

# Fall 2023 Guidance and Standards Maintenance Cycle Summary

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.

## November 2023 Routine Maintenance

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 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Geospatial Points of Contact	Rescinded SID 155 requirement to report state geospatial data points of contact to FEMA.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 that 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.



# FEMA

The standards changes are as follows:

SID	Description
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).
155	Rescinded requirement to report state geospatial data points of contact to FEMA.
128, 346, 374	Updated to include use of evaluation lines on maps in areas based on two-dimensional (2D) modeling.
348	Updated to clarify the hexagon symbology applies to lettered or numbered cross sections, and not unlettered, mapped features.
384	Updated to require notification of the state NFIP coordinator's office of CCO meetings.
385	Updated to remove duplicative language regarding the Proposed Flood Hazard Determination Notice established in SID 387 and to clarify the method of notification.
387	Updated in concert with SID 385 to reference corresponding Code of Federal Regulations (CFR).
411	Updated to reflect current practice within the program and corresponding CFR.
414, 417, 433, 442	Updated to clarify deliverable requirements for Flood Risk Database components.
516	Updated to reflect the current Mapping Information Platform (MIP) process.
648 (New)	Developed a new standard to require all BLE data be submitted in a consistent format and 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 description, 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](#).

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 Flood Insurance Study (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.	<b>Rescinded</b>

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 Floodway Data Table (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.

SID	Implementation Description	Primary Keyword	Original Standard	Revised Standard
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 10 days of notification by certified mail of the community CEO, after publication of the Proposed Flood Hazard Determination Notice.
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>

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 Analysis<sup>1</sup> Conducted</th> <th>No New Flood Hazard Analysis<sup>1</sup> 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>Automated<sup>2</sup></td> <td>N/A</td> </tr> <tr> <td>Water Surface Elevation Grids</td> <td>Required<sup>3</sup></td> <td>Optional<sup>4</sup></td> </tr> <tr> <td>Flood Depth Grids</td> <td>Required<sup>5</sup></td> <td>Optional<sup>6</sup></td> </tr> <tr> <td>Percent Annual Chance &amp; Percent 10-year Chance Grids</td> <td>Required<sup>7</sup></td> <td>Optional<sup>8</sup></td> </tr> <tr> <td>Flood Risk Assessment</td> <td>Required<sup>9</sup></td> <td>Required<sup>10</sup></td> </tr> <tr> <td>Areas of Mitigation Interest (AMI)</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 <sup>1</sup> Conducted	No New Flood Hazard Analysis <sup>1</sup> Conducted	Flood Risk Database	Required	Required	Changes Since Last FIRM (CSLF)	Automated <sup>2</sup>	N/A	Water Surface Elevation Grids	Required <sup>3</sup>	Optional <sup>4</sup>	Flood Depth Grids	Required <sup>5</sup>	Optional <sup>6</sup>	Percent Annual Chance & Percent 10-year Chance Grids	Required <sup>7</sup>	Optional <sup>8</sup>	Flood Risk Assessment	Required <sup>9</sup>	Required <sup>10</sup>	Areas of Mitigation Interest (AMI)	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 Analysis<sup>1</sup> Conducted</th> <th>No New Flood Hazard Analysis<sup>1</sup> Conducted</th> </tr> </thead> <tbody> <tr> <td>Flood Risk Database</td> <td>Required</td> <td>Required</td> </tr> <tr> <td>Changes Since Last FIRM</td> <td>Automated<sup>2</sup></td> <td>N/A</td> </tr> <tr> <td>Water Surface Elevation Grids</td> <td>Required<sup>3</sup></td> <td>Optional<sup>4</sup></td> </tr> <tr> <td>Flood Depth Grids</td> <td>Required<sup>5</sup></td> <td>Optional<sup>6</sup></td> </tr> <tr> <td>Percent Annual Chance &amp; Percent 10-year Chance Grids</td> <td>Required<sup>7</sup></td> <td>Optional<sup>8</sup></td> </tr> <tr> <td>Flood Risk Assessment</td> <td>Required<sup>9</sup></td> <td>Required<sup>10</sup></td> </tr> <tr> <td>Areas of Mitigation Interest (AMI)</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 <sup>1</sup> Conducted	No New Flood Hazard Analysis <sup>1</sup> Conducted	Flood Risk Database	Required	Required	Changes Since Last FIRM	Automated <sup>2</sup>	N/A	Water Surface Elevation Grids	Required <sup>3</sup>	Optional <sup>4</sup>	Flood Depth Grids	Required <sup>5</sup>	Optional <sup>6</sup>	Percent Annual Chance & Percent 10-year Chance Grids	Required <sup>7</sup>	Optional <sup>8</sup>	Flood Risk Assessment	Required <sup>9</sup>	Required <sup>10</sup>	Areas of Mitigation Interest (AMI)	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.																																																												

SID	Implementation Description	Primary Keyword	Original Standard	Revised Standard
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"> <li>• Tables and Feature Classes</li> <li>• Raster Datasets</li> <li>• Spatial Reference Systems</li> <li>• Topology Rules</li> <li>• Relationship Classes</li> <li>• Domains</li> </ul>	<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"> <li>• Tables and Feature Classes</li> <li>• Raster Datasets</li> <li>• Spatial Reference Systems</li> <li>• Topology Rules</li> <li>• Domains</li> </ul>
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>

