2023 Guidance and Standards Maintenance Cycle and Standards Public Review Announcements

This document contains both the **2023 Guidance and Standards Maintenance Cycle Announcement** and the **2023 Standards Public Review Announcement**. The maintenance cycle announcement provides a summary of all the planned changes to Risk MAP guidance and standards this year. The standards public review announcement provides the specific proposed changes for each standard and provides an opportunity for public review and comment by floodplain managers, engineers, and other Risk MAP stakeholders.

Contents

FEMA has guidance and standards to support the Risk Mapping, Assessment and Planning (Risk MAP) program. These standards and guidance define the implementation details of the statutory and regulatory requirements for National Flood Insurance Program (NFIP) mapping. They describe how FEMA performs Flood Risk Projects, Letters of Map Change (LOMC), and related coordination activities. They are intended for mapping professionals and Cooperating Technical Partners (CTPs) under the Risk MAP Program. See the FEMA website for more information.

These guidance and standards need to be maintained. FEMA has a maintenance plan and issues updates each year. The annual cycle typically includes both significant changes reflecting impactful policy initiatives and simple maintenance. FEMA identifies these needs through routine reviews and by subject matter experts. Each change is identified as significant, simple, or minor.

We plan to publish revised standards and guidance in November 2023. The proposed changes to standards are listed in the second half of this document. **These changes are available for public review and comment from July 5 to August 4 before they are included in the policy.** Proposed changes to guidance will be published at the beginning of August.

FEMA

If you have any questions, please contact fema-gs@fema.dhs.gov.

2023 Guidance and Standards Maintenance Cycle Announcement

Topics Reviewed

As part of the routine maintenance cycle for 2023, FEMA reviewed documents related to the following topics. Only standards and documents needing changes are listed in the following sections.

Topic	Topic (cont.)
2D Models	Due Process
Automated Engineering	Engineering
Base Map	Federal Register
Base Flood Elevation (BFE)	Flood Insurance Rate Map (FIRM) Index
Coordinated Needs Management Strategy (CNMS)	Hydrologic and Hydraulic (H&H) Analyses
Coastal - Mapping	Profile Baseline
Coordination	Project Planning
Correspondence	Stakeholder Engagement
Cross-Sections	

Significant Change Topics

Topic	Description
Final Consultation Coordination Officer (CCO) Meeting	Updating SID 384 to require consultation with the state NFIP coordinators office during CCO meeting planning.
Geospatial Points of Contact	Rescinding SID 155 requirement to report state geospatial data points of contact to FEMA.
Base Level Engineering (BLE) Publishing	Proposing a new standard to require all BLE data be submitted in a consistent format and be published through a national viewer. This proposed change includes moving the BLE data / database requirements from guidance into the FIRM Database Technical Reference.

Significant and Simple Changes

The table below describes both the specific changes associated with the significant changes above and the simple maintenance items identified through routine maintenance reviews or on an ad hoc basis. A short summary

describes the proposed changes. Simple changes have small impacts to current practices that require minimal or no changes in FEMA Regional operations and minimal or no impacts to stakeholders.

