

# Guidance for Flood Risk Analysis and Mapping

## Post-Preliminary Deliverables

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November 2016



**FEMA**

Requirements for the Federal Emergency Management Agency (FEMA) Risk Mapping, Assessment, and Planning (Risk MAP) Program are specified separately by statute, regulation, or FEMA policy (primarily the Standards for Flood Risk Analysis and Mapping). This document provides guidance to support the requirements and recommends approaches for effective and efficient implementation. Alternate approaches that comply with all requirements are acceptable.

For more information, please visit the FEMA Guidelines and Standards for Flood Risk Analysis and Mapping webpage ([www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping](http://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping)). Copies of the Standards for Flood Risk Analysis and Mapping policy, related guidance, technical references, and other information about the guidelines and standards development process are all available here. You can also search directly by document title at [www.fema.gov/library](http://www.fema.gov/library).

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## Table of Revisions

The following summary of changes details revisions to this document subsequent to its most recent version in November 2015.

Affected Section or Subsection	Date	Description
Section 3.0	November 2016	Update was made to account for the Technical Support Data Notebook and Flood Elevation Determination Docket guidance document and checklists being issued in May 2016. Specifically for FEDD Files this added the Stakeholder Engagement components.
Section 4.0	November 2016	Update was made to account for the Technical Support Data Notebook and Flood Elevation Determination Docket guidance document issued in May 2016. For the TSDN most of the text was removed to not duplicate information within both documents.
Section 5.5	November 2016	Minor update to clarify requirements for Orthophotography submittals and ensure this matches Data Capture Technical Reference and updates within the MIP Guidance document.

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## **1.0 Introduction**

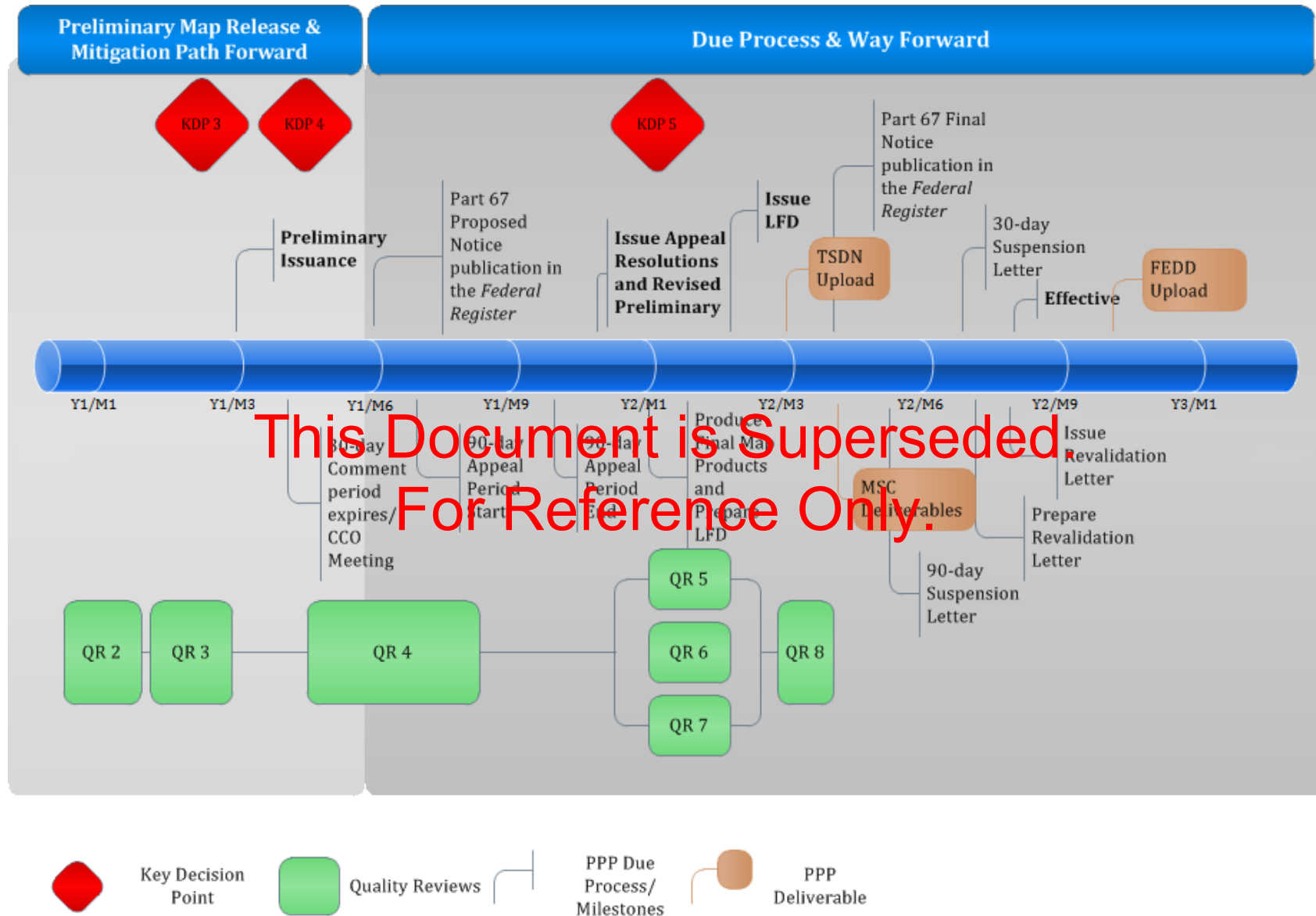
This document provides the standard procedures that staff from the Department of Homeland Security's Federal Emergency Management Agency (FEMA), FEMA contractors, and other organizations that partner with FEMA are to follow for processing new and revised Flood Insurance Study (FIS) Reports and Flood Insurance Rate Maps (FIRMs). Specifically, this document provides guidance on project deliverables made during the Post-Preliminary Processing (PPP) phase of a Flood Risk Project. The PPP phase is the period of the Flood Risk Project from after Preliminary Issuance to the Effective Date.