## Guidance, Technical References, and Other Documents

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

Guidance Documents	Update Description
Accepting Numerical Models for Use in the NFIP	Updated to refine the process for requesting new models to be added (or potentially removed) from the list.
Appeal and Comment Processing	Updated to clarify timing requirements for appeal submissions. Updated to correct a typo in the reference to SID 600.
Base Level Engineering	Updated to move the BLE data / database submittal requirements into the FIRM Database Technical Reference.
Base Map and FIRM Panel Layout	Updated to clarify typical base map requirements when using Automated Map Production (AMP).
Coastal Flood Frequency and Extreme Value Analysis, Coastal Statistical Simulation Methods	Updated to refresh URLs and add information about certain techniques and resources.
Coastal Floodplain Mapping, Combined Coastal and Riverine Floodplain Mapping	Updated citations, references, and improved readability.
Coastal Overland Wave Propagation	Updated to refresh URLs and improve certain figures and language.
Coastal Wave Runup and Overtopping	Updated to add equations for analysis and better organize the way equations are presented in the document. Update is an overall restructuring to improve readability and incorporate Eurotop as an approved runup methodology.
Elevation	Note added for precautions related to hydro-flattening.
Federal Register Notices	Updated to better describe types of notices and processes and to ensure alignment with current practice and CFR.
FIRM Database	Updated description of AMP. Added guidance for populating Study_Info for Tribal Nations. Added guidance for populating units for Study_Info and L_Survey_Pt.
FIRM Index	Updated to align with recent AMP tool release changes which impact the output index panels.
Floodway Analysis and Mapping	Updated to clarify information regarding model comparisons for no-rise floodway analysis.
Geospatial Data Coordination	Updated to reflect rescinded SID 155 and ensure consistency with current practice.



Guidance Documents	Update Description
Hydraulics: Two-Dimensional Analysis	Updated several sections to clarify when changes are required within 2D models.
Ice Jam	Updated 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 and indirect analysis methods.
Levees	Updated to align with other aspects of the Risk MAP Program pertaining to levees.
Mapping BFEs on FIRMs	Updated to improve clarity, ensure consistency with standards and other guidance, and provide details regarding FIRM Database features and schema in specific scenarios.
Mapping Information Platform (MIP)	Updated to align to current standard operating procedures including RAM access, studies project management and administration, and data capture/upload.
Mitigation Planning Technical Assistance	Updated to incorporate new best practices and case studies, improve usability, and correct broken URLs/links.
MT-2 Requests	Updated to align with current levee guidance and other updates being proposed for this cycle.
Notice-to-User Corrections	Updated to include flowchart graphic for submittal procedures.
Post-Preliminary Due Process	Updated to strengthen language regarding the 30-day comment period and updating to reflect changes in SID 600.
Stakeholder Engagement: Preliminary Production Process	Updated to incorporate viewer enhancements.
Technical Support Data Notebook and Flood Elevation Determination Docket	Updated references, clarified review and submittal requirements for FEDD files, and removed the table of Stakeholder Engagement components.
Vertical Datum Conversion	Updated 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.

Technical References	Update Description
Data Capture	Updated to remove the FRD geodatabase file format from the FRD Deliverable, and to clarify requirements for Revalidation letters and deliverable folder structures.
Flood Risk Database (FRD)	Updated to remove the FRD geodatabase file format from the FRD Deliverable.
Domain Tables	Updated domain D_Mtg_Typ to remove extra CCO Meeting options; updating "INTLFT" to "FT" in Section 2.50 (D_Proj_Unit); and added Tribal Nation Domains to allow for more accurate Title block labeling (D_Jurisdiction_Typ and D_Study_Prefix).
FIRM Database	Updated to add requirements for BLE data / database submittals as well as changes to the STUDY INFO table to include more options for Tribal Nations.
Flood Insurance Study (FIS) Report	Updated to align the FIRM Index specifications with changes being proposed to the FIRM Index Guidance.

Templates	Update Description
FIS Report Template	Updated section 3.1 to add text for Prelim Stamp on Cover to match other regulatory products; updated section 4.3.23 to replace sample Floodway Data Table (FDT); and updated section 4.3.29 to align with new domains.
Flood Risk Products Checklist	Updated to remove the FRD geodatabase file format from the FRD Deliverable.
Levee Letters	Updated overall group of letters and templates to align with current levee guidance and standards. This included proposed rescission of many outdated items, but also included updated 65.10 submission and PAL Progress Report templates. Please note these are posted as draft PDF documents since they are fillable forms.

Type	Update Description
<p><b>Guidance</b></p> <p>Elevation Guidance, FIRM Database Guidance, National Flood Hazard Layer (NFHL) Guidance</p> <p><b>Technical References</b></p> <p>FIRM Database Technical Reference, Flood Risk Database Technical Reference, Domain Tables Technical Reference</p> <p><b>Templates</b></p> <p>XML Template Files, Flood Risk Database Schema, Flood Risk Products (FRP) QC Checklist and Addendum, FIS Report Template</p>	<p>Updated vertical units, 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 Dec. 31, 2022. This did 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.</p>

## SID 417 TABLE COMPARISON

Original Table:

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

<sup>1</sup> "New Flood Hazard Analysis" = flooding sources receiving regulatory-level analyses

<sup>2</sup> 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.

<sup>3</sup> 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

<sup>4</sup> Can be produced for flooding sources not receiving new analyses if based on effective data

<sup>5</sup> Riverine only

<sup>6</sup> 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

<sup>7</sup> Assessments are performed for the flood events with available depth grids. See Flood Risk Database Technical Reference for more information.

<sup>8</sup> Analysis can be conducted at census block or user-defined facility level.

Revised Table:

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

<sup>1</sup> New Flood Hazard Analysis = flooding sources receiving regulatory-level analyses

<sup>2</sup> Shapefiles and GeoTIFFS are required for the submission. The FRD data in geodatabase format is optional and only required if specifically contracted.

<sup>3</sup> 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.

<sup>4</sup> Riverine studies: 10%, 4%, 2%, 1%, 1%+, and 0.2% annual-chance floods

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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

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