Flood Risk Analysis and Mapping *(Rev. 14)*

FEMA Policy #204-078-1

BACKGROUND

This policy is applicable to FEMA staff delivering the Risk Mapping, Assessment, and Planning (Risk MAP) program, all mapping partners (contractors, cooperating technical partners, and other federal agencies) who perform flood risk projects on behalf of FEMA, and the National Flood Insurance Program (NFIP). Additionally, this policy may be pertinent to states, tribes, territories, local communities, homeowners and their consultants who are interested in the Flood Insurance Rate Map (FIRM) process.

This policy updates and supersedes the Standards for Flood Risk Analysis and Mapping – FP 204-078-1 (Rev. 13) approved on Jan. 9, 2023.

The changes with this revision are:

Table 1: 2023 Maintenance Cycle: Standard Updates

Standard Identification Number (SIDs)	Standards Change 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 BFEs.
128, 346, 374	Updated to include use of evaluation lines on maps in areas based on two-dimensional (2D) modeling.
155	Rescinded requirement to report state geospatial data points of contact to FEMA.
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	Developed a new standard to require that all BLE data be submitted in a consistent format and published through a national viewer.

PURPOSE

The purpose of this policy is to enable consistent performance by identifying the standards that must be followed in the delivery of the Risk MAP program. These standards govern the performance of flood risk projects, processing of letters of map change and related Risk MAP activities.

PRINCIPLES

1. Ensure consistency in the deliverables of all flood risk projects so that they can support the NFIP and all its stakeholders.

2. Ensure a standard level of quality is met for all deliverables of a flood risk project.

3. Provide appropriate flexibility to FEMA regional offices and mapping partners to accommodate regional and local variability across the country.

4. Enhance the credibility of the NFIP and all flood risk mapping efforts.

REQUIREMENTS

Flood risk projects, regulatory NFIP map changes and other Risk MAP activities shall be performed in a consistent manner resulting in quality data and deliverables. The attached set of standards shall be followed in the delivery of Risk MAP.

Standards must be implemented based on the effective date and implementation description. The implementation description is chosen to avoid cost or scope impacts on existing task orders, cooperative agreements, or interagency agreements. If the implementation of a new standard as mandated by this policy requires a change to an existing agreement, coordinate with FEMA to modify the existing agreement as necessary. New standards may be implemented sooner in coordination with the FEMA project officer, contracting officer's representative and the contracting officer.

FEMA publishes substantial additional guidance to support implementation of and compliance with these standards. Users of these standards should also reference this guidance published on FEMA's web site at www.fema.gov/flood-maps/guidance-reports/guidelines-standards.

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Date: 2023.11.21 09:31:03 -08'00'

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ADDITIONAL INFORMATION

Review Cycle

FEMA POLICY: Standards for Flood Risk Analysis and Mapping #FP 204-078-1 (Rev. 14) will be reviewed, reissued, revised, or rescinded annually.

Authorities

The mapping program for the NFIP, implemented through Risk MAP, is established through the National Flood Insurance Act of 1968, as amended, and the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12), as amended (Title 42 United States Code 4001 et seq.). The mapping program is governed by the implementing regulations at Code of Federal Regulations - Title 44 Code of Federal Regulations parts 59-72. The statutes and regulations establish the core requirements for the mapping program.

This policy represents FEMA's interpretation of these statutory and regulatory requirements and/or sets forth standard operating procedures. The policy itself does not impose legally enforceable rights and obligations but sets forth a standard operating procedure or agency practice that FEMA employees and contractors follow to be consistent, fair, and equitable in the implementation of the agency's authorities.

These standards are to be applied in addition to the legal requirements set out in the applicable statutes and regulations. For the most part, the applicable statutory and regulatory requirements are not repeated in this policy. Readers must refer to the statutes and regulations in addition to these standards.

Definitions

Flood risk projects are projects implemented under the Risk MAP program to engage with communities and provide flood risk information.

Guidance is a recommended method to meet the standard. Guidance assumes a working knowledge of common industry terminology and methodologies. Accepted approaches are not limited to this recommended approach; mapping partners may use other methods to meet or exceed the standard.

Guidelines and Standards Steering Committee is comprised of FEMA headquarters and regional employees and contractors responsible for maintenance and coordination of Risk MAP standards and guidance.

Mapping partners are FEMA Production and Technical Services Contractors, Cooperating Technical Partners, and Other Federal Agencies (OFA) performing tasks on a flood risk project.

Program standards are a required element that supports the vision, goals and objectives of the program. Exceptions must be obtained through coordination with FEMA headquarters Risk Analysis Division leadership.

Risk MAP is the FEMA program that maintains flood maps for the NFIP and works with local governments to increase awareness of flood risk and provide flood risk information that leads to actions to reduce risk.

Standards exceptions are project-specific variances to Risk MAP standards, approved by appropriate Risk MAP officials.

Working standards are required elements of a project that are typically applied by specialists (such as engineers, planners, GIS specialists, etc.).

Monitoring and Evaluation

Compliance will be monitored through the Risk MAP Quality Assurance Management Plan.

Questions

Direct questions by email to the shared FEMA RMD Guidance & Standards inbox.

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Appendix A

Acronyms and Abbreviations Used in the Risk MAP Standards

2D	Two-Dimensional
AoMI	Areas of Mitigation Interest
AMP	Automated Map Production
BFE	Base Flood Elevation
BLE	Base Level Engineering
BW-12	Biggert-Waters Flood Insurance Reform Act of 2012
CBRS	Coastal Barrier Resources System
CCO	Consultation Coordination Officer
CDS	Customer and Data Services
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
CID	Community Identifier
CIS	Community Information System
CLOMA	Conditional Letter of Map Amendment
CLOMR	Conditional Letter of Map Revision
CLOMR-F	Conditional Letter of Map Revision based on Fill
CNMS	Coordinated Needs Management Strategy
CRS	Community Rating System
CSLF	Changes Since Last FIRM
CTP	Cooperating Technical Partner
CVA	Consolidated Vertical Accuracy
DBF	Database File
DEM	Digital Elevation Model
DFIRM	Digital Flood Insurance Rate Map
DVT	Database Verification Tool
ESRI	Environmental Systems Research Institute
ETJ	Extraterritorial Jurisdiction
FBFM	Flood Boundary and Floodway Map
FBS	Floodplain Boundary Standard
FDT	Floodway Data Table
FEDD	Flood Elevation Determination Docket
FEMA	Federal Emergency Management Agency
FHBM	Flood Hazard Boundary Map
FHD	Flood Hazard Determination

FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FRD	Flood Risk Database
FRM	Flood Risk Map
FRR	Flood Risk Report
FVA	Fundamental Vertical Accuracy
FWS	U.S. Fish & Wildlife Service
GCS	Geographic Coordinate System
GIS	Geographic Information System
H&H	Hydrologic & Hydraulic
HFIAA	Homeowner Flood Insurance Affordability Act of 2014
HQ	Headquarters
HUC	Hydrologic Unit Code
KDP	Key Decision Point
LFD	Letter of Final Determination
LIDAR	Light Detection and Ranging or Laser Imaging Detection and Ranging
LiMWA	Limit of Moderate Wave Action
LLPT	Local Levee Partnership Team
LODR	Letter of Determination Review
LOMA	Letter of Map Amendment
LOMC	Letter of Map Change
LOMR	Letter of Map Revision
LOMR-F	Letter of Map Revision based on Fill
MAF/TIGER	Master Address File/Topologically Integrated Geographic Encoding and Referencing
MIP	Mapping Information Platform
MSC	Map Service Center
MXD	ArcMap Document (file extension)
NAD 83	North American Datum of 1983
NAVD 88	North American Vertical Datum of 1988
NFHL	National Flood Hazard Layer
NFIP	National Flood Insurance Program
NGO	Non-Governmental Organization
NPS	Nominal Pulse Spacing
NSRS	National Spatial Reference System
NSSDA	National Standard for Spatial Data Accuracy
NTU	Notice-to-User
NVA	Non-vegetated Vertical Accuracy
NVUE	New, Validated, or Updated Engineering

OFA	Other Federal Agency
OPA	Otherwise Protected Areas
PAL	Provisionally Accredited Levee
PDF	Portable Document Format
PFD	Primary Frontal Dune
PLSS	Public Land Survey System
PMR	Physical Map Revision
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QR	Quality Review
RAM	Risk Analysis and Management
RFHL	Regional Flood Hazard Layer
RPO	Regional Project Officer
SFHA	Special Flood Hazard Area
SHMO	State Hazard Mitigation Officer
SHP	Shapefile (file extension)
SOMA	Summary of Map Actions
SOP	Standard Operating Procedure
SRP	Scientific Resolution Panel
SVA	Supplemental Vertical Accuracy
TIN	Triangulated Irregular Network
TSDN	Technical Support Data Notebook
TWL	Total Water Level
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VVA	Vegetated Vertical Accuracy
WSEL	Water Surface Elevation
XML	Extensible Markup Language (file extension)
XS	Cross Section

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Appendix B

Standards for Flood Risk Analysis and Mapping

Table 2: Standards for Flood Risk Analysis and Mapping

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
1	4/1/2003	Existing standard Already implemented	Project Initiation	Program Standard	All Flood Risk Projects and LOMCs must be tracked in the MIP.
2	4/1/2003	Existing standard Already implemented	Project Initiation	Working Standard	A Project Management Team shall be formed as soon as a Flood Risk Project is initiated, and this team shall manage the project for its entire lifecycle.
3	4/1/2003	Existing standard Already implemented	Project Initiation	Program Standard	When a community is initially considered for a Flood Risk Project involving a new or revised flood hazard analysis, FEMA must establish and maintain a community case file per Code of Federal Regulations Title 44 CFR 66.3.
4	10/1/2009	Existing standard Already implemented	Project Initiation	Program Standard	All newly initiated Flood Risk Projects must be watershed-based, except for coastal and small-scale Flood Risk Projects related to levee accreditation status.
5	11/30/2019	Existing standard Already implemented	Project Planning	Program Standard	No flooding source will receive a lower level of regulatory flood map product than what currently exists on effective maps.
6	11/30/2015	Existing standard Already implemented	CNMS	Working Standard	Both flood hazard validation and needs assessment processes must follow the CNMS Technical Reference and the results must be stored within the national CNMS database.
7	6/17/2011	Existing standard Already implemented	CNMS	Working Standard	Community-specific requests to update the FIRM outside of the NVUE validation process and LOMR process must be documented in the CNMS database as mapping requests for the FEMA Regional office review and consideration.
8	6/17/2011	Existing standard Already implemented	CNMS	Working Standard	The CNMS database shall be updated for engineering reference information, validation status, and map issues throughout all pertinent phases of the Flood Risk Project.

