (PFD) and Zone VE/Zone AE boundary delineations. The PFD delineation should coincide with or be seaward of the Zone VE/Zone AE boundary.
    - Review the LiMWA line to ensure proper placement and that the line is oriented in the right direction. When symbolized, the line should point to the appropriate area where wave heights are greater than 1.5 feet.
- Review the cross sections for proper location and orientation on the work map. They should agree with the Floodway Data table and flood profiles.
- Review the BFEs and coastal flood zones (both Zones VE and Zones AE) shown on the work map for proper location. They should agree with the results of the coastal modeling.
- Review the regulatory floodway widths. They should agree with the widths shown in the Floodway Data table.

- For non-revised floodplain areas, the 1 and 0.2% annual chance floodplain boundaries should agree with the floodplain boundaries shown on the FIRM, the contour lines, other topographic information, and planimetric information shown on the FIRM base.
- Road and floodplain relationships are maintained for all unrevised areas.
- Review the flood insurance risk zones as shown on the work maps to ensure the data are labeled properly.
- Review the FIRM mapping files to make sure the data were prepared per FEMA standards.
- Review the metadata files to make sure the data include all required information shown in the National Flood Insurance Program (NFIP) Metadata Profiles Specification. You can find this at Flood Risk Templates and Other Resources.
- Review and confirm that effective LOMCs for all affected communities on the FIRM were accounted for.
- Confirm that the data were submitted under the applicable GEOGRAPHIC FOOTPRINT folders.

2.18. Flood Risk Products Data Capture

Scope: Flood hazard risk assessment data and analyses inform decisions to reduce the impacts of the hazard on people and property. As part of the Risk MAP program, Flood Risk Products will be developed for study areas [9] as listed in SID 417. SID 417 contains a list of Flood Risk Products. It states whether they are required.

2.19. Independent QA/QC of Flood Risk Products

Scope: The CTP, PTS, Other Federal Agencies (OFAs) or FEMA's contractor may perform independent QC review activities at the discretion of FEMA. If the CTP, PTS or OFA will engage its own staff, contractors, and/or partners to perform the QC review, note this during project planning and Discovery. The CTP, PTS, OFA, or FEMA's contractor must address all comments that result from independent QC as needed to pass the technical review. This includes the resubmittal of deliverables. The independent QC is tied to a checklist available in the Guidelines and Standards for Flood Risk Analysis and Mapping.

[9] Refer to Standard Identification 417.

2.20. Draft FIRM Database Capture

Note: Every MAS for a FIRM update must include this task. This helps ensure that the database used is documented and submitted for National Quality Review 1 per FEMA standards. Document and submit any FIRM data used for this task.

Scope: The CTP will prepare the database per FEMA standards, technical references, and guidance for upload to the MIP. The CTP will confirm and/or obtain any revised or updated guidance from the region. The CTP will work with the RSC to complete and submit the Key Decision Point (KDP) 2 form before QR 1. The CTP will work with appropriate Mapping Partners to resolve any problems found when developing the FIRM database.

When the BLE deliverable is selected in Table 33. Task 21 – Produce Preliminary Map Products, all BLE studies and the Hydraulics Data Capture and Draft FIRM Database tasks are created in the MIP. The Draft FIRM Database task is necessary so that BLE results may be viewed in FEMA's draft data viewer.

2.21. Produce Preliminary Map Products

Note: CTPs may include and complete this task in the MIP. Failure to submit this task when data should have been submitted is no longer an issue. The MIP redesign will let you reopen tasks to submit data. New projects for FY2020 or newer must use the Automated Map Production (AMP) tool for FIRM production. You can find the "AMP Best Practices" guidance at AMP Best Practices.

Scope: The AMP tool will apply the final FEMA FIRM graphic and database specifications to the FIRM files produced under Floodplain Mapping for the panels identified in Table 32. FIRM Panel Summary. This work will include adding all required annotation, line pattern, area shading, and map collar information (e.g., map borders, title blocks, legends, and notes to user). The CTP will work with those entities responsible for Floodplain Mapping and/or Redelineation, as needed. They will resolve any problems found when developing the FIRM database and graphics. The CTP will follow all database specifications. They will make sure the product meets expectations. You can find the Best Practice Guidance for AMP at AMP Best Practices. The CTP will prepare a Preliminary SOMA for each affected community if appropriate. The CNMS Regional File Geodatabase reflects changes to the existing inventory applicable to scoped studies, study extents, and attributes.