## **2.0 Post-Preliminary Processing Timeline**

In order to better understand where Post-Preliminary Deliverables fit into the overall study process, Figure 1 depicts the overall PPP timeline of Flood Risk Projects to demonstrate where PPP deliverables occur.

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Figure 1: PPP Timeline



Detailed guidance on Key Decision Points (KDPs) and Quality Reviews (QRs) may be found in the Key Decision Point (KDP) Process Guidance and Quality Review Guidance documents.

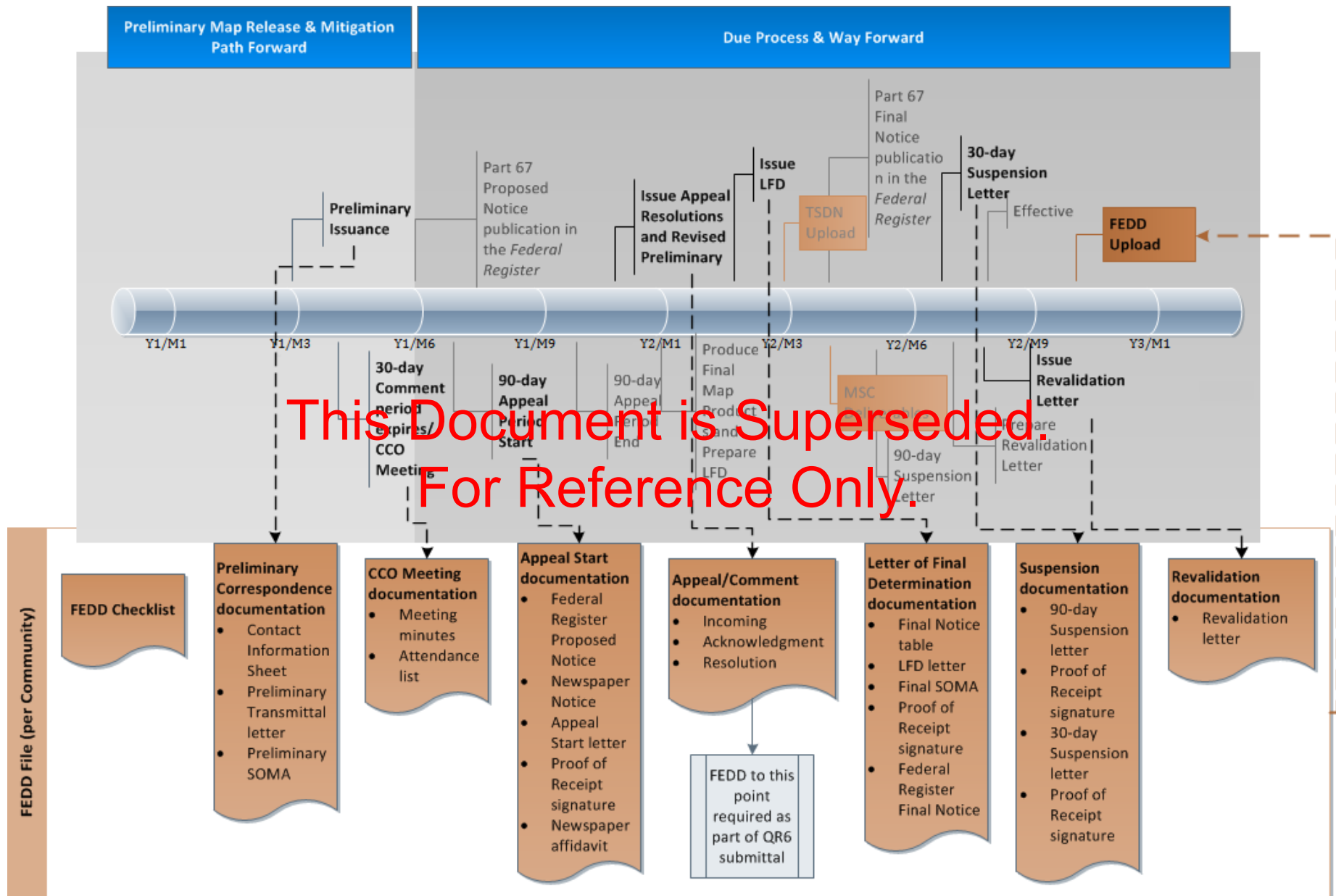
### **3.0 Flood Elevation Determination Docket (FEDD)**

The FEDD is a file maintained by FEMA that includes all correspondence between FEMA and the community concerning a flood study; reports of meetings held among FEMA representatives, community representatives, the State National Flood Insurance Program (NFIP) Coordinator, private citizens, FEMA and community contractors, or other interested parties; relevant publications (e.g., newspaper notices, Federal Register notices); and the Letter of Final Determination (LFD).

In accordance with the Code of Federal Regulations (CFR) 44 Part 67.3, FEMA must establish and maintain a FEDD. While due process and documentation requirements mandate the minimum regulatory requirements that must be met, additional outreach is likely beneficial to all parties involved to maximize usefulness of the new or updated flood hazard data, to encourage State and local ownership of the maps, and to explain and provide incentives for best practices. In Figure 2 the process integration between the PPP phase, the time each FEDD component is created, and the time the FEDD is completed and uploaded to the Mapping Information Platform (MIP) are shown.

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Figure 2: FEDD Timeline





All mapping partners must submit FEDD files to FEMA HQ (or its designee) for review during QR6 (60 days before the LFD is scheduled to be issued), along with the FEDD checklist.

FEMA HQ (or its designee) will maintain the FEDD file beginning with the issuance of the LFD and will add copies of all correspondence issued after that date. This correspondence will include the LFD, final Summary of Map Actions (SOMA), final *Federal Register* notice, suspension letters, Revalidation letters, and all applicable proofs of receipt. The complete FEDD file for each community will be archived to the MIP by FEMA HQ (or its designee) no later than 60-days following the FIRM effective date.

The following sections describe the components of the FEDD file and how they are created. This outlines the minimum content requirements for the FEDD file and supplemental information on how and when the content is created and issued, and also mirrors the FEDD checklist that designated Mapping Partners and Production and Technical Services (PTS) provider must complete.

