

Fall 2021 Guidance and Standards Maintenance Cycle Summary

FEMA maintains guidelines and standards to support the Risk Mapping, Assessment and Planning (Risk MAP) program. These define how to apply the statutory and regulatory requirements for National Flood Insurance Program (NFIP) flood mapping. They also outline how to perform Flood Risk Projects, how to process Letters of Map Change (LOMCs), and related Risk MAP activities. More information is available at: www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping.

November 2021 Routine Maintenance

FEMA has a maintenance plan for these guidelines and standards and issues updates annually. This summary relates to the 2021 update. As part of this policy update cycle, FEMA performed routine maintenance and smaller updates driven by specific requests or issues identified. In addition to these smaller updates, there are two significant changes that include:

Significant Change Topics*

Topic	Description
Flood Risk Products	Clarified requirements and quality checks associated with raster quality.
Criteria for removal of effective Zone As that appear as disconnected or erroneous floodplains	Defined specific criteria that if met, may allow some effective Zone A floodplain areas, that appear to be hydraulically disconnected and demonstrated to be erroneous by engineering or scientific data, to be removed during a Risk MAP study update.

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The standards changes are as follows:

SID #	Standard Change Description
174, 176, 180, 429	Updated to clarify and align with current Mapping Information Platform (MIP) submittal and standard operating procedures.
175	Rescinded to align with current Mapping Information Platform (MIP) submittal and standard operating procedures.
645	New Standard to potentially allow for removal of erroneous Special Flood Hazard Area when verified by engineering or scientific data.
332, 338, 349	Small adjustments to flood map graphic requirements to adjust for the implementation of the Automated Map Production tool by FEMA.



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*Reimbursable Appeals Standards and Guidance will not be included in this revision cycle as initially planned

SID #	Standard Change Description
371	Adjusted to remove requirement for world files based on the implementation of AMP. Other adjustments to make requirements consistent with current practice.

Standards

The table below lists new standards and updates to existing standards from the 2021 annual update to the Policy for Flood Risk Analysis and Mapping.

The updates and revisions are listed in the table below, with their Standard Identification Number (SID #), implementation date, primary key word(s) and current version of the standard (if applicable). The approach for updating these standards has been chosen to avoid any cost impacts on work underway.

The current standards and a list of acronyms are available on the [FEMA website](#).

SID #	Implementation Date	Primary Keyword	Original Standard	Revised Standard
174	Effective immediately	Data Capture	Certification of completeness of all submitted data for FEMA-funded Flood Risk Projects must be provided when work on a project is complete. (via the certification forms.)	Certification of completeness of all submitted data for FEMA-funded Flood Risk Projects must be provided when work by each mapping partner on a project is complete (via the certification forms).
175	Effective immediately	Data Capture	The preliminary Flood Insurance Study (FIS) Report must be submitted with the other required submittals at the completion of the Floodplain Mapping task.	Rescinded
176	Effective immediately	Data Capture	All spatial data must be georeferenced, have a standard coordinate system and projection defined and documented, and specify the horizontal and vertical datums used.	All spatial data must be georeferenced, have a standard coordinate system documented, and specify the horizontal and vertical datums used. The data documentation should specify the projection, or clarify that data is unprojected.

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SID #	Implementation Date	Primary Keyword	Original Standard	Revised Standard
180	Effective immediately	Data Capture	<p>All regulatory product deliverables, non-regulatory flood risk product deliverables, and relevant supporting data must be submitted one of the acceptable file format(s) and in the directory structure outlined in the Data Capture Technical Reference</p> <p>If data are collected that are not specifically mentioned in the Data Capture Technical Reference but are relevant to the project, or data is obtained from existing flood hazard analyses, those data must be submitted, but do not have to follow the file format and directory structure requirements.</p>	<p>All data or products uploaded to the MIP must be submitted in one of the acceptable file format(s) and in the directory structure outlined in the Data Capture Technical Reference.</p> <p>If data are collected that are not specifically mentioned in the Data Capture Technical Reference but are relevant to the project, or data is obtained from existing flood hazard analyses, those data must be submitted, but do not have to follow the file format and directory structure requirements.</p>
332	Effective immediately	FIRM Graphic Standards	<p>If a printed FIRM panel falls within the area of a smaller-scale panel that is also printed, the smaller scale panel shall show a breakout note in the blank area represented by the larger-scale panel (the breakout panel area). This note is placed in the center of the breakout panel area and specifies the larger scale panel's map number and scale. The suffixes shall not be used in breakout panel notes (to avoid unnecessary updates in Physical Map Revision (PMRs).</p>	<p>If a printed FIRM panel falls within the area of a smaller-scale panel that is also printed, the smaller scale panel shall show a breakout note in the blank area represented by the larger-scale panel (the breakout panel area). This note is placed in the center of the breakout panel area and specifies the larger scale panel's map number and scale. The suffixes shall not be used in breakout panel notes (to avoid unnecessary updates in PMRs). Breakout panels will not be labeled on AMP created FIRMs.</p>
338	Effective immediately	FIRM Graphic Standards	<p>Special Flood Hazard Areas shall be labeled at least once with the flood zone on a FIRM panel and, if appropriate, with the static elevation, velocity, or depth.</p>	<p>Special Flood Hazard Areas shall be labeled at least once with the flood zone on a FIRM panel and, if appropriate, with the static elevation, velocity, or depth. If a FIRM panel is produced via AMP, the elevation may appear on an adjacent panel.</p>