Item #	Doc. Type	Doc. Title/SID	Description
1	Standard	106	Updating to clarify that precision requirements for ponding and lacustrine areas only apply to new or revised areas. Language updated to clarify relevant coastal flood zone types for whole foot BFEs.
2	Standard	155	Rescinding requirement to report state geospatial data points of contact to FEMA.
3	Standard	128, 346, 374	Updating to include use of evaluation lines on maps in areas based on two-dimensional (2-D) modeling.
4	Standard	348	Updating to clarify the hexagon symbology applies to lettered or numbered cross sections, and not unlettered, mapped features.
5	Standard	384	Updating to require consultation with the state NFIP coordinators office during CCO meeting planning.
6	Standard	385	Updating to remove duplicative language regarding the Proposed Flood Hazard Determination Notice established in SID 387 and to clarify the method of notification.
7	Standard	387	Updating in concert with SID 385 to reference corresponding Code of Federal Regulations (CFR).
8	Standard	411	Updating to reflect current practice within the program and corresponding CFR.
9	Standard	414, 417, 433, 442	Updating to clarify deliverable requirements for Flood Risk Database components.
10	Standard	516	Updating to reflect the current Mapping Information Platform (MIP) process.
11	Standard	648 (New)	Proposing a new standard to require all BLE data be submitted in a consistent format and requiring it to be published through a national viewer.
12	Guidance	Accepting Numerical Models for Use in the NFIP	Updating to refine the process for requesting new models to be added (or potentially removed) from the list.
13	Guidance	Base Level Engineering	Updating to move the BLE data / database submittal requirements into the FIRM Database Technical Reference.
14	Guidance	Base Map and FIRM Panel Layout	Updating to clarify typical base map requirements when using Automated Map Production (AMP).

Item #	Doc. Type	Doc. Title/SID	Description
15	Guidance	Coastal Flood Frequency and Extreme Value Analysis, Coastal Statistical Simulation Methods	Updating to refresh URLs and add information about certain techniques and resources.
16	Guidance	Coastal Floodplain Mapping, Combined Coastal and Riverine Floodplain Mapping	Updating citations, references, and improving readability
17	Guidance	Coastal Overland Wave Propagation	Updating to refresh URLs and improve certain figures and language
18	Guidance	Coastal Wave Runup and Overtopping	Updating to add equations for analysis and better organize the way equations are presented in the document. Update is an overall restructuring to improve readability.
19	Guidance	Coastal Wave Setup	Updating to address use of 2D analysis for coastal wave setup, add language about analysis methods, refresh URLs, and restructure the document for readability.
20	Guidance	Federal Register Notices	Updating to better describe types of notices and processes and to ensure alignment with current practice and CFR.
21	Guidance	FIRM Index	Updating to align with recent AMP tool release changes which impact the output index panels.
22	Guidance	Floodway Analysis and Mapping	Updating to clarify information regarding no-rise floodway analysis.
23	Guidance	Geospatial Data Coordination	Updating to reflect rescinded SID 155.
24	Guidance	Hydraulics: Two-Dimensional Analysis	Updating several sections to clarify when changes are required within 2-D models.
25	Guidance	Ice Jam	Updating to clarify application and limits of direct and indirect analyses as they relate to available data and ice jam type, revise text to better relate analyses to current methods and software, and add practical examples of direct analysis methods.
26	Guidance	Levees	Updating to align with other aspects of the Risk MAP Program pertaining to levees.
27	Guidance	Mapping BFEs on FIRMs	Updating to improve clarity, ensure consistency with standards and other guidance, and provide details regarding FIRM Database features and schema in specific scenarios.

Item #	Doc. Type	Doc. Title/SID	Description
28	Guidance	Mapping Information Platform (MIP)	Updating to align to current standard operating procedures.
29	Guidance	Mitigation Planning Technical Assistance	Updating to incorporate new best practices and correct broken URLs/links.
30	Guidance	MT-2 Requests	Updating to align with current levee guidance and other updates being proposed for this cycle.
31	Guidance	Notice-to-User Corrections	Updating to include flowchart graphic for submittal procedures.
32	Guidance	Post-Preliminary Due Process, Technical Support Data Notebook and Flood Elevation Determination Docket	Updating to ensure full alignment with current requirements and processes.
33	Guidance	Stakeholder Engagement: Preliminary Production Process	Updating to incorporate viewer enhancements.
34	Guidance	Vertical Datum Conversion	Updating to reference the National Geodetic Survey (NGS) Coordinate Conversion and Transformation Tool (NCAT), which supersedes the legacy Vertical Datum Conversion Program (VERTCON), correct outdated references, and ensure consistent terminology as used by NGS.
35	Technical Reference	Data Capture, Flood Risk Database (FRD)	Updating to remove the FRD geodatabase file format from the FRD Deliverable.
36	Technical Reference	Domain Tables	Updating domain D_MTG_TYP to remove extra CCO Meeting options.
37	Technical Reference	FIRM Database	Updating to add requirements for BLE data submittals as well as changes to the STUDY INFO table to include more options for Tribal Nations.
38	Technical Reference	Flood Insurance Study (FIS) Report	Updating to align the FIRM Index specifications with changes being proposed to the FIRM Index Guidance.
39	Template	FIS Template	Updating to align FIS report meeting table with changes to the domain D_MTG_TYP.
40	Template	Flood Risk Products Checklist	Updating to remove the FRD geodatabase file format from the FRD Deliverable.
41	Template	Levee Letters	Updating overall group of letters and templates to align with current levee guidance and standards .

Item #	Doc. Type	Doc. Title/SID	Description
42	Guidance, Technical Reference (TR), Template	Elevation Guidance, FIRM Database Guidance, National Flood Hazard Layer (NFHL) Guidance, FIRM Database TR, Flood Risk Database TR, Domain Tables TR, XML Template Files, Flood Risk Database Schema, Flood Risk Products (FRP) QC Checklist and Addendum	Updating schema options and guidance to recommend use of the international foot, in compliance with the decision of multiple federal agencies to deprecate use of the U.S. survey foot on December 31, 2022. This does not include any new or revised standard since some existing datasets, ongoing task orders, or states may continue requiring use of the U.S. survey foot until the modernization of the National Spatial Reference System (NSRS) is implemented.

Minor Changes

Minor changes to standards and guidance do not have any impact on the current intent. They will not have any regional or stakeholder impact. These changes are intended to improve the consistency or clarity of the wording or to correct minor errors (e.g., typos).

SIDs	
None	
Guidance Documents & Technical Reference	**Templates**
Guidance: Non-Regulatory	None
Guidance: Appeals and Comment Processing	

If you have any questions, please contact fema-gs@fema.dhs.gov.

2023 Standards Public Review Announcement

Below is a summary of proposed standards changes for 2023. The summary of all planned changes to guidance and standards can be found above and posted to FEMA.gov here.

Standards

The table below lists potential new standards and proposed updates to existing standards. FEMA will publish these standards in November 2023 during the annual update. **These draft updates are available for public review and comment from July 5 to August 4 before they are included in the policy.**

Each update lists the Standard Identification Number (SID), implementation date, primary key word(s) and current version of the standard (if applicable). The approach to update these standards was chosen to avoid cost impacts on work that is underway.

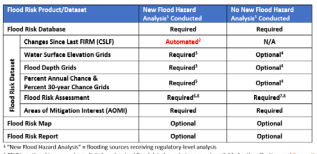
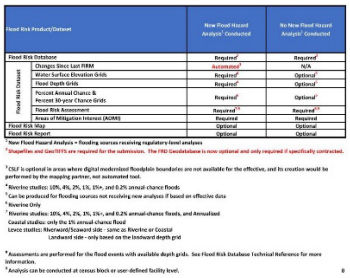
The current standards and a list of acronyms are available on the FEMA website.

SID	Implementation Date	Primary Keyword	Original Standard	Revised Standard
106	Effective immediately	BFEs	BFEs for ponding and lacustrine areas must be expressed to the 10th of a foot if they have been calculated to that level of precision; otherwise they should be shown as whole-foot rounded elevations. Unrevised lake and ponding elevations may be converted to 10th foot elevations if supported by technical data on a project-by project basis in coordination with the FEMA Project Officer. BFEs for coastal flood zones must be shown as whole foot elevations.	New or Revised riverine flood study BFEs for ponding and lacustrine areas must be expressed to the 10th of a foot if they have been calculated to that level of precision; otherwise they should be shown as whole-foot rounded elevations. Unrevised lake and ponding elevations may be converted to 10th-foot elevations if supported by technical data on a project-by-project basis in coordination with the FEMA Project Officer. BFEs for coastal or combined riverine and coastal flood zones must be shown as whole-foot elevations.