2.22. Independent QA/QC: Produce Preliminary Map Products

Scope: The Independent QA/QC Mapping Partner will perform an impartial review of the FIRM spatial database. This occurs when the floodplain mapping and redelineation activities are done. This review will determine whether it meets current FEMA database specifications. The CTP will work with other entities as needed to resolve any problems found in this review. FEMA may audit or aid in these activities if the FEMA Regional Project Officer deems it necessary.

FEMA will also perform periodic audits and overall study/project management. This will help to ensure study quality. The CTP will address all comments that result from independent QC as needed to pass the technical review. This includes the resubmittal of deliverables.

This work will make sure that the requirements below are met.

- Confirm that Preliminary FIRM database is in a GIS file and database format per FEMA standards. Make sure it meets those standards for content and attribution.
- Confirm that FIRM database files are in one of the database formats per FEMA standards. Make sure they meet those standards for content and attribution.
- Confirm risk assessment products meet FEMA standards if applicable.
- Review and affirm that Preliminary SOMAs were accurately created for applicable communities.
- Perform any needed updates to the CNMS database for the project area of interest.
- Confirm updated, cleaned, CNMS linework reflect status updates due to scope changes that might have occurred during production. Update these to "Being Studied" where needed.
- Confirm the presence of any supporting documentation for new validation status in CNMS.
- Confirm that an updated requests layer is present. Confirm it contains requests made during production or discovered as part of the study process.

2.23. Distribute Preliminary Map Products

Scope: The Distribute Preliminary Map Products [10] task consists of the final preparation, review, and distribution of the preliminary copies of the FIRM and FIS report, and the preliminary SOMA and Risk Assessment products to community officials and the general public for review and comment. The CTP will prepare and submit the KDP3 required documentation to be reviewed and approved at the FEMA Regional level. Preliminary distribution cannot begin until this process is approved. FEMA may audit or aid in these activities if the FEMA Regional Project Officer deems it necessary. The activities are detailed below.

- *Preliminary Transmittal Letter Preparation* – The CTP will prepare letters. They will also transmit the Preliminary copies of the FIRM and FIS report and related enclosures to all affected communities, all other project team members, the State NFIP Coordinator, the FEMA Regional Office, and others as FEMA directs. The CTP may prepare this letter by using the national or

[10] Refer to MIP task names as needed. Create validation tasks in MIP. FEMA's designee will be assigned this task and/or as part of the general guidance to projects. The CTP will not be assigned this task. Tasks CTPs must be aware of include Produce, Distribute, Independent QA/QC. The others are PTS provider tasks.

regional template with the FEMA letterhead/logo and FEMA signature only. When pre-approved by the FEMA Regional Office, the CTP may also use the FEMA and CTP joint letterhead for signature by FEMA and the CTP.

- *Distribution of Preliminary Package* – The CTP will send out the Preliminary copies of the FIRM and FIS report, Preliminary SOMA (as applicable), and risk assessment products (as applicable). These will go to all affected communities, all other project team members, the State NFIP Coordinator, the FEMA Regional Office, and others as FEMA directs.

2.24. Post-Preliminary Map Production

Scope: The Post-Preliminary activity consists of completing the statutory, regulatory, and administrative activities needed to finalize the FIRM and FIS report. This occurs after the preliminary copies of the FIRM and FIS report have been issued to community officials and the public for review and comment. FEMA may audit or aid in these activities as needed. The activities to be performed are summarized below. In addition, other stakeholder engagement tasks, the final CCO Meeting, and the public meeting are held at this time. This is described in the Risk MAP Meetings section of the Perform Community Engagement and Project Outreach task.