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SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
9	6/17/2011	Existing standard Already implemented	CNMS	Program Standard	The CNMS database shall be the sole authority for reporting flood map update needs.
10	6/17/2011	Existing standard Already implemented	CNMS	Working Standard	For a studied flooding source to go from 'UNVERIFIED' to '"VALID" status within the CNMS database, the flooding source must be re-analyzed.
11	6/17/2011	Existing standard Already implemented	CNMS	Working Standard	When the last assessment date of the Modernized or Paper Inventory exceeds five years, the Validation Status shall be changed by FEMA Headquarters (HQ) or its designee to 'Unknown' and shall require reassessment.
12	6/17/2011	Existing standard Already implemented	Project Planning	Program Standard	Each fiscal year, the regions shall have a plan to evaluate all CNMS flooding sources within a 5-year period.
13	6/17/2011	Existing standard Already implemented	CNMS	Working Standard	NVUE status must be reported by each FEMA Region to FEMA HQ at least quarterly.
14	6/17/2011	Existing standard Already implemented	Project Planning	Working Standard	Regional decisions to prioritize, assess, and perform engineering analyses along various flooding sources must be supported by the data contained in CNMS.
15	4/1/2003	Existing standard Already implemented	Coordination	Working Standard	FEMA shall provide technical and programmatic assistance and prepare responses to inquiries received from mapping partners, NFIP constituents and other interested project stakeholders.
16	6/11/2011	Existing standard Already implemented	Project Planning	Program Standard	Each flooding source must be evaluated in CNMS at least once within a 5-year period.
17	11/30/2019	Effective immediately	Project Planning	Working Standard	Discovery is a mandatory element of all Flood Risk Projects. All watershed- based Discovery must be initiated at a geographic footprint that encompasses the hydrologic characteristics of the area of interest. At the start of Discovery, the delivery may be scaled to engage the appropriate level of project stakeholders based on community need and risk.
18	7/1/2011	Existing standard Already implemented	Stakeholder Engagement	Working Standard	All communities and tribes must be given an opportunity to review and make corrections to any data and information collected during Discovery prior to distribution of final Discovery products.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
19	7/1/2011	Existing standard Already implemented	Stakeholder Engagement	Working Standard	Flood Risk Project stakeholders must be contacted prior to the Discovery Meeting.
20	11/30/2019	Effective Immediately	Stakeholder Engagement	Working Standard	Discovery must engage all communities and the appropriate level of project stakeholders identified within the project area and must engage practitioners across relevant disciplines.
21	7/1/2011	Existing standard Already implemented	Discovery	Working Standard	The types of data and information obtained during Discovery must demonstrate a holistic picture of flooding issues, flood risk, and flood mitigation priorities, opportunities, efforts and capabilities.
22	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year 2013	Project Planning	Program Standard	Decisions to perform additional analyses, data development activities, and/or community engagement within the Flood Risk Project area must be supported by the outcomes from Discovery. These decisions shall be communicated to project stakeholders prior to executing those activities.
23	11/30/2019	Effective Immediately	Discovery	Working Standard	Discovery-related data that incorporates appropriate background research must be provided to the communities and tribes prior to the Discovery Meeting and presented at the Discovery Meeting to facilitate discussions.
24	11/30/2019	Effective Immediately	Discovery	Working Standard	A Discovery Report and associated data will be provided to the communities and tribes after the Discovery Meeting.
26	11/30/2019	Effective Immediately	Discovery	Working Standard	A Discovery Report must include a section listing the data and information collected, when they were received, data sources, and an analysis of the data and information. It must also include the outcomes and decisions made at the Discovery Meeting.
27	7/1/2011	Existing standard Already implemented	Discovery	Program Standard	A Discovery Meeting with project stakeholders is a required activity of Discovery.
29	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year 2013	Discovery	Program Standard	During Discovery, data must be identified that illustrates potential changes in flood elevation and mapping that may result from the proposed project scope. If available data does not clearly illustrate the likely changes, an analysis is required that estimates the likely changes. This data and any associated analyses must be shared and results must be discussed with stakeholders.
30	7/1/2011	Existing standard Already implemented	Stakeholder Engagement	Working Standard	The Flood Risk Project scope of work must be developed in coordination with project stakeholders. The purchased Flood Risk Project scope of work must be shared with project stakeholders.

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SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
31	7/1/2011	Existing standard Already implemented	Stakeholder Engagement	Working Standard	Discovery must include a discussion with stakeholders regarding risk identification, mitigation capabilities and actions, planning, and risk communication.
33	7/1/2011	Existing standard Already implemented	Stakeholder Engagement	Working Standard	For coastal Flood Risk Projects that will begin with a storm surge analysis, stakeholder coordination must occur by the end of the storm surge study effort and continue throughout the remainder of the coastal Flood Risk Project.
34	7/1/2011	Existing standard Already implemented	Stakeholder Engagement	Working Standard	When storm surge analyses are included in a Flood Risk Project, Discovery efforts must include a discussion of how storm surge estimates have changed since the effective Flood Risk Project.
35	7/1/2011	Existing standard Already implemented	Stakeholder Engagement	Working Standard	The FEMA Regional Office must be consulted as to how tribal nations should be included in the overall Discovery efforts.
36	4/11/2019	Effective immediately	Coordinated Needs Management Strategy (CNMS)	Program Standard	A Coordinated Needs Management Strategy (CNMS) database that is compliant with Key Decision Point (KDP) questionnaires and the CNMS Technical Reference must be updated and submitted at the completion of Discovery, at Project Initiation, at Preliminary Issuance, at Revised Preliminary Issuance (if applicable), and at Letter of Final Determination Issuance (LFD). The CNMS database should also be updated during post-effective phases: at Letter of Map Revision (LOMR) effective date (if applicable), and for the 5- Year validation assessment.
40	11/30/2022	Effective Immediately	Elevation Data	Program Standard	New elevation data purchased by FEMA must comply with the USGS National Geospatial Program Lidar Base Specification 2022 rev. A or more current, except hydro-flattening is not required and a classified point cloud and a bare earth DEM deliverable are not required.
41	11/30/2022	Effective Immediately	Elevation Data	Working Standard	Field surveys and aerial data acquisition must be reportable and referenceable in the National Spatial Reference System (NSRS) for all areas in the United States where the NSRS is defined and accessible. Within the conterminous U.S. the geometric North American Datum of 1983 (NAD 83 (2011) epoch 2010.0), and the orthometric North American Vertical Datum of 1988 (NAVD 88) are required.
42	4/1/2003	Existing standard Already implemented	Elevation Data	Working Standard	All ground and structure surveys must be certified by a registered professional engineer or a licensed land surveyor.

<table>
<tr><th>SID #</th><th>Effective Date</th><th>Implementation Description</th><th>Category</th><th>Standard Type</th><th>Standard</th></tr>
<tr><td>43</td><td>5/31/2016</td><td>Implemented for all projects that have not yet begun data development</td><td>Elevation Data</td><td>Working Standard</td><td>All updated flood hazard data shown on the Flood Insurance Rate Map (FIRM), in the FIRM Database and Flood Insurance Study (FIS) must be based on the most accurate existing topographic data available to FEMA before the start of data development and the data must have documentation that it meets the following vertical accuracy requirements:

Vertical Accuracy Requirements based on Flood Risk and Terrain Slope within the Floodplain being Mapped
<table><tr><th>Level of Flood Risk</th><th>Typical Slopes</th><th>Specification Level</th><th>Vertical Accuracy: (FVA or NVA*) / (CVA or VVA**)</th><th>Lidar Nominal Pulse Spacing (NPS)</th></tr><tr><td>High (Deciles 1, 2, 3)</td><td>Flattest</td><td>Highest</td><td>24.5 cm/36.3 cm</td><td>≤ 2 meters</td></tr><tr><td>High (Deciles 1, 2, 3)</td><td>Rolling or Hilly</td><td>High</td><td>49.0 cm/72.6 cm</td><td>≤ 2 meters</td></tr><tr><td>High (Deciles 2, 3, 4, 5)</td><td>Hilly</td><td>Medium</td><td>98.0 cm/145 cm</td><td>≤ 3.5 meters</td></tr><tr><td>Medium (Deciles 3, 4, 5, 6, 7)</td><td>Flattest</td><td>High</td><td>49.0 cm/72.6 cm</td><td>≤ 2 meters</td></tr><tr><td>Medium (Deciles 3, 4, 5, 6, 7)</td><td>Rolling</td><td>Medium</td><td>98.0 cm/145 cm</td><td>≤ 3.5 meters</td></tr><tr><td>Medium (Deciles 3, 4, 5, 6, 7)</td><td>Hilly</td><td>Low</td><td>147 cm/ 218 cm</td><td>≤ 5 meters</td></tr><tr><td>Low (Deciles 7, 8, 9, 10)</td><td>All</td><td>Low</td><td>147 cm/ 218 cm</td><td>≤ 5 meters</td></tr></table>*Fundamental Vertical Accuracy (FVA) and NVA are reported at the 95% Confidence Level.
**Consolidated Vertical Accuracy (CVA) and VVA are reported at the 95th Percentile.

