



FEMA

MEMORANDUM FOR: Mitigation Division Directors
Regions I - X

FROM: Doug Bellomo, P.E., Acting Chief
Risk Analysis Branch

SUBJECT: Procedure Memorandum 42 – Quality Control Requirements in the
Digital Flood Insurance Rate Map Production Process

EFFECTIVE DATE: **October 1, 2007**– Preliminary studies to be issued and studies
starting their appeal period on or after October 1, 2007.
March 1, 2008 - Post-Preliminary studies for which Letters of
Final Determination will be issued on or after March 1, 2008.

BACKGROUND

As part of Flood Map Modernization (Map Mod), the Department of Homeland Security's Federal Emergency Management Agency (FEMA) is committed to delivering high-quality mapping products to its stakeholders. FEMA outlined its quality standards in the *Guidelines and Specifications for Flood Hazard Mapping Partners (Guidelines and Specifications)*. Historically, mapping partners that produced Digital Flood Insurance Rate Maps (DFIRMs) performed visual quality control (QC) checks before distributing a Preliminary DFIRM. After issuance of a Letter of Final Determination (LFD), the mapping partner would submit paper map products and negatives to FEMA's Map Service Center (MSC). The partner also would submit the DFIRM to FEMA for quality review of the final DFIRM database prior to submittal to the MSC.

Note: Unless otherwise indicated "FEMA" refers to FEMA Headquarters or their designee.

ISSUE

Recently, new standards, requirements, and tools have been introduced in order to further the vision of Map Mod. In an effort to facilitate compliance with these new developments, FEMA issued Procedure Memorandum 35 to allow communities and FEMA to benefit from national study tracking capability, generate flood hazard data in a consistent framework for data sharing, produce higher quality modernized maps, and manage flood hazard mapping projects effectively.

As Map Mod continues, it is important that the program takes advantage of its progress and set the framework for a full digital map production platform while ensuring the timely delivery of quality products to communities. Changes to the mapping process described in this procedure memorandum have been designed to mitigate any negative impacts on mapping partner production and program delivery goals to the fullest extent possible. This statement is supported by the fact that many of FEMA's regions have already implemented this new process and have reported positive results in addressing the issues identified above.

ACTION TAKEN

Recognizing the need to deliver quality flood hazard maps to communities in a timely manner for adoption, FEMA has introduced a revised DFIRM production process which includes revised quality control requirements. These requirements include seven quality control reviews during pre-preliminary and post-preliminary phase of the DFIRM production process as illustrated in Figure 1. These quality control reviews are described in detail in the attachment to this memorandum.

All mapping partners, including Indefinite Delivery/Indefinite Quantity contractors and Cooperating Technical Partners, must follow the revised DFIRM production process shown in Figure 1 and described in the attachment. In the event that there are compelling reasons for exceptions to any quality control step outlined in Figure 1, FEMA Headquarters must be contacted by the FEMA Region for concurrence. Additionally, mapping partners that consistently satisfy the requirements of the quality control review steps following the implementation of this policy may be granted the authority to self-certify their submittals at various steps. In such cases, occasional audits will be conducted to ensure compliance with the intent of the quality control steps required in Figure 1 and the attachment. Additional guidance on self-certification will be forthcoming.