Template is available at [www.fema.gov/media-library/assets/documents/32786?id=7577](http://www.fema.gov/media-library/assets/documents/32786?id=7577)

**Table 1: FEDD Components**

FEDD Component	Description
FEDD Checklist	Provides community information and outlines the components of the FEDD file.
<b>Before Data and Product Development Phase</b>	
Stakeholder Engagement: Mapping Processes and Modeling Correspondence	Before commencing the analysis and mapping activities that take place during the Data and Product Development Phase of a flood risk study, Project Teams shall provide a written notification to community Chief Executive Officer and Floodplain Administrator that explains selected mapping processes and modeling, explains why chosen processes and models are appropriate.
<b>Data and Product Development Phase</b>	
Stakeholder Engagement: Data Submission Correspondence	Prior to completion of Quality Review 1, Project Teams shall transmit a copy of the draft FIRM database and other contributing data as requested to the affected community Chief Executive Officers and Floodplain Administrators, provide a 30-day period during which the affected communities may provide data to FEMA that can be used to supplement or modify the existing data, and incorporate any data that are consistent with prevailing engineering principles. This will include correspondence that is sent to the communities as well as what is received from the community.

FEDD Component	Description
<b>Preliminary and Due Process Phases</b>	
Stakeholder Engagement: Flood Map Revisions and Appeals Processes Correspondence	During the Preliminary NFIP Map Release and Due Process phases of the lifecycle for a flood risk study, the Project Team shall work with the FEMA Regional Office of External Affairs, other FEMA staff, community officials, and local radio and television outlets to further educate property owners about flood map revisions and appeals processes.
<b>Preliminary Correspondence</b>	
Preliminary transmittal letter *	The Preliminary transmittal letters are to be drafted by FEMA's designee. Preliminary letters may have regional preferences in format and content. Usual recipients of Preliminary copies of the FIS Report, maps letters, and Preliminary SOMAs are, but not limited to: Community CEO, Community FPA, Non-Community Cooperating Technical Partner (CTP), FEMA Regional Office (RO) staff, State NFIP Coordinator; and Regional Service Center (RSC).
Preliminary SOMA*	The SOMA provides a comprehensive list of previously issued Letters of Map Change (LOMCs) for a community and assists community officials and property owners in determining the status of these LOMCs as a result of revisions to the FIRM. The Preliminary SOMA is issued in conjunction with the publication of a community's preliminary FIRM.
<b>Final Community Coordination Meeting documentation</b>	
Meeting minutes and meeting attendance list	The designated Mapping Partner provides minutes of the meeting to the assigned Project Team member, indicating whether the 90-day appeal period should be initiated or delayed to allow time to incorporate comments from the community or another Project Team member (i.e., IDIQ, CTP). The Consultation Coordination Officer (CCO) provides a written copy of the meeting minutes and attendance list at a later date. Per FEMA Program Standard 384, in the absence of a CCO meeting a letter shall be sent to the community and interested stakeholders to document the decision to forego the meeting.

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FEDD Component	Description
<b>Appeal Start Documentation</b> <b>(If there are Base Flood Elevation (BFE)/Depth, Special Flood Hazard Area (SFHA), Floodway, and/or Zone designation changes)</b>	
<i>Federal Register</i> Notice (Proposed)*	Notice of the proposed Flood Hazard Determinations (FHDs) in accordance with Section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and Part 67, Subpart 4(a) of Title 44 of the CFR
Newspaper Notice*	The publication of the News Release Notice must be in accordance with the specifications and the regulations found at Section 67.3 of the NFIP Regulations. The Newspaper notice is intended to: <ul style="list-style-type: none"> <li>• Provide the community information on new or modified flood hazards.</li> <li>• Direct citizens to review the Preliminary FIRM and FIS Report.</li> <li>• Increase property owners' awareness of their proximity to new or modified flood hazards.</li> <li>• Inform citizens where they can view or obtain copies of the preliminary and effective FIRM and FIS Report.</li> <li>• Include county/community names and map repository addresses of affected communities that have new or modified flood hazards.</li> </ul>
90-day appeal start letter – (sent certified mail or via FedEx)*	Notification to the appealable community of the new or modified proposed flood hazard determinations. These letters are sent certified mail or via FedEx and the designated Mapping Partner must retain proof of receipt via signature.
Return Receipt for certified mail*	USPS green card or comparable proof of receipt from commercial carrier for the delivery of the 90-day appeal start letter
Newspaper affidavit or tear sheets*	Shows the name of the newspaper and the dates of publication. This is received from the local newspaper organization that publishes the newspaper notice.
<b>If there is a Revised Preliminary FIRM issued prior to the start of a required 90-day appeal period</b>	
Same information as Preliminary Correspondence*	Contact Information, Revised Preliminary Transmittal, Revised Preliminary SOMA
<b>If there is a Revised Preliminary with BFE/Depth, SFHA, Floodway, and/or Zone designation changes</b>	
Same information as Appeal Start Documentation*	Federal Register Notice (Proposed), Newspaper Notice, 90-day appeal start letter – (sent certified mail or via FedEx)*, Return Receipt for certified mail, Newspaper affidavit or tear sheets