If data is not available that meets these requirements, new elevation data must be obtained (Refer to Figure 1 in Appendix C).</td></tr>
<tr><td>44</td><td>1/1/2013</td><td>Existing standard
Already implemented</td><td>Elevation Data</td><td>Working Standard</td><td>FEMA requires all elevation data to be processed to the bare earth terrain in the vicinity of floodplains that will require hydraulic modeling.</td></tr>
<tr><td>45</td><td>9/27/2010</td><td>Existing standard
Already implemented</td><td>Elevation Data</td><td>Working Standard</td><td>FEMA does not require the elevation data to be hydro-flattened, as specified in USGS Lidar Specification.</td></tr>
<tr><td>46</td><td>11/30/2015</td><td>All Fiscal Year 2016 task orders that include new lidar collection</td><td>Elevation Data</td><td>Working Standard</td><td>When a classified point cloud and a Digital Elevation Model (DEM) deliverable are included in a new elevation data collection, checkpoints for Vegetated Vertical Accuracy (VVA) must fall within the DEM footprint.</td></tr>
<tr><td>49</td><td>1/1/2013</td><td>Existing standard
Already implemented</td><td>Elevation Data</td><td>Working Standard</td><td>All FEMA-funded aerial mapping must be certified by a licensed professional or certified photogrammetrist.</td></tr>
<tr><td>54</td><td>7/31/2013</td><td>Implemented with all new flood risk projects initiated in Fiscal Year2013</td><td>H&H Analyses</td><td>Working Standard</td><td>Where flood elevations are produced from a hydraulic model, they can be published as BFEs unless the responsible engineer documents why they should not be issued.</td></tr>
</table>

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
56	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013	Alluvial Fan	Program Standard	Written approval from the FEMA Regional Risk Analysis Branch Chief regarding the alluvial fan methodology must be obtained before the commencement of full analysis. To inform this decision, sufficient field data and analysis and records of community engagement relative to the scope and methodology must be provided.
57	5/31/2016	Existing standard Already implemented	Engineering	Program Standard	The regulatory products and non-regulatory flood risk products must be based on H&H or coastal analyses using existing ground conditions in the watershed and floodplain. The multiple profile and floodway runs must have the same physical characteristics in common for existing ground conditions. However, a community may choose to include flood hazard information that is based on future conditions on a FIRM (shown as shaded Zone X); in an FIS Report; or non-regulatory flood risk products in addition to the existing- conditions.
59	11/1/2009	Existing standard Already implemented	H&H Analyses	Working Standard	Hydrologic and hydraulic analyses must be calibrated using data from well-documented flood events, if available.
61	11/1/2009	Existing standard Already implemented	Engineering	Program Standard	Engineering analyses must be documented and easily reproducible and must include study methods, reasoning for method selection, input data and parameters, sources of data results, and justifications for major changes in computed flood hazard parameters.
62	4/11/2019	Effective immediately	H&H Analyses	Program Standard	New or updated flood hazard data used for the regulatory products must be supported by modeling and/or sound engineering judgment. All regulatory products must be in agreement.
65	11/1/2009	Existing standard Already implemented	Base Flood Elevations (BFEs)	Working Standard	BFEs must agree with those of other contiguous studies of the same flooding source within 0.5 foot, unless it is demonstrated that it would not be appropriate. Please see 44 C.F.R. § 65.6(a)(2).
66	12/21/2020	Effective Immediately	Flood Profiles	Working Standard	Each significant split or diverted flow path modeled in 1D and mapped as Zone AE or AH must be plotted with individual Flood Profiles.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
69	12/21/2020	Effective Immediately	Floodway	Program Standard	Floodway surcharge values must be less than or equal to 1.0 foot. If the state (or other jurisdiction) has established more stringent regulations, these regulations take precedence over the NFIP regulatory standard. Further reduction of maximum allowable surcharge limits can be used if required or requested and approved by the communities impacted.
70	11/1/2009	Existing standard Already implemented	Floodway	Working Standard	If a stream forms the boundary between two or more states and/or tribes, either the 1.0- foot maximum allowable rise criterion or existing floodway agreements between the parties shall be used.
71	11/30/2019	For all projects where the engineering work has not yet begun	Floodway	Working Standard	New or revised floodway data must match any effective floodways at the limits of the Flood Risk Project.
73	12/21/2020	Effective Immediately	Floodway	Working Standard	A methodology based on equitable consideration of both overbanks must be used to establish the minimal regulatory floodway. Variations to this approach must be made in coordination with FEMA and the impacted communities.
74	4/11/2019	Effective immediately	H&H Analyses	Program Standard	The hydrologic, hydraulic, and coastal analyses and the published regulatory products must be certified by a registered professional engineer.
75	12/21/2020	Effective Immediately	FIS Tables	Working Standard	For each stream where a floodway was determined under the scope of work, a Floodway Data Table compliant with the FIS Report Technical Reference must be prepared as part of the hydraulic analysis. The Floodway Data Table must contain an entry for each lettered, mapped cross section or evaluation line and must include the information outlined in the FIS Report Technical Reference.
76	11/1/2009	Existing standard Already implemented	H&H Analyses	Working Standard	If previously-modeled storage areas are removed or filled, the models must be updated to reflect the loss in storage.
77	12/21/2020	Effective Immediately	Floodway	Working Standard	Floodway computations for tributaries must be developed without consideration of backwater from confluences unless a coincident frequency analysis or detailed historical observations prove otherwise. If either of these exceptions is used, it must be done in coordination with FEMA.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
78	12/21/2020	Effective Immediately	Flood Profiles	Working Standard	The water-surface profiles of different flood frequencies modeled in 1D must not cross one another, unless technical justification is provided in coordination with FEMA.
79	12/21/2020	Effective Immediately	Flood Profiles	Working Standard	Water-surface elevations shown on the Flood Profiles for 1D models shall not rise from an upstream to downstream direction, unless technical justification is provided in coordination with FEMA.
80	11/1/2009	Existing standard Already implemented	Profile Baseline	Working Standard	If a flow path other than the stream centerline is more representative of the direction of flow, the case must be documented and the flow path shown and labeled on the FIRM as the "Profile Baseline". Flow distances in one- dimensional models must be referenced to the profile baseline.
82	9/28/2010	Existing standard Already implemented	Project Management	Program Standard	Final invoices shall not be paid until a TSDN is submitted, and certification is provided that contract or grant requirements are met.
83	9/28/2010	Existing standard Already implemented	Project Planning	Program Standard	The FEMA Regional staff initiating a Flood Risk Project shall first engage all stakeholders in order to fully understand the impacted communities, leverage other FEMA activities in the area, and thereby avoid duplication of benefits through funding to Cooperating Technical Partners.
84	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013	H&H Analyses	Program Standard	• All riverine engineering Flood Risk Projects shall consist of a hydraulic model with multiple frequencies: 0.2-percent, 1-percent, 2-percent, 4-percent, and 10-percent-annual-chance exceedance events. • In addition, the “1-percent plus” flood elevation shall be modeled for all riverine analyses. The 1-percent plus flood elevation is defined as a flood elevation derived by using discharges that include the average predictive error for the regression equation discharge calculation for the Flood Risk Project. This error is then added to the 1-percent annual chance discharge to calculate the new • 1-percent plus discharge. The upper 84-percent confidence limit is calculated for Gage and rainfall-runoff models for the 1-percent annual chance event. • The “1-percent plus” flood elevation must be shown on the Flood Profile in the FIS Report to best understand and communicate the uncertainty of the flood elevation. • The mapping of the “1-percent plus” floodplain is optional and will only be produced when it is determined to be appropriate.