cc: Distribution list

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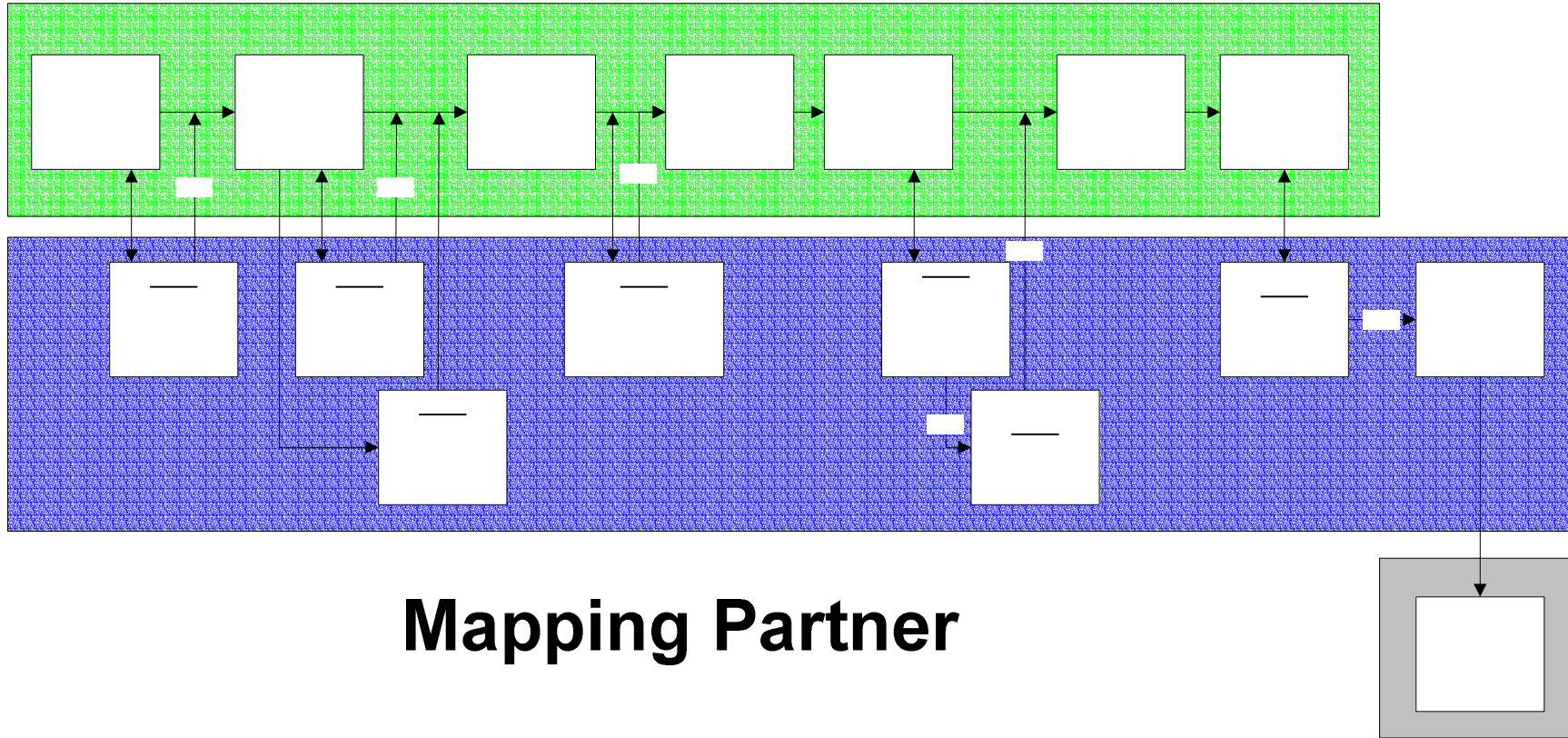


Figure 1: Quality Control Steps within the revised DFIRM Production Process

Develop DFIRM
database

Produce
Preliminary
Map Products

Pass

Pass

ATTACHMENT

Description of Quality Control Reviews in the Revised DFIRM Production Process

The following descriptions and steps assume that the mapping partners are using the Mapping Information Platform (MIP). The following steps incorporate MIP terminology and reflect MIP-related procedures but do not provide detailed user guidance.

QUALITY REVIEW 1: Validate Draft DFIRM Database Within Data Development

The mapping partner that is assigned the “Develop DFIRM Database” task in the MIP Study Workflow uploads the draft DFIRM database and metadata to the MIP. Once the upload is complete, FEMA will validate the uploaded content using the MIP’s “Validate Content Submission” feature which is also known as the MIP auto-validation tool. The auto-validation tool posts a pass/fail notification and provides a web link to an automatically generated and detailed QC report. If the content fails the auto-validation, the content is returned to the mapping partner for correction. The detailed logic for the auto-validation can be downloaded from FEMA’s MIP Tools and Links website. The auto-validation logic is the same for all Quality Review steps.

Note: A study cannot advance through the MIP Study Workflow until the Draft DFIRM database has passed the auto-validation.

QUALITY REVIEW 2: Validate Preliminary DFIRM

The mapping partner that is assigned the “Develop DFIRM [Digital Flood Insurance Rate Map] Database” task in the MIP Study Workflow uploads the preliminary DFIRM database and metadata to the MIP. Once the upload is complete, FEMA will validate the uploaded content using the MIP’s “Validate Content Submission” feature (MIP auto-validation tool). The auto-validation tool posts a pass/fail notification and provides a web link to an automatically generated and detailed QC report. If the content fails the auto-validation, the content is returned to the mapping partner for correction. The detailed logic for the auto-validation can be downloaded from FEMA’s MIP Tools and Links website. The auto-validation logic is the same for all Quality Review steps.

Note: A study cannot advance through the MIP Study Workflow until the Preliminary DFIRM database has passed the auto-validation.

QUALITY REVIEW 3: Validate Preliminary Map Panels

A sampling of the Preliminary Map Panels and the Flood Insurance Study (FIS) report will be visually reviewed to validate the information presented on the map panels. To accommodate this review, the mapping partner must submit the DFIRM panels to the FEMA Regional office (or their designee). The submittal must include, among other items, PDFs of the index and DFIRM panels, metadata, DFIRM mapping files (E00, shape file, and map information), and the FIS

report. FEMA Regional office (or their designee) will complete this review in 30 to 40 days depending on the size of the study. The mapping partner must correct any panel errors identified by FEMA prior to preliminary map issuance.

FEMA Regional office (or their designee) reviews approximately 10 percent of the DFIRM panels, looking for errors that significantly degrade the map's usability or that clearly violate the *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Note: The auto-validation (Quality Review 2) and FEMA's visual check (Quality Review 3) occur concurrently.

