

Fall 2023 Guidance and Standards Summary of Policy Changes

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.

FEMA has a maintenance plan for these guidelines and standards and issues updates annually. This summary relates to the 2023 update. If you, or those in your organization, want to receive updates like this, please follow this link: [Signup for FEMA Email Updates \(govdelivery.com\)](#)

The summary of planned changes for this cycle was published on Aug. 15, 2023 and can be found [here](#). Those changes are:

Significant Change Topics

Topic	Description
Final Consultation Coordination Officer (CCO) Meeting	Updated SID 384 to require notification of the state National Flood insurance Program (NFIP) coordinator's office of Consultation Coordination Officer (CCO) meetings.
Geospatial Points of Contact	Rescinded SID 155 requirement to report state geospatial data points of contact to FEMA.
Base Level Engineering (BLE) Publishing	Developed a new standard to require all Base Level Engineering (BLE) data be submitted in a consistent format and published through a national viewer. This change included moving the BLE data / database requirements from guidance into the Flood Insurance Rate Map (FIRM) Database Technical Reference.

The standard changes are as follows:

Item #	Doc. Type	SID	Standard Change Description
1	Standard	106	Updated 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 Base Flood Elevations (BFEs).



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Item #	Doc. Type	SID	Standard Change Description
2	Standard	155	Rescinded requirement to report state geospatial data points of contact to FEMA.
3	Standard	128, 346, 374	Updated to include use of evaluation lines on maps in areas based on two-dimensional (2D) modeling.
4	Standard	348	Updated to clarify the hexagon symbology applies to lettered or numbered cross sections, and not unlettered, mapped features.
5	Standards	384	Updated to require consultation with the state NFIP coordinator's office during CCO meeting planning.
6	Standard	385	Updated 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	Updated in concert with SID 385 to reference corresponding Code of Federal Regulations (CFR).
8	Standard	411	Updated to reflect current practice within the program and corresponding CFR.
9	Standard	414, 417, 433, 442	Updated to clarify deliverable requirements for Flood Risk Database components.
10	Standard	516	Updated to reflect the current Mapping Information Platform (MIP) process.
11	Standard	648 (New)	Developed a new standard to require all BLE data be submitted in a consistent format and be published through a national viewer.

Standards

The table below lists new standards and edits to existing standards made during the 2023 annual update to the Policy for Flood Risk Analysis and Mapping.

The updates 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 implementing these standards was chosen to avoid any cost impacts on work underway.

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

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SID	Implementation Description	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.
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 2D 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.	Rescinded

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SID	Implementation Description	Primary Keyword	Original Standard	Revised Standard
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.
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 coordinator's 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.

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SID	Implementation Description	Primary Keyword	Original Standard	Revised Standard
385	Effective Immediately	Fed Register	<p>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.</p>	<p>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 10 days of notification by certified mail of the community CEO, after publication of the Proposed Flood Hazard Determination Notice.</p>
387	Effective Immediately	Fed Register	<p>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.</p> <p>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.</p>	<p>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.</p> <p>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.</p>

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SID	Implementation Description	Primary Keyword	Original Standard	Revised Standard																																																												
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.																																																												
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	<p>The minimum datasets associated with the Flood Risk Project are defined as follows:</p> <table border="1"> <thead> <tr> <th>Flood Risk Product/Dataset</th> <th>New Flood Hazard Analysis¹ Conducted</th> <th>No New Flood Hazard Analysis¹ Conducted</th> </tr> </thead> <tbody> <tr> <td>Flood Risk Database</td> <td>Required</td> <td>Required</td> </tr> <tr> <td>Changes Since Last FIRM (CSLF)</td> <td>Automated²</td> <td>N/A</td> </tr> <tr> <td>Water Surface Elevation Grids</td> <td>Required³</td> <td>Optional³</td> </tr> <tr> <td>Flood Depth Grids</td> <td>Required³</td> <td>Optional³</td> </tr> <tr> <td>Percent Annual Chance & Percent 30-year Chance Grids</td> <td>Required⁴</td> <td>Optional⁴</td> </tr> <tr> <td>Flood Risk Assessment</td> <td>Required⁴</td> <td>Required⁴</td> </tr> <tr> <td>Areas of Mitigation Interest (ADMI)</td> <td>Required</td> <td>Required</td> </tr> <tr> <td>Flood Risk Map</td> <td>Optional</td> <td>Optional</td> </tr> <tr> <td>Flood Risk Report</td> <td>Optional</td> <td>Optional</td> </tr> </tbody> </table>	Flood Risk Product/Dataset	New Flood Hazard Analysis ¹ Conducted	No New Flood Hazard Analysis ¹ Conducted	Flood Risk Database	Required	Required	Changes Since Last FIRM (CSLF)	Automated ²	N/A	Water Surface Elevation Grids	Required ³	Optional ³	Flood Depth Grids	Required ³	Optional ³	Percent Annual Chance & Percent 30-year Chance Grids	Required ⁴	Optional ⁴	Flood Risk Assessment	Required ⁴	Required ⁴	Areas of Mitigation Interest (ADMI)	Required	Required	Flood Risk Map	Optional	Optional	Flood Risk Report	Optional	Optional	<p>Add a table footnote to the Flood Risk Database reading: <i>“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.</i></p> <p>The minimum datasets associated with the Flood Risk Project are defined as follows:</p> <table border="1"> <thead> <tr> <th>Flood Risk Product/Dataset</th> <th>New Flood Hazard Analysis¹ Conducted</th> <th>No New Flood Hazard Analysis¹ Conducted</th> </tr> </thead> <tbody> <tr> <td>Flood Risk Database</td> <td>Required³</td> <td>Required³</td> </tr> <tr> <td>Changes Since Last FIRM</td> <td>Automated²</td> <td>N/A</td> </tr> <tr> <td>Water Surface Elevation Grids</td> <td>Required³</td> <td>Optional³</td> </tr> <tr> <td>Flood Depth Grids</td> <td>Required³</td> <td>Optional³</td> </tr> <tr> <td>Percent Annual Chance & Percent 30-year Chance Grids</td> <td>Required⁴</td> <td>Optional⁴</td> </tr> <tr> <td>Flood Risk Assessment</td> <td>Required⁴</td> <td>Required⁴</td> </tr> <tr> <td>Areas of Mitigation Interest (ADMI)</td> <td>Required</td> <td>Required</td> </tr> <tr> <td>Flood Risk Map</td> <td>Optional</td> <td>Optional</td> </tr> <tr> <td>Flood Risk Report</td> <td>Optional</td> <td>Optional</td> </tr> </tbody> </table>	Flood Risk Product/Dataset	New Flood Hazard Analysis ¹ Conducted	No New Flood Hazard Analysis ¹ Conducted	Flood Risk Database	Required ³	Required ³	Changes Since Last FIRM	Automated ²	N/A	Water Surface Elevation Grids	Required ³	Optional ³	Flood Depth Grids	Required ³	Optional ³	Percent Annual Chance & Percent 30-year Chance Grids	Required ⁴	Optional ⁴	Flood Risk Assessment	Required ⁴	Required ⁴	Areas of Mitigation Interest (ADMI)	Required	Required	Flood Risk Map	Optional	Optional	Flood Risk Report	Optional	Optional
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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.																																																												

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442	Effective Immediately	Flood Risk Database	<p>Non-regulatory flood risk datasets must comply with the following database schema properties defined in the Flood Risk Database Technical Reference:</p> <ul style="list-style-type: none"> • Tables and Feature Classes • Raster Datasets • Spatial Reference Systems • Topology Rules • Relationship Classes • Domains 	<p>Non-regulatory flood risk datasets must comply with the following database schema properties defined in the Flood Risk Database Technical Reference:</p> <ul style="list-style-type: none"> • Tables and Feature Classes • Raster Datasets • Spatial Reference Systems • Topology Rules • Domains
516	Effective Immediately	Due Process	<p>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.</p>	<p>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.</p>
648	Effective for all FY24 studies and beyond	Engineering	N/A	<p>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.</p>

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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 bound

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:

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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.

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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.

Responses to Public Comments Received in July 2023

Several comments were received during the comment period. The comments and FEMA's response are listed by their SIDs below:

SID 648

- **Public Comment:** Hello, we appreciate the opportunity to comment on proposed Standard revisions for the 2023 maintenance cycle.

The [...] Board and our Contractor's are very concerned about ramifications of the proposed new SID 648:

Our general concern is that 2D BLE [Base Level Engineering] studies are going to be held to standards/guidance included in the FIRM Database Technical Reference. This would appear to include both schema requirements as well as passing a FIRM Database DVT [Database Verification Tool] that also includes topology. This is a significant increase in scope/effort for studies at this stage given their size and complexity. FIRM Database standards/guidance would be adhered to as studies move into a regulatory phase, however, this will likely only be a portion of the entire 2D BLE study. This requires a large amount of effort to be invested in having the entire 2D BLE study adhere to regulatory FIRM Database standards/guidance when the majority of the BLE studied streams are remaining as Best Available Information (BAI) and only a portion may go regulatory.

Since we currently have several ongoing BLE projects in various counties across [...], [...] had several coordination discussions with our FEMA regional staff and the PTS [Production and Technical Services] that would be performing the QA/QC. None of us were under the impression that review and approval of the Draft

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DFIRM [Digital Flood Insurance Rate Map] Database Schema for BLE Submittals product would be based on not only the schema checks but also DVT spatial and topology checks. On the E&M CoP [Engineering and Mapping Community of Practice] call, it was stated that the BLE checks would not be subject to all the requirements for the FIRM database yet that has not been our experience. The tool seems to be running the full DVT checks on the BLE DFIRM database (resulting in thousands of errors).

A number of our BLE projects were funded between 2019 and 2022. Several of these projects have been delayed for reasons beyond our control (LiDAR acquisition delays, etc.). The corresponding funding cannot absorb the extra effort required for all BLE to meet the more rigorous standards.

While we understand the need for a standardized schema for the BLE Draft DFIRM Database for the FEMA BLE viewer, it is much more reasonable to have a simplified schema specifically for this purpose. If that is FEMA's intent (and it just hasn't been implemented to date) it would make a big difference to the impacts of this new standard relative to ongoing projects.

- **Response:** The implementation for SID 648 is for Federal Fiscal Years 2024 (FFY24) and beyond, therefore current studies funded and started prior to the effective date of the new standard will not be required to follow this; however, we encourage all BLE studies to follow this database schema as it allow for the data to be shared. We are currently working with CDS to determine impacts and workflow pertaining to DVT and will provide more information in the future.

SID 648

- **Public Comment:** Hello, A comment on the proposed new SID 648:

Please clarify what "Base Level Engineering (BLE) data" refers to. Does this refer to all Hydraulics Data Capture submittals or only a specific subset of those submittals (i.e., specific BLE Analysis Options)?

- **Response:** Base Level Engineering (BLE) is as an automated engineering approach that uses high-tech modeling software and high-resolution ground data to provide communities with a baseline understanding of flood risk. BLE represents the base level of engineering methodology and investment needed for all flood study efforts via the Risk MAP Program. BLE analyses leverage high-resolution topography that meets or exceeds USGS 3-D Elevation Program standards and often apply flood engineering analysis at a large scale as opposed to targeting specific stream reaches. BLE analyses can be conducted at any scale and are often conducted for larger areas (e.g. HUC-8 watersheds), but may be performed at the county or local level. For more information, refer to the BLE Guidance document here: www.fema.gov/sites/default/files/documents/fema_base-level-engineering-analysis-mapping_112022.pdf.