- *Initiation of Statutory 90-Day Appeal Period* – When required, upon completion of a 30-day community comment period and/or final coordination meeting with the affected communities, the activities below are completed in per the current FEMA standards and appropriate guidance:

    - In accordance with Program Standard 600, an administrative appeal period must be offered for any FIRM updates including letters of map revision where Flood Hazard Data updates are made. Flood Hazard Data changes include: new BFEs or base flood depths are proposed or currently effective BFEs or base flood depths have been modified; new SFHAs are proposed or the boundaries of currently effective SFHAs have been modified; new zone designations are proposed or currently effective SFHA zone designations have been modified; or new regulatory floodways are proposed or the boundaries of currently effective floodways that have been modified.

    - The CTP will prepare and submit the KDP4 required documentation for review and approval at the FEMA Regional level. FHD notice publication cannot start until this process is approved.

    - The CTP will meet with the FEMA Regional Office of External Affairs, other FEMA staff, and community officials. They will discuss the mapping project and at least provide a local Public Service Announcement (PSA) to local radio and television outlets. Its goal will be to teach property owners more about appeals processes. This activity should fulfill Program Standard 622.

  - The CTP will prepare and submit the FEDD file to FEMA or its designee for interim review #1. The FEDD file check must pass before the proposed flood hazard notice is submitted for publication.

  - The CTP will prepare and deliver to FEMA or its designee the appropriate flood hazard determination notice(s) information via the MIP. This information will be published in the Federal Register. Follow FEMA standards and guidance. FEMA or its designee will perform QA/QC reviews of the flood hazard determination notice information submitted through the MIP, and will create and route the Federal Register notice once QA/QC of the submitted information has been completed.

- FEMA or its designee will perform QA/QC reviews of the Federal Register notice information submitted through the MIP.

- The CTP will prepare news release and community notification letters, ensuring the information is accurate and meets FEMA format requirements. FEMA or its designee will perform QA/QC reviews of the news release and notification letters. Following the publication of the proposed notice in the Federal Register, the CTP will send the notification letters to the community Chief Executive Officers (CEOs) and floodplain administrators. The CTP will verify confirmation of receipt to meet FEMA standards and guidance. These letters should use the Appeal Start template.

- The CTP will make sure that news release notifications of Proposed FHD changes are published in prominent newspapers per 44 CFR Part 67.4. The CTP will produce a notarized affidavit of publication. Other outreach may be done through the community's official social media outreach (e.g., Facebook, Twitter) with local newspaper circulation.

- *Resolution of Appeals and Comments* [11] – The CTP will review and provide relevant information for FEMA to resolve appeals and comments received during the 90-day appeal period per FEMA standards, and in accordance with 44 CFR Part 67.6. For each appeal and comment, conduct the activities below as appropriate:

  - Prepare and mail (or email) an acknowledgment letter on FEMA letterhead with the FEMA signature. Do so after FEMA concurrence.

  - Perform a technical review of submitted information.

  - Prepare interim communication letter(s) to ask for more supporting data as needed. Any data requested and accepted outside the 90-day appeal period will be subject to the running of another appeal period. Only data submitted, requested, and received during the actual 90-

[11] PPP is broken out into "Due Process," "Final Map Production and Distribution," and "Outreach." This would mean that the tables with a single PPP row need to be further broken out with multiple costs and schedules.

day regulatory appeals window can be considered for resolution without a following appeal period.

- Perform revised analyses as needed and when FEMA directs.
- Prepare a draft resolution letter for appeals and comments on FEMA letterhead for FEMA signature. Do the same as needed for revised FIRM and FIS report materials for FEMA review.
- Mail resolution letter(s) upon FEMA concurrence.
- Update CNMS as appropriate when resolving appeals/comments.
- Complete self-certification of compliance with FEMA's Floodplain Boundary Standards within 30 days of the issuance of a study's Letter of Final Determination (LFD). Do so only if the floodplain boundaries changed during the Post-Preliminary Processing/appeals resolution process.
- Update the Risk Assessment Suite as needed (and as FEMA directs) for appeal resolutions.

- The CTP will prepare all relevant correspondence using FEMA letterhead. The CTP will mail it upon authorization by FEMA. When FEMA approves, appeal and comment correspondence may be on joint FEMA-CTP letterhead and co-signed by FEMA and the CTP.