After the preliminary DFIRM database has been validated, FEMA stores the database in the MIP and certifies that the digital content has been stored in the MIP Study Workflow. The mapping partner responsible for "Distribute Preliminary Map Products" sends the preliminary transmittal letters, Summary of Map Actions (SOMA) (if required), DFIRM and map panels to the affected community.

QUALITY REVIEW 4: Validate BFE Notice and CEO Letters; Publish Proposed Base Flood Elevations (BFEs) in Federal Register

The mapping partner assigned the "Create BFE Notice" task must enter the proposed BFEs into the BFEs on the Web tool per Procedure Memorandum No. 44 and submit them to FEMA anytime after the issuance of preliminary DFIRMs, but no later than 30-calendar days prior to the anticipated mailing date of the BFE determination letters to the CEO. This will allow FEMA time to prepare and publish the proposed rule in the Federal Register (which generally takes 30 calendar days).

A copy of the published proposed Federal Register notice (available on the web at <http://www.gpoaccess.gov/fr/index.html>) must be enclosed with the BFE determination letter to the CEO; therefore, the publication of the proposed rule in the Federal Register must occur prior to mailing the BFE determination letter to the CEO.

Further, the assigned mapping partner must submit final draft CEO letters with all attachments to FEMA for review at least one week prior to mailing the BFE determination letter to the CEO and correct any errors identified by FEMA prior to the BFE publication and distribution. FEMA's review will not take more than seven days to complete, and if the mapping partner does not receive a response from FEMA after these seven days the mapping partner can proceed without formal notice from FEMA.

Publish Standard BFE Notice in Newspaper

The mapping partner publishes the standard BFE notice in the Newspaper(s).

Enter Mapping Corrections

The mapping partner incorporates corrections coming from community comments on the Preliminary DFIRM.

QUALITY REVIEW 5: Validate Final DFIRM Database and Map Panels

The mapping partner that is assigned the “Produce Map Products” task submits the final DFIRM database and georeferenced map panels to FEMA via the MIP Study Workflow. Once the upload is complete, the automated and visual agreement review of the DFIRM submission will commence. The auto-validation tool posts a pass/fail notification and provides a web link to an automatically generated and detailed QC report. When the DFIRM passes auto-validation check, the visual agreement check is initiated. The detailed logic for the auto-validation and visual-validation can be downloaded from FEMA’s MIP Tools and Links website. The auto-validation logic is the same for all Quality Review steps.

This step must be completed before the LFD is issued. Therefore, the mapping partner must submit the final DFIRM database and georeferenced map panels to FEMA 60 days prior the scheduled date of the LFD letter. FEMA will complete the auto-validation and the visual agreement checks in 30 to 40 days depending on the size of the study. The remaining 20 to 30 days allow for any subsequent iteration between the mapping partner and FEMA.

Note: The beginning of this process signifies the cutoff for any modifications to be incorporated into the study. This includes the Letter of Map Changes (LOMCs) incorporation. Additionally, this QC step must be completed before the LFD is issued and the negatives are produced.

QUALITY REVIEW 6: Check LFD Before Distribution

The mapping partner that is assigned the “Prepare LFD Docket” task is responsible for preparing the LFD and final SOMA for affected communities concurrent with Quality Review 5. The mapping partner producing the LFD and final SOMA must submit the required documents to FEMA 14 days prior to the scheduled date of issuance. After reviewing the submittal, FEMA will respond to the mapping partner within seven days. Any errors that are identified by FEMA must be resolved by the mapping partner prior to issuance of the LFD and final SOMA.

The final SOMA must be completed in the MIP using the new SOMA application. If all Letters of Map Change are not updated, the user will not be able to advance to the next step in the MIP Study Workflow.

Publish LFD

The mapping partner issues the LFD. The 6-month compliance period begins with the distribution of the LFD and sets the effective date for the maps.

Produce Map Products

The mapping partner that is assigned the “Submit MSC Deliverable” task prepares and submits the MSC Deliverable package to FEMA within 14 days after completion of Quality Review 5. The MSC Deliverable package should include, among other items, the final DFIRM, map panel negatives, Community Map Action List (CMAL), transmittal letters, profiles, and FIS report. For

a full list of map products required, see page 1-101 in Volume 1 of the *Guidelines and Specifications*.

QUALITY REVIEW 7: Validate MSC Deliverable Package

This review includes the “Approve or Reject” step in the MIP Study Workflow’s “Manage Post-Preliminary Processing/Perform Map Product QA.”

Submit Map Products to MSC

Once FEMA receives the MSC deliverable package from the mapping partner, FEMA will review and submit the package to the MSC within 14 days. However, if FEMA identifies significant quality issues, they must be resolved by the mapping partner no later than 30 days following the original submittal of the MSC deliverable package to FEMA. The detailed logic for this validation step can be downloaded from FEMA’s MIP Tools and Links website.

Mail Maps to Communities; Make Digital Files Available

The MSC mails the effective DFIRM and map panels to affected communities and makes the DFIRM and map panels available online.