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SID #	Implementation Date	Primary Keyword	Original Standard	Revised Standard
349	Effective for all projects that have not started QR5	FIRM Graphic Standards	On the FIRM panels and in the FIRM Database, LIMIT LINES shall be placed at the beginning and at the end of flow in every area analyzed by detailed methods and shall be depicted as specified in the FIRM Panel Technical Reference.	On the FIRM panels and in the FIRM Database, LIMIT LINES shall be placed at terminus of a 1-percent-annual-chance floodplain where the Special Flood Hazard Area is abruptly truncated and no floodplains exist beyond the limit. This shall be depicted as specified in the FIRM Panel Technical Reference.
371	Effective immediately	Data Capture	<p>The following regulatory deliverables must be submitted using the file formats and directory structure specified in the Data Capture Technical Reference.</p> <ul style="list-style-type: none"> • Transmittal Form • FIRM Database • Orthophotos (if applicable) • FIRM Scans • World Files • FIS Report • Transmittal to Community CEO • Community Map Action List • Inventory Worksheet for Each Community 	<p>The following regulatory deliverables must be submitted using the file formats and directory structure specified in the Data Capture Technical Reference:</p> <ul style="list-style-type: none"> • FIRM Database • FIRM Scans • FIS Report • Transmittal to Community CEO • Inventory Worksheet for Each Community
429	Effective immediately	Data Capture	<p>The following flood risk product deliverables must be submitted using the file formats and directory structure specified in the Data Capture Technical Reference:</p> <ul style="list-style-type: none"> • Flood Risk Database • Depth and Analysis Grids • Metadata file 	<p>The following final flood risk product deliverables must be submitted using the file formats and directory structure specified in the Data Capture Technical Reference:</p> <ul style="list-style-type: none"> • Flood Risk Database • Depth and Analysis Rasters • Metadata file

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SID #	Implementation Date	Primary Keyword	Original Standard	Revised Standard
645	Implemented for any project not yet at preliminary as of 12/01/21	Floodplain Boundaries	New standard	<p>Removal of an effective base level (i.e. Zone A) special flood hazard area (SFHA) may be considered by FEMA if these two criteria are met:</p> <p>1) an engineering analysis is performed that shows there is no flood hazard where the effective Zone A is located; 2) the impacted community and FEMA Regional Project Monitor both concur about the removal on the same correspondence (e.g. email, letter, etc.).</p> <p>If the engineering analysis shows there is still flood hazard, but the depth is less than 1 foot, the SFHA may be considered for change to a shaded Zone X; however, this will still require the impacted community and FEMA Regional Project Monitor to concur about the change on the same correspondence (e.g. email, letter, etc.).</p>

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Guidance, Technical References, and Other Documents

Listed below are the documents FEMA updated during the current annual cycle.

Guidance Document Title	Update Description
Accepting Numerical Models for Use in the NFIP	Updated to reflect the most recent resources and URLs available on FEMA.gov.
MT-1 Technical, Post-Flood Hazard Verification/Recovery Tools	Updated to incorporate best practices, correct broken URLs, and to clarify terminology and acronyms.
Quality Management for Flood Risk Projects	Updated to make minor adjustments to program terminology, align with AMP updates and fix broken hyperlinks.
Metadata	Updated to include a note about submitting base imagery metadata if imagery is anything other than The National Map data used by AMP; also updated several outdated hyperlinks.
Notice-to-Users Revisions	Updated to refresh program terminology, specifically changing the term Notice to User Revision to Notice to User Correction. The new document title will be “Notice-to-Users Corrections”.