SID	Implementation Date	Primary Keyword	Original Standard	Revised Standard
128	Effective immediately	2D Models	For floodplains mapped from 2D models, BFE lines on the FIRM must match modeled water surface elevations and must be plotted at intervals sufficient to interpolate accurate BFEs in between BFE lines. If this is not possible, separate Flood Profiles for significant flow paths and/or FIS Report inserts must also be created.	For floodplains mapped from 2-D models, evaluation lines and BFE lines on the FIRM must match modeled water surface elevations and must be plotted at intervals sufficient to interpolate accurate BFEs in between BFE or evaluation lines. If this is not possible, separate Flood Profiles for significant flow paths and/or FIS Report inserts must also be created.
155	Effective immediately	GDC	State Geospatial Data Coordination Procedures and Points of Contact must be reported to FEMA as new sources of federal or state data are identified.	Proposed to rescind
346	Effective immediately	Cross-Sections	On FIRM panels, all LETTERED, MAPPED and NOT LETTERED, MAPPED cross sections must be labeled with the regulatory WSEL value, rounded to the nearest tenth of a foot. All lettered or numbered cross section WSEL values must match the FDT in the FIS Report.	On FIRM panels, all LETTERED, MAPPED and NOT LETTERED, MAPPED cross sections and evaluation lines must be labeled with the regulatory WSEL value, rounded to the nearest 10th of a foot. All lettered or numbered cross section and evaluation line WSEL values must match the FDT in the FIS Report.
348	Effective immediately	Cross-Sections	In the event that a cross section contains multiple water surface elevations the cross section shall be segmented and each segment labeled on the FIRM panel with its corresponding WSEL value and a hexagon.	In the event that a cross section contains multiple water surface elevations, the cross section shall be segmented and each segment labeled on the FIRM panel with its corresponding regulatory WSEL value and, when the cross section is lettered or numbered, a hexagon.

SID	Implementation Date	Primary Keyword	Original Standard	Revised Standard
374	Effective immediately	BFEs	If the BFE values shown on lettered cross sections are not sufficient for map users to accurately interpolate the BFE for some locations, then unlettered cross sections or BFE lines should be added to the FIRM and labeled to provide additional resolution.	If the BFE values shown on lettered cross sections or evaluation lines are not sufficient for map users to accurately interpolate the BFE for some locations, then unlettered cross sections, evaluation lines, or BFE lines should be added to the FIRM and labeled to provide additional resolution.
384	Effective immediately	Correspondence	For Flood Risk Projects, a CCO meeting is required to occur following the issuance of preliminary products. In the absence of a final CCO meeting a letter shall be sent to the community and interested stakeholders to document the decision to forego the meeting.	For Flood Risk Projects, a CCO meeting is required to occur following the issuance of preliminary products. The state NFIP coordinators office should be consulted during CCO meeting planning and shall be notified about the CCO meeting. In the absence of a final CCO meeting a letter shall be sent to the community and interested stakeholders to document the decision to forego the meeting.
385	Effective immediately	Fed Register	Per Code of Federal Regulations Title 44 C.F.R. § 67.4, the newspaper notice and Proposed Flood Hazard Determination Notice shall include all communities affected by new or modified flood hazard information. The newspaper notice shall be published twice within the 10-days of notification of the community CEO, after publication of the Proposed Flood Hazard Determination Notice.	Per Code of Federal Regulations Title 44 CFR § 67.4, the newspaper notice shall include all communities affected by new or modified flood hazard information. The newspaper notice shall be published twice within the 10 days of notification by certified mail of the community CEO, after publication of the Proposed Flood Hazard Determination Notice.