Note: Collaboration and coordination with appellants/communities is the statutory responsibility of FEMA. It cannot be entirely delegated. As such, all appeal-related correspondence must be on FEMA letterhead (or on joint FEMA-CTP letterhead when FEMA approves). It must direct official requests and data submissions to FEMA. Appeal-related correspondence may not be distributed on CTP-only letterhead or on CTP contractor letterhead.

- *Preparation of Special Correspondence* – The CTP will, at the request of FEMA, respond to comments not received within the 90-day appeal period and before the maps are effective (referred to as "special correspondence"). This includes drafting responses for FEMA review and finalizing responses for signature. The CTP will mail the final correspondence (and any enclosures) and send out appropriate copies upon authorization from FEMA. The CTP will prepare all relevant correspondence using FEMA letterhead and mail it upon authorization by FEMA. When FEMA approves, correspondence may be on joint FEMA-CTP letterhead and co-signed by FEMA and the CTP.

- *Revision and Finalization of FIRM and FIS Report* – If needed, the CTP will work with FEMA to determine the appropriate level of effort to revise the FIRM and FIS report. The CTP will then send out revised Preliminary copies of the FIRM and FIS report. These go to the CEO and floodplain administrator of each affected community, all other project team members, the State NFIP Coordinator, the FEMA Regional Office, and others as FEMA directs. The CTP will finalize the

FIRM and FIS with effective Letters of Map Revision per FEMA standards and guidance. The CTP will then upload final products to the MIP for automated and visual National QRs (QR5 and QR7) per FEMA standards. All work must pass appropriate QRs before issuance of the LFD.

- *Processing of LFD* – At the end of the statutory 90-day appeal period, or once all comments/appeals have been resolved (whichever comes first), the CTP will prepare and submit the FEDD Files for Interim Review #2. Once they pass that review, the CTP will prepare and submit the KDP5 required documentation. This work will be reviewed and approved at both the FEMA Regional and FEMA Headquarters levels. QRs 5, 6, 7, and processing of the LFD cannot start until this process is approved at all levels. The CTP should follow the regional submittal guidelines on all KDP5 packages. Each region has its own processes set up to review this documentation. The CTP will work with FEMA to set the effective date for the FIRM and FIS report. The CTP will prepare LFDs for affected communities. The CTP will also submit the final mapping products and LFD package for Quality Reviews 5, 6, and 7 per FEMA guidance and standards. The CTP will do so in coordination with the FEMA Regional Office and its designated contractor. FEMA or its designated contractor will mail the final signed LFDs and enclosures with final SOMAs. The agency will also send out appropriate copies of the signed LFDs and final SOMAs. FEMA's Customer and Data Services (CDS) contractor will address all automated and visual national QRs (QR 5 and QR 7) comments. The CTP will obtain a pass on the QR of the LFD package (QR 6) before sending out the LFD letters.

- *Final SOMA Preparation* – The CTP will prepare final SOMAs for the affected communities with aid from FEMA or its designee as appropriate. The products must pass QR 6 before the LFD letters are issued.

- *Final FHD Notice* – Typically, the final FHD notice to be published in the Federal Register is generated from the proposed notice. The CTP will prepare an appropriate final notice and deliver it to FEMA or its designee to review and publish. The product must pass QR 6 before the LFD letters are issued.

- *Processing of Final FIRM and FIS Report for Printing* – The CTP will prepare final reproduction materials for the FIRM (developed from the FEMA AMP tool) and FIS report. They will then provide these materials to FEMA or its designee per FEMA standards and guidance for printing by the Map Service Center (MSC). Please refer to the Data Capture Technical Reference document. The CTP will also prepare the appropriate paperwork to accompany the FIRM and FIS report and transmittal letters to the community CEOs. The CTP will submit a DVT-compliant FIRM database. It will be used with FEMA's AMP tool to produce FIRM panels. FEMA's CDS contractor will address any QR 7 and QR 8 comments per FEMA standards and guidance. The products must pass QR 7 before the LFD letters are issued.