FEDD Component	Description
<b>If Appeals and Comments are received</b>	
Incoming letters of appeal/comment*	Any appeals or comments received during the Appeal Period disputing technical and/or non-technical information on the Preliminary Map products
Appeal/Comment acknowledgment*	Letter acknowledging receipt of incoming appeals/comments
Appeal/Comment Resolution letter*	Letter resolving appeals/comments. If any Preliminary Map products are revised as a result of the resolution, a 30-day review period is typically afforded to the appellant, community, and any other stakeholders
<b>Letter of Final Determination (To be added by PTS Contractor)</b>	
Final FHD table	The draft version of the final notice to be published in the <i>Federal Register</i>
LFD letter*	The letter in which FEMA announces its final determination regarding the flood hazard information, a new or revised FIRM, FIS Report, and (when appropriate) Flood Boundary Floodway Map (FBFM) for a particular community. In the LFD, FEMA begins the compliance period and establishes the effective date for the new or revised map products. This letter is sent certified mail or FedEx
Final SOMA*	The SOMA provides a comprehensive list of previously issued LOMCs for a community and assists community officials and property owners in determining the status of these LOMCs as a result of revisions to the FIRM. The Final SOMA is issued in conjunction with the LFD.
Return Receipt for certified mail*	USPS green card or comparable proof of receipt from commercial carrier for the delivery of the LFD letter
<i>Federal Register</i> (Final)*	Notice of the final flood hazard determinations in accordance with Section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and Part 67, Subpart 4(a) of Title 44 of the CFR

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FEDD Component	Description
<b>Suspension letters where applicable (To be added by PTS Contractor)</b>	
90-day Suspension letter*	If the community fails to submit compliant ordinances to the FEMA RO within the first 90 days of the compliance period, a 90-day suspension reminder letter is prepared and sent to the community.
Return Receipt for certified mail*	USPS green card or comparable proof of receipt from commercial carrier for the delivery of the 90-day Suspension letter
30-day Suspension letter *	If the community has not submitted compliant ordinances to the FEMA RO within 30 days of the effective date, a 30-day suspension reminder letter is prepared and sent to the community.
Return Receipt for certified mail*	USPS green card or comparable proof of receipt from commercial carrier for the delivery of the 30-day Suspension letter
<b>Revalidation letter where applicable (To be added by PTS Contractor upon receipt from Mapping Partner)</b>	
Revalidation letter(s)	The Revalidation Letter lists previously issued LOMCs that have been reaffirmed for the new FIRM. A Revalidation Letter becomes effective one day after the publication of a community's new or revised final FIRM. The Revalidation Letter does not list LOMCs that have been incorporated into the revised panel LOMCs and are superseded by new or revised mapping, or LOMCs that are no longer valid.

*\*Essential documentation. A failure to include documentation where applicable will result in a study not passing QR6 until the missing element is received.*

For more information on how the FEDD file is prepared and uploaded to the MIP, please reference the [Data Capture Guidance](#) document.