SID	Implementation Date	Primary Keyword	Original Standard	Revised Standard
387	Effective immediately	Fed Register	The appropriate Federal Register Flood Hazard Determinations Notice proposing changes to flood hazard information shall be compiled for all communities affected by the addition or modification of flood hazards (i.e., the Proposed Notice for flood risk studies and the Interim Notice for LOMRs). The Notice shall include a hyperlink for the official FEMA website through which stakeholders can access the products depicting the proposed flood hazard changes. The Notice shall be submitted to the designated FEMA coordinator to route for concurrence and signature. FEMA shall coordinate with the Office of Federal Register to ensure timely publication of the Notice in the Federal Register. The published Notice must be reviewed to ensure accuracy; if needed, corrections must be made, and other Project Team members must be notified of the correction.	The appropriate Federal Register Flood Hazard Determinations Notice proposing changes to flood hazard information shall be compiled for all communities affected by the addition or modification of flood hazards (i.e., the Proposed Notice for flood risk studies and the Interim Notice for LOMRs), per Code of Federal Regulations Title 44 CFR § 67.4. The Notice shall include a hyperlink for the official FEMA website through which stakeholders can access the products depicting the proposed flood hazard changes. The Notice shall be submitted to the designated FEMA coordinator to route for concurrence and signature. FEMA shall coordinate with the Office of Federal Register to ensure timely publication of the Notice in the Federal Register. The published Notice must be reviewed to ensure accuracy; if needed, corrections must be made, and other Project Team members must be notified of the correction.
411	Effective immediately	Fed Register	FEMA will publish a notice of community eligibility in the Federal Register.	FEMA will publish a notice of community eligibility on an official FEMA website per Code of Federal Regulations Title 44 CFR § 64.6.

SID	Implementation Date	Primary Keyword	Original Standard	Revised Standard
414	Effective Immediately	Flood Risk Datasets	Flood risk datasets derived from new or updated data must reflect the regulatory elevations as shown on the preliminary FIRM, if applicable. If floodplain delineations are altered as a result of appeals or other changes during the post-preliminary process, the Changes Since Last FIRM dataset shall be updated to reflect those changes.	Flood risk datasets derived from new or updated data must reflect the regulatory elevations as shown on the preliminary FIRM, if applicable. If floodplain delineations are altered as a result of appeals or other changes during the post-preliminary process, the Changes Since Last FIRM dataset shall be updated to reflect those changes if available.
417	Effective immediately	Flood Risk Datasets	The minimum datasets associated with the Flood Risk Project are defined as follows: 	*Add a table footnote to the Flood Risk Database reading: "Shapefiles and GeoTIFFS are required for the submission. The FRD data in geodatabase format is optional and only required if specifically contracted." See below for table comparison.* The minimum datasets associated with the Flood Risk Project are defined as follows: 
433	Effective immediately	Flood Risk Database	Non-regulatory flood risk datasets must be delivered within the Flood Risk Database and must not be tiled or subdivided.	Non-regulatory flood risk datasets must be submitted using the schema found in the Flood Risk Database Technical Reference. Datasets must not be tiled or subdivided.

SID	Implementation Date	Primary Keyword	Original Standard	Revised Standard
442	Effective immediately	Flood Risk Database	Non-regulatory flood risk datasets must comply with the following database schema properties defined in the Flood Risk Database Technical Reference: • Tables and Feature Classes • Raster Datasets • Spatial Reference Systems • Topology Rules • Relationship Classes • Domains	Non-regulatory flood risk datasets must comply with the following database schema properties defined in the Flood Risk Database Technical Reference: • Tables and Feature Classes • Raster Datasets • Spatial Reference Systems • Topology Rules • Domains
516	Effective immediately		The standard Proposed Flood Hazard Determination Notice must be posted with the correct newspaper notice publication dates and appeal period start and end dates on FEMA's website prior to issuing the 90-day start letters.	The standard Proposed Flood Hazard Determination Notice must be posted with the appeal period start and end dates on FEMA's website prior to issuing the 90-day start letters.
648	Effective for all FY24 studies and beyond	Engineering	N/A	Base Level Engineering (BLE) data delivered as part of a Risk MAP study must follow the requirements in the FIRM Database Technical Reference and be published through a FEMA national viewer.