- *Revalidation Letter Processing* – The CTP will prepare and send out letters for FEMA signature to the community CEOs and floodplain administrators. These letters will notify the affected communities about LOMCs for which determinations will remain in effect after the FIRM and FIS report become effective. The CTP will update the MIP SOMA tool as needed to prepare and

submit the Revalidation Letters to FEMA or its designee to review and approve. The Revalidation Letters must be submitted for review four to five weeks before the effective date. FEMA or its designee will perform QA/QC reviews of the Revalidation Letters. The CTP will mail Revalidation Letters to communities one week before the effective date after review and FEMA approval. Immediately after distribution of the revalidation letters, the CTP will send copies of the official dated letters to FEMA or its designee for submittal to the LOMC subscription service.

- *Archiving Data* – The CTP will make sure that technical and administrative support data are packaged in the FEMA-required format. The CTP will also make sure they are stored properly in the library archives until they are transmitted to the FEMA Engineering Study Data Package Facility. The CTP will maintain copies of all data for at least three years from the submission of the Final Report for award management.

- *MIP* – The CTP will complete all needed Post-Preliminary Processing (PPP) MIP tasks and purchases per FEMA standards and requirements.

Authorized Representative Signatures

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

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{Insert name of CTP Project Manager} Date
Project Manager
{Insert CTP name}

_____

{Insert name of FEMA Regional Project Officer} Date
FEMA Regional Project Officer
Federal Emergency Management Agency, Region {Region #}

_____

{Insert name of state authorized representative} Date
{Insert title of state authorized representative}

List of Tables

Acronyms

AMP	Automated Map Production
ASPRS	American Society for Photogrammetry and Remote Sensing
BFE	Base Flood Elevation
BLE	Base Level Engineering
CAP	Corrective Action Plan
CCO	Consultation Coordination Officer
CDRZ	Community Disaster Resiliency Zones
CDS	Customer and Data Services
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
CNMS	Coordinated Needs Management Strategy
COMS	Community Outreach and Mitigation Strategies
CPI	Cost Performance Index
CSLF	Changes Since Last FIRM
CTP	Cooperating Technical Partner
DFIRM	Digital Flood Insurance Rate Map
DVT	Database Validation Tool
EAP	Expanded Appeals Process
FAQs	Frequently Asked Questions
FAR	Federal Acquisition Regulation

FBFM	Flood Boundary and Floodway Map
FBS	Floodplain Boundary Standards
FDAG	Flood Depth and Analysis Grid
FEDD	Flood Elevation Determination Docket
FEMA	Federal Emergency Management Agency
FFRD	Future of Flood Risk Data
FHBM	Flood Hazard Boundary Map
FHD	Flood Hazard Determination
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FPA	Floodplain Administrator
FRA	Flood Risk Assessment
FRD	Flood Risk Database
FRM	Flood Risk Map
FRP	Flood Risk Project
FRR	Flood Risk Report
FWDT	Floodway Data Table
GDC	Geospatial Data Coordination
GIS	Geographic Information System
KDP	Key Decision Point
LFD	Letter of Final Determination
Lidar	Light Detection and Ranging
LiMWA	Limit of Moderate Wave Action
LLPT	Local Levee Partnership Team

LOMC	Letter of Map Change
MAS	Mapping Activity Statement
MIP	Mapping Information Platform
MSC	Map Service Center
NAVD88	North American Vertical Datum of 1988
NFHL	National Flood Hazard Layer
NFIP	National Flood Insurance Program
NLCD	National Land Cover Database
NLD	National Levee Database
OFA	Other Federal Agencies
PFD	Primary Frontal Dunes
PII	Personally Identifiable Information
PMT	Project Management Team
POCP	Project Outreach and Communication Plan
PPP	Post-Preliminary Processing
PSA	Public Service Announcement
PTS	Production and Technical Services
QA/QC	Quality Assurance/ Quality Control
QMP	Quality Management Plan
QR	Quality Review
RAM	Risk Analysis Management
RAP	RAM Access Portal
RSC	Regional Service Center
SFHA	Special Flood Hazard Area

SID	Standard Identification
SOMA	Summary of Map Actions
SOW	Statement of Work
SPI	Schedule Performance Index
SPR	Special Problem Report
TSDN	Technical Support Data Notebook
USGS	United States Geological Survey