## 4.0 Technical Study Data Notebook (TSDN)

For more information on how the TSDN is prepared and uploaded to the MIP as well as the various components of the TSDN, please reference the [Data Capture Guidance](#) and [Technical Support Data Notebook and Flood Elevation Determination Docket Guidance](#) documents. Please note all appeal data including appeals data received and all documentation related to the appeal acknowledgment and resolution process must be uploaded to the MIP and archived within the TSDN.

## 5.0 Map Service Center Deliverables

The designated Mapping Partner will submit the final version of the FIRM, FIS Report, FIRM Database, transmittal letters, and printing paperwork to the Map Service Center (MSC) via the MIP. The MIP folder structure to be used for submitting all deliverables described in this section is outlined in the [Data Capture Guidance](#) document.

The MSC will coordinate QR8 review and then printing of the FIRM and FIS Report with the Government Printing Office (GPO) and distribute the printed copies to the affected communities.

The designated Mapping Partner or PTS must submit the final deliverable materials to the MSC as soon as possible after LFD via an email stating the name of the study, MIP case number, and location of the products on MIP. The final materials are described in the following sections.

### 5.1 MSC Paperwork

The designated Mapping Partner shall prepare the paperwork summarized below to accompany the final deliverable of regulatory products.

- [Transmittal Letter to Community CEO \(Microsoft Word\)](#) – For each community shown on the FIRM, a transmittal letter must be produced to accompany the materials to be distributed. The appropriate template from 179-series of letters should be used.
- [Inventory Worksheet for Each Community in the Mapping \(see Attachment 1\) \(Microsoft Excel\)](#) – One worksheet must be prepared for each community. If the FIRM is in countywide format, an additional worksheet should be produced for the countywide FIRM.

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### 5.2 FIS Report

The final FIS Report must be submitted in PDF format, and must conform to the requirements of the format applied to the study: 2003 or the current format outlined in the [FIS Report Technical Reference](#). As such, the [FIS Report Technical Reference](#) and [Data Capture Technical Reference](#) documents should be consulted as appropriate.

Final FIS Report requirements are nearly identical as those for a Preliminary FIS Report; therefore revisions necessary during the PPP phase are usually minimal. Typical updates include updating the FIS cover and body to reflect the new effective/revision date and results of any final Consultation Coordination Officer (CCO) meeting(s), appeals, and comments.

FIS Report PDF(s) should be bookmarked and contain no more than 150 pages for a single volume FIS Report, and no more than 100 pages for a multi-volume report. Each section and sub-section of the FIS Report PDF should be bookmarked. Additional bookmarking requirements are described in the [FIS Report Technical Reference](#) document.

### 5.3 RFIRM

The Raster FIRM (RFIRM) panels are digital raster images of the FIRM panels which must be submitted to the MSC in PNG or TIF formats. Color FIRM panel and index sheet images should be produced as 24-bit PNG files. Grayscale images (2003-format vector base map FIRMs and index sheets) should be produced in TIF format, compressed to CCITT G4 settings. Regardless

of file format, RFIRM images must be produced at a resolution of 400 DPI (14400 x 10350 pixels).

All RFIRM panels and index sheets must be georeferenced in the projected coordinate system used to produce the FIRM. Georeferencing information must be provided as a world file (.tfw/.pgw) accompanying each FIRM panel and index sheet.

The designated Mapping Partner should ensure that no extraneous files commonly produced by Geographic Information Systems (GIS) and image processing software, such as those with .aux, .rrd, and .xml file extensions, are not included in the RFIRM deliverable.

#### **5.4 FIRM Database**

The files comprising the final FIRM Database, and the accompanying metadata, must be provided in the format described in the Data Capture Technical Reference, FIRM Database Technical Reference, and Metadata Profiles Technical Reference documents. These data will be loaded into the National Flood Hazard Layer (NFHL).

#### **5.5 Orthophotography**

Aerial images and any associated world files that were used to create the FIRM must be included in the final deliverable if not already submitted under the Base Map data development task. This data should be delivered in the format that it was provided to FEMA unless the appearance of the portion of the orthophoto shown on the FIRM was modified by reprojection, resampling, etc. Due to the potentially large file sizes possible with this product, MIP upload of this product may not be feasible. Please see the MIP Guidance document for more information.

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