SID 417 TABLE COMPARISON

Original Table:

Flood Risk Product/Dataset		New Flood Hazard Analysis[1] Conducted	No New Flood Hazard Analysis[1] Conducted
Flood Risk Database		Required	Required
Flood Risk Dataset	Changes Since Last Firm (CSLF)	Automated[2]	N/A
	Water Surface Elevation Grids	Required[3]	Optional[4]
	Flood Depth Grids	Required[3]	Optional[4]
	Percent Annual Chance & Percent 30-year Chance Grids	Required[5]	Optional[4]
	Flood Risk Assessment	Required[6, 8]	Required[7, 8]
	Areas of Mitigation Interest (AOMI)	Required	Required
Flood Risk Map		Optional	Optional
Flood Risk Report		Optional	Optional

[1] "New Flood Hazard Analysis" = flooding sources receiving regulatory-level analyses

[2] CSLF is optional in areas where digital modernized floodplain boundaries are not available for the effective, and its creation would be performed by the mapping partner, not automated tool.

[3] Riverine studies: 10%, 4%, 2%, 1%, "1%+", and 0.2% annual-chance floods
Coastal studies: only the 1% annual chance flood
Levee studies: Riverward/Seaward side - same as Riverine or Coastal
Landward side - only the scenario(s) used to delineate SFHA bounc

[4] Can be produced for flooding sources not receiving new analyses if based on effective data

[5] Riverine only

[6] Riverine studies: 10%, 4%, 2%, 1%, and 0.2% annual-chance floods, and Annualized
Coastal studies: only the 1% annual chance flood
Levee studies: Riverward/Seaward side - same as Riverine or Coastal
Landward side - only based on the landward depth grid

[7] Assessments are performed for the flood events with available depth grids. See Flood Risk Database Technical Reference for more information.

[8] Analysis can be conducted at census block or user-defined facility level.

Revised Table:

Flood Risk Product/Dataset		New Flood Hazard Analysis[1] Conducted	No New Flood Hazard Analysis[1] Conducted
Flood Risk Database		Required[2]	Required[2]
Flood Risk Dataset	Changes Since Last FIRM	Automated[3]	N/A
	Water Surface Elevation Grids	Required[4]	Optional[5]
	Flood Depth Grids	Required[4]	Optional[5]
	Percent Annual Chance & Percent 30-year Chance Grids	Required[6]	Optional[5]
	Flood Risk Assessment	Required[7,9]	Required[8,9]
	Areas of Mitigation Interest (AOMI)	Required	Required
Flood Risk Map		Optional	Optional
Flood Risk Report		Optional	Optional

[1] New Flood Hazard Analysis = flooding sources receiving regulatory-level analyses

[2] Shapefiles and GeoTIFFS are required for the submission. The FRD data in geodatabase format is optional and only required if specifically contracted.

[3] CSLF is optional in areas where digital modernized floodplain boundaries are not available for the effective, and its creation would be performed by the mapping partner, not automated tool.

[4] Riverine studies: 10%, 4%, 2%, 1%, 1%+, and 0.2% annual-chance floods

[5] Can be produced for flooding sources not receiving new analyses if based on effective data

[6] Riverine Only

[7] Riverine studies: 10%, 4%, 2%, 1%, 1%+, and 0.2% annual-chance floods, and Annualized
Coastal studies: only the 1% annual-chance flood
Levee studies: Riverward/Seaward side - same as Riverine or Coastal
Landward side - only based on the landward depth grid

[8] Assessments are performed for the flood events with available depth grids. See Flood Risk Database Technical Reference for more information.

[9] Analysis can be conducted at census block or user-defined facility level.

How to Submit Comments to FEMA

You may provide comments via email at: fema-gs@fema.dhs.gov. Comments received prior to August 4 will be reviewed and addressed, as appropriate, before the standards are finalized.