Guidance Document Title	Update Description
Flood Insurance Rate Map (FIRM) Graphics	Updated to align with recent changes to the Automated Map Production (AMP) tool, including changes to sections 1 (AMP), 5.0 (Base Maps, and 7.0 (Map Collar Information).
National Flood Hazard Layer (NFHL)	Updated to provide new location of related NFHL tools and other programmatic changes to better align database conversion protocols.
Calculation of Incident Wave Height and Slope for use with TAW Wave Runup Method	Retired; this information is now included as an Appendix in the Coastal Wave Runup and Overtopping Guidance.
Key Decision Point (KDP) Process	Updated to align language pertaining to Letters of Final Determination (LFD) with KDP 5 consolidation.
Coastal Overland Wave Propagation	Updated to incorporate Limit of Moderate Wave Action (LiMWA) language and to update terminology.
Coastal Structures, Data Capture - Workflow Details, Determination of Wave Characteristics	Updated to reflect current standard operating procedures, to update references to other guidance documents, and to correct broken URLs/links.
Riverine Mapping and Floodplain Boundaries	Updated to add a new section 8 in alignment with new SID 645, providing guidance about how providers might be able to remove an effective base level (i.e., Zone A) special flood hazard area (SFHA) if certain conditions are met.
Floodway Analysis and Mapping	Updated to clarify information regarding evaluation lines and their implementation on regulatory products.
Coastal Wave Runup and Overtopping	Updated to unify and combine information with other coastal-related Guidance, to reflect current standard operating procedures, to update references to other guidance documents, and to correct broken URLs/links.
Levee	Updated terminology to change levee “completeness check” to “compliance review”, updated broken hyperlinks, referenced figure numbers and subsection numbers, as well as adding information on use of the National Levee Dataset (NLD) and clarifying how to address closures of openings and USACE risk assessments. Providing more guidance on flood hazard area and floodway mapping when impacted by levee systems.
Base Level Engineering	Updated to include references relevant to 2D Modeling; to clarify application of engineering standards, specifications, standard operating procedures, and deliverables to ensure BLE data submittals are regulatory ready; to update terminology; to update references to other guidance documents; and to correct broken URLs/links.
Stakeholder Engagement: Project Planning and Discovery Process, Stakeholder Engagement: Preliminary Production Process, Stakeholder Engagement: Post-Preliminary Due Process, Stakeholder Engagement: Introduction and Key Terms	Updated to correct broken URLs/links and incorporate virtual meeting guidance.
MT-2	Updated to align with program applied approaches document (in development) and correct broken URLs and hyperlinks.

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Technical References	Update Description
Flood Insurance Rate Map (FIRM) Panel	Updated to align with program updates including 1) section 1 related to the Automated Map Production (AMP) tool; 2) sections 5 (Map Body) and 9 (FIRM Title Block) to align with recent AMP changes.
Flood Insurance Rate Map (FIRM) Database	Updated to better align with the Automated Map Production (AMP) tool, including revised footnotes and to align with updated BLE information.
Domain Tables	Updated to better align with the Automated Map Production (AMP) tool, including revised footnotes. Also, providing better guidance for domains linking model information to the FIS.
Coordinated Needs Management Strategy (CNMS)	Updated to align the Technical Reference (and schema) to the most current standard operating procedures, domains, Tier inventory classifications, and validation procedures, and to better align with BLE purchase information.
Metadata Profiles	Updated to refresh program references and align with updates being made to the metadata profiles.
Data Capture	Updated to reflect current standard operating procedures and incorporate updates to BLE guidance. World files and orthophotos are no longer required components of the final regulatory product deliverables. Also revised to update references to other guidance documents, and to correct broken URLs/links.

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Templates	Update Description
Flood Risk Products Checklist	Updated to clarify relationship of quality checks to standards and streamlining the checklists for raster products. Also, adding an addendum to show examples of correct and incorrect rasters.
Regulatory Checklists	Updated to better align with the Automated Map Production (AMP) tool and impacts to the required Quality Reviews (QRs).
Flood Insurance Rate Map (FIRM) Database	Updated to better align with the Automated Map Production (AMP) tool and refresh some outdated program information.
Alluvial Fan Study Metadata, Base Map Metadata, Coastal Study Metadata, Discovery, Draft, Preliminary and Final FIRM Metadata, Flood Risk Metadata, Floodplain Mapping and Redelineation Metadata, Hydraulics Metadata, Hydrology Metadata, Orthoimagery Metadata, Survey Metadata, Terrain Metadata, Metadata XMLs	Updated with minor edits to reflect program changes such as Risk MAP IT Help email address as well as outdated hyperlinks.