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SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
85	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013	Project Planning	Working Standard	Deviations from standards must be approved by FEMA, tracked for exception reporting, and documented.
86	2/1/2007	Existing standard Already implemented	Coastal - Analysis	Working Standard	For coastal Flood Risk Projects, wave runup analyses shall compute the wave runup elevation as the value exceeded by 2-percent of the runup events.
87	5/1/2012	Existing standard Already implemented	Coastal - Data	Working Standard	For coastal Flood Risk Projects, intermediate data submissions to FEMA are required at key milestones during the coastal analysis process.
88	5/1/2012	Existing standard Already implemented	Coastal - Analysis	Working Standard	All coastal processes and flooding sources that contribute to the 1-percent- annual-chance flood condition both at a regional and local scale must be considered.
89	12/21/2020	Effective Immediately	Coastal - Analysis	Working Standard	For coastal Flood Risk Projects, non-levee coastal structures must be evaluated and the profile adjusted as necessary to reflect expected storm impacts on the structure for the purpose of establishing appropriate risk zones for regulatory products.
90	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013.	Engineering	Program Standard	Methods and models used to evaluate the flood hazard must be technically reliable, must be appropriate for flood conditions and produce reasonable results. All computer models must adhere to 44 C.F.R. § 65.6 (a)(6).

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
91	2/28/2018	Effective immediately	Coastal - Mapping	Program Standard	1. For coastal Flood Risk Projects, VE Zones are identified using one or more of the following criteria for the 1-percent flood conditions: 2. The breaking wave height zone occurs where 3-foot or greater wave heights could occur (this is the area where the wave crest profile is 2.1 feet or more above the static water elevation) (REQUIRED) 3. The primary frontal dune zone, as defined in 44 C.F.R. § 59.1 of the NFIP regulations (REQUIRED) 4. The wave runup zone occurs where the (eroded) ground profile is 3.0 feet or more below the Total Water Level, and 3.0 feet of wave runup height occurs in the analysis along the profile (REQUIRED) 5. The wave overtopping splash zone is the area landward of the crest of an overtopped barrier, in cases where the potential wave runup exceeds the barrier crest elevation by 3.0 feet or more and exceeds 1.0 cfs/ft (REQUIRED) 6. The high-velocity flow zone is landward of the overtopping splash zone (or area on a sloping beach or other shore type), where the product of depth of flow times the flood velocity squared is greater than or equal to 200 ft3/sec2 (OPTIONAL)
92	5/1/2012	Existing standard Already implemented	Coastal	Working Standard	For coastal Flood Risk Projects, regional surge and wave model performance shall be successfully validated for the Flood Risk Project area.
93	11/1/2004	Existing standard Already implemented	Engineering	Program Standard	Flood Risk Projects shall use the best available, quality-assured data that meets the needs of the study methodology.
96	12/21/2020	Effective Immediately	Coastal - Analysis	Working Standard	Coastal analyses shall not account for future impacts due to long term erosion. Episodic, storm-induced erosion must be included in the flood hazard analysis in establishing appropriate flood hazard zones for regulatory products.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
100	4/1/2003	Existing standard Already implemented	Shallow Flooding	Working Standard	Ponding areas with depths between 1 and 3 feet shall be designated and delineated as Zone AH.
101	12/21/2020	Effective Immediately	Shallow Flooding	Working Standard	Sheet runoff areas shall be delineated as Zone AO with average flooding depths above the ground surface, rounded to the nearest whole foot.
103	12/21/2020	Effective Immediately	PMR	Working Standard	For areas where new or updated regulatory maps are being developed, effective flood hazard information on NFIP maps (i.e., FIRM, FBFM, FHBM) not being updated through a separate flood hazard analysis or floodplain boundary redelineation shall be maintained, either by digitally transforming information from existing NFIP paper maps and / or transferring existing digital data, on the new or updated FIRM.
104	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013	Redelineation	Working Standard	Redelineation shall only be used when the terrain source data is better than effective and the stream reach is classified as VALID in the CNMS database.
105	4/11/2019	Effective immediately	Base Flood Elevations (BFEs)	Working Standard	BFEs in all areas of the United States must be expressed in feet, except in Puerto Rico, where they may be expressed in meters.
106	11/30/2023	Effective immediately	Base Flood Elevations (BFEs)	Working Standard	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.
107	4/11/2019	Effective immediately	Base Flood Elevations (BFEs)	Working Standard	BFEs must be shown within 1-percent-annual-chance floodplains; the exception shall be for Zone A, Zone V, Zone AO, and Zone A99.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
108	4/1/2003	Existing standard Already implemented	Floodway	Working Standard	Regulatory floodways must be mapped within the 1-percent-annual-chance floodplain and must meet the minimum standards outlined in Paragraph 60.3(d)(3) of the NFIP regulations.
109	4/1/2003	Existing standard Already implemented	Floodplain Boundaries	Working Standard	Stream channel boundaries or centerlines must be shown within the identified 1-percent-annual-chance floodplain; if a regulatory floodway is developed, the stream must be shown within the regulatory floodway boundaries.
110	4/1/2003	Existing standard Already implemented	Project Planning	Program Standard	Flooding sources with contributing drainage area less than 1-square mile and/or with an average flood depth of less than one foot shall not be included in the Flood Risk Project scope of work, unless they have been analyzed on the effective FIRM or a justified need is identified during Discovery.
111	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013	Project Planning	Program Standard	At the conclusion of a flood risk project, all SFHA designations—existing, revised, and new—in the project area must be supported by documentation or agreed to by the community.
112	1/10/2010	Existing standard Already implemented	FBS	Working Standard	For all Flood Risk Projects contracted in 2006 and beyond, all floodplain boundaries for new or revised flooding sources within the PMR footprint shall pass the Floodplain Boundary Standard.

<table>
<tr><th>SID #</th><th>Effective Date</th><th>Implementation Description</th><th>Category</th><th>Standard Type</th><th>Standard</th></tr>
<tr><td>113</td><td>11/30/2019</td><td>Existing standard Already implemented</td><td>FBS</td><td>Working Standard</td><td>The flood risk class must be determined for each flooding source to identify what Floodplain Boundary Standard flood risk class must be met and what level of analysis is required. (Refer to Figure 2 in Appendix C).
<table>
<tr><th rowspan="2">Risk Class</th><th rowspan="2">Characteristics</th><th colspan="2">Delineation Reliability of the floodplain boundary per study methodology [1]</th></tr>
<tr><th>Zone A</th><th>All Other Zones</th></tr>
<tr><td>A</td><td>High population and densities within the floodplain and/or high anticipated growth</td><td>+/- 1/2 contour 95%</td><td>+/- 1.0 foot / 95%</td></tr>
<tr><td>B</td><td>Medium populate and densities within the floodplain and/or modest anticipated growth</td><td>+/- 1/2 contour 90%</td><td>+/- 1.0 foot / 90%</td></tr>
<tr><td>C</td><td>Low population and densities within the floodplain, small or no anticipated growth</td><td>+/- 1/2 contour 85%</td><td>+/- 1.0 foot / 85%</td></tr>
<tr><td>D</td><td>Undetermined Risk, likely subject to flooding</td><td>N/A</td><td>N/A</td></tr>
<tr><td>E</td><td>Minimal risk of flooding; area not studied</td><td>N/A</td><td>N/A</td></tr>
</table>
[1] The difference between the ground elevation (defined from topographic data) and the computed flood elevation</td></tr>
<tr><td>114</td><td>1/10/2010</td><td>Existing standard Already implemented</td><td>FBS</td><td>Working Standard</td><td>A horizontal tolerance of +/- 38 feet will be used to determine the compliance with the vertical tolerances defined for each risk class. This horizontal tolerance will address varying floodplain delineation techniques (automated versus non-automated) and map scale limitations.</td></tr>
<tr><td>115</td><td>1/10/2010</td><td>Existing standard Already implemented</td><td>FBS</td><td>Working Standard</td><td>For the FBS audit, the terrain data source that was used to create the flood hazard boundary must be used to conduct the audit.</td></tr>
<tr><td>118</td><td>3/1/2006</td><td>Existing standard Already implemented</td><td>Vertical Datum</td><td>Program Standard</td><td>For areas within the continental United States, all new flood maps and updates must be referenced to NAVD88.</td></tr>
<tr><td>119</td><td>4/1/2003</td><td>Existing standard Already implemented</td><td>Vertical Datum</td><td>Working Standard</td><td>If the final average countywide or flooding source-based datum conversion value is less than +/- 0.1-foot, the datum conversion shall be considered to be executed and the flood elevations for those flooding sources on the FIRM, Flood Profiles, and in the FIS Report tables shall not be adjusted.</td></tr>
</table>

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
120	4/1/2003	Existing standard Already implemented	Vertical Datum	Working Standard	The published flood elevations for all flooding sources within a community must be referenced to a single vertical datum.
121	4/1/2003	Existing standard Already implemented	Vertical Datum	Working Standard	The vertical datum conversion factors shall be applied to flood elevations reported on the FIRM, Flood Profiles shown in the FIS Report, and all data tables in the FIS Report that report flood elevations. All unrevised hydraulic models and supporting backup information shall also be clearly labeled in the Technical Support Data Notebook (TSDN) to indicate that the FIRM and FIS Report reflect a datum conversion, and document the process used to determine the applied conversion factor.
122	7/31/2013	Implemented for all projects beginning data development in Fiscal Year 2013	Vertical Datum	Working Standard	Either a single countywide vertical datum conversion factor or an average flooding source-based conversion factor must be used for a grouping of flooding sources, for individual flooding sources, or for flooding source segments.
123	1/1/2013	Existing standard Already implemented	Vertical Datum	Working Standard	A single countywide vertical datum conversion factor shall be applied when the maximum offset from the average conversion factor does not exceed 0.25- foot.
124	7/31/2013	Implemented for all projects beginning data development in Fiscal Year2013	Vertical Datum	Working Standard	When calculating a single countywide vertical datum conversion, USGS topographic quadrangle corners falling within the land area of the county must be used to calculate the vertical datum conversion factor.
125	7/31/2013	Implemented for all projects beginning data development in Fiscal Year2013	Vertical Datum	Working Standard	When a single countywide conversion is not possible, an average vertical datum conversion factor shall be calculated using a flooding source-based method for a grouping of flooding sources, an individual flooding source, or segments of a flooding source. When a flooding source-based conversion is executed, three evenly distributed points along each flooding source (or segment of a floodingsource) shall be selected to be included the datum conversion calculation. The maximum offset from the average conversion factor determined for the flooding source, grouping of flooding sources or flooding source segment may not exceed 0.25-foot.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
126	1/1/2013	Existing standard Already implemented	Vertical Datum	Working Standard	All flood elevations must be tied in when performing datum conversions.
127	1/1/2013	Existing standard Already implemented	Flood Insurance Study (FIS) Tables	Working Standard	The datum conversion factors (countywide or stream-based) must be clearly documented in the FIS Report tables.
128	11/30/2023	Effective Immediately	2D Models	Working Standard	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.
131	11/1/2009	Existing standard Already implemented	2D Models	Working Standard	All non-conveyance areas considered in the model must be mapped.
132	11/1/2009	Existing standard Already implemented	Floodway	Working Standard	The regulatory floodway must be terminated at the boundary of the VE or V Zone, or where the mean high tide exceeds the 1-percent-annual-chance riverine flood elevation, whichever occurs further upstream.
133	11/1/2009	Existing standard Already implemented	Floodplain Boundaries	Program Standard	Floodplain boundaries of the 1-percent-annual-chance flood must be delineated. If it is calculated, the 0.2-percent-annual-chance flood must be delineated.
134	6/17/2011	Existing standard Already implemented	Redelineation	Working Standard	If the re-delineation topographic data indicates that the effective hydraulic analyses are no longer valid, further actions must be coordinated with the FEMA Project Officer and the CNMS database must be updated.
136	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013	National Flood Hazard Layer (NFHL)	Program Standard	RFHL to NFHL submissions must pass NFHL QC checks at submission and study data must be submitted before the study effective date.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
137	4/11/2019	Effective immediately	Coastal - Mapping	Working Standard	Redelineation of coastal flood hazard areas requires the revision of the 1- percent-annual-chance SFHA boundary, the 0.2-percent-annual-chance floodplain boundary, and the primary frontal dune delineation.
138	4/11/2019	Effective immediately	Coastal - Mapping	Working Standard	Coastal Flood Risk Projects shall produce, at a minimum, a 1-percent-annual- chance and 0.2-percent-annual-chance floodplain and 1-percent-annual- chance base flood elevations that include the contribution of wave effects (including wave setup, wave runup, wave overtopping, and overland wave propagation).
139	11/30/2022	Effective Immediately	Coastal - General	Program Standard	For coastal Flood Risk Projects, where topographic data reflects a temporary disturbance due to recent beach nourishment and/or dune construction projects, and beach berm or dune geometry are not representative of anticipated natural conditions nor have long-standing vegetative cover, the data shall be adjusted to be representative of anticipated natural conditions prior to conducting the storm-induced erosion and onshore wave hazard analyses.
140	4/1/2003	Existing standard Already implemented	Shallow Flooding	Working Standard	Shallow flooding areas shall not contain non-SFHA islands based on small scale topographic variations.
141	4/1/2003	Existing standard Already implemented	Ice Jam	Working Standard	In regions of the United States where ice jams are typical, the project shall include investigation of historical floods for evidence of ice-jam contribution and coordination of the methodology with the impacted communities and State as part of the Discovery process.
142	4/1/2003	Existing standard Already implemented	Ice Jam	Working Standard	Where ice jams occur, backwater effects must be considered.
143	4/1/2003	Existing standard Already implemented	Ice Jam	Working Standard	The appropriate methodology for the floodway designation in areas mapped with an ice-jam analysis shall be determined in coordination with the community.
145	1/1/2013	Existing standard Already implemented	Flood Insurance Study (FIS) Report	Working Standard	A transect location map must be provided in the FIS Report narrative if transects are not shown on the FIRM.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
146	2/17/2000	Existing standard Already implemented	Coordination	Working Standard	FEMA must be notified of any potential floodplain management violations identified through the submittal of new or revised flood hazard data. Pending mapping changes affected by the potential violation will be suspended until the issue is resolved.
147	4/1/2003	Existing standard Already implemented	Base Map	Working Standard	The minimum resolution requirement for raster data files (ortho-imagery) is 1- meter ground distance.
148	4/1/2003	Existing standard	Base Map	Working Standard	The minimum horizontal positional accuracy for new FIRM base map hydrographic and transportation features is the NSSDA radial accuracy of 38 feet.
149	4/1/2003	Existing standard Already implemented	Base Map	Working Standard	The base map used for the FIRM must clearly show sufficient current ground features to enable clear interpretation of the flood hazard data displayed on the base map.
150	4/1/2003	Existing standard Already implemented	Map Format and Layout	Working Standard	The FIRM paneling scheme shall follow that used by the USGS for the 7.5- minute-series quadrangle, or subdivisions thereof.
151	4/1/2003	Existing standard Already implemented	Map Format and Layout	Working Standard	All digital FIRMs must be oriented so that grid north points to the top of the map sheet.
152	8/23/2005	Existing standard Already implemented	GDC	Program Standard	Geospatial data for use in Flood Risk Projects must be coordinated, collected, documented and reported with standardized, complete and current information in compliance with federal geospatial data reporting standards.
153	11/30/2022	Effective Immediately	GDC	Working Standard	Details of cost, leverage, and project scope for new elevation data purchases must be reported to FEMA's geospatial data tracking systems.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
154	8/23/2005	Existing standard Already implemented	GDC	Program Standard	All unnecessary duplication of federal, state or local mapping efforts must be avoided.
157	1/1/2011	Existing standard Already implemented	Project Planning	Program Standard	FEMA will not provide funding for new base map data collection as part of a specific Flood Risk Project.
158	8/23/2005	Existing standard Already implemented	Elevation Data	Program Standard	Elevation data created using FEMA funding must allow unlimited free distribution by FEMA and partners.
161	1/1/2013	Existing standard Already implemented	Data Capture	Program Standard	All deliverables and supporting data must be uploaded to the MIP as each workflow step is completed for each project task. If any of these data are modified subsequently, the revised data must be uploaded to the MIP before the effective date of the FIRMs or the completion of the project, if no regulatory products are produced.
163	4/1/2003	Existing standard Already implemented	Prelim Distribution	Working Standard	The Preliminary digital FIRM Database shall be distributed for review with the Preliminary FIRM and FIS Report.
164	4/1/2003	Existing standard Already implemented	Prelim Distribution	Program Standard	The FEMA Regional office must approve distribution of preliminary and revised preliminary products.
165	4/1/2003	Existing standard Already implemented	Prelim Distribution	Program Standard	Preliminary/Revised Preliminary copies of the FIRM, FIS Report, SOMAs (if modified during Revised Preliminary), and letters shall be distributed to the community CEO and floodplain administrator; State NFIP Coordinator; and other identified stakeholders as appropriate.
166	4/1/2003	Existing standard Already implemented	Prelim Distribution	Working Standard	Following issuance of the preliminary copies of the FIRM and FIS Report, FEMA shall provide a period (usually 30 days) for community officials, community residents, and other interested parties / stakeholders to review the preliminary copies of the FIRM and FIS Report.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
168	4/11/2019	Effective immediately	SOMA	Program Standard	If the community is located on revised FIRM panels, all valid LOMCs for this community shall be reviewed and categorized in the MIP SOMA Workbench. The Preliminary and Final SOMA is distributed to the community for review and comment if there are LOMCs that fall on revised FIRM panels. The MIP SOMA Workbench is updated and the SOMA and/or Revalidation Letter output is reviewed in advance of the following distributions: • Preliminary Issuance, • Revised Preliminary Issuance, • Letter of Final Determination, and • Revalidation Letter.
169	11/30/2016	Effective immediately	LOMR Incorporation	Program Standard	All valid LOMRs that are effective during post-preliminary for a study or PMR prior to the LOMC cutoff date (which is 60 days before the project's LFD date) must be incorporated into the new FIS Report, FIRM, and FIRM Database. LOMRs that are issued after this time must be re-issued after the revised FIRM date, if they are still valid.
172	10/1/2011	Existing standard Already implemented	Prelim Distribution	Working Standard	All Preliminary Title Blocks shall be stamped “Preliminary” or “Revised Preliminary” as appropriate.
173	10/1/2011	Existing standard Already implemented	Prelim Distribution	Working Standard	No effective date or map revised date shall be shown on the preliminary or revised preliminary title blocks.
174	11/30/2021	Effective immediately	Data Capture	Program Standard	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).
176	11/30/2021	Effective immediately	Data Capture	Working Standard	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.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
178	2/28/2018	Effective immediately	Data Capture	Working Standard	For each data development task prior to the Draft FIRM Database Capture MIP task, the data for flooding sources receiving new or revised flood hazard analyses must be submitted in accordance with the FIRM Database Submittal Table and following the schema of the FIRM Database Technical Reference. Non-FEMA funded external data studies are excluded from this requirement. Data submittals for all new, revised, and existing analyses must include the S_Submittal_Info table compliant with the schema in the FIRM Database Technical Reference.
180	11/30/2021	Effective immediately	Data Capture	Working Standard	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 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.
181	5/31/2016	Existing standard Already implemented	Data Capture	Working Standard	A metadata file in XML format must be submitted that complies with the Metadata Profiles Technical Reference for each applicable task for regulatory product deliverables, non-regulatory flood risk product deliverables, or relevant supporting data submittals.
182	1/1/2013	Existing standard Already implemented	Data Capture	Working Standard	Copies of all project-related data must be retained for a period of three years.
183	1/1/2013	Existing standard Already implemented	Data Capture	Working Standard	A file that compiles general correspondence must be submitted for each project task.
184	1/1/2013	Existing standard Already implemented	Data Capture	Working Standard	Any supporting data that are tiled must have an accompanying index spatial file. Tiles must be topologically correct and have only one part and cannot self-intersect (must be simple). Adjacent tiles must not overlap or have gaps between them.
185	1/1/2013	Existing standard Already implemented	Data Capture	Working Standard	PDF files must be created using the source file (e.g., MS Word file). Created PDF files must allow text to be copied and pasted to another document.

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186	1/1/2013	Existing standard Already implemented	Data Capture	Working Standard	A narrative must be submitted that summarizes the work performed (streams analyzed, type of Flood Risk Project, etc.), direction from FEMA, assumptions and issues, and any information that may be useful for the other mapping partners working on the project or subsequent users of the Flood Risk Project backup data for each task.
187	2/28/2018	Effective immediately	Data Capture	Program Standard	All relevant data must be submitted that fully documents the flood risk project including the engineering analyses, input and output files for the models used; a report that documents the methodology, assumptions, and data used in the engineering analyses; applicable draft FIS Report text sections, tables, graphics, Flood Profiles; quality records in the form of (at a minimum) QR3 Self-Certification Forms, and QR3, QR5, QR7, & QR8 Checklists; input and output files and quality checklists associated with the flood risk products and datasets; and any other backup data. These data comprise the TSDN.
188	4/1/2003	Existing standard Already implemented	Base Map	Working Standard	FEMA must be able to distribute the base map data and floodplain information freely to the public in hardcopy and digital formats.
189	4/1/2003	Existing standard Already implemented	CNMS	Working Standard	Effective and revised flood hazard data must be tied in with no discontinuities. Where discontinuities cannot be resolved, they must be documented in the CNMS database, but not until the discontinuity is accepted by the FEMA Project Officer.
190	4/1/2003	Existing standard Already implemented	Quality Management	Program Standard	All technical review comments associated with the FIS Report, FIRM, or FIRM database must be fully addressed and resolutions must be fully documented.
192	5/13/2002	Existing standard Already implemented	Project Initiation	Working Standard	Unique FEMA Case Numbers (e.g., 01-05-1234R) shall be assigned for all initiated LOMCs and Flood Risk Projects.
193	2/28/2018	Effective immediately	Post- Preliminary Deliverables	Program Standard	For Flood Risk Projects, the authoritative source for creating and publishing Flood Hazard Determination Notices that result in new or modified flood hazard information is the MIP. For LOMRs, it is the Flood Hazard Determinations-on-the-Web tool.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
195	4/1/2003	Existing standard Already implemented	Letter of Map Change (LOMC)	Working Standard	LOMC requestors shall submit requests, including the required review and processing fee if applicable, to the appropriate processing address. The address is provided in the application forms package that must be used in preparing a LOMC request for submittal.
196	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Program Standard	If required by state law, state concurrence with the LOMR or CLOMR shall be required.
197	4/1/2003	Existing standard Already implemented	Letter of Map Change (LOMC)	Working Standard	Upon receipt of a LOMC, the following shall be done: Make an initial determination as to the expected processing procedure • Assign a case number • Create a case file • Enter the request into the MIP • Record the date of receipt
198	4/1/2003	Existing standard Already implemented	Letter of Map Change (LOMC)	Working Standard	When processing a LOMC, any ongoing, past, or future map actions affecting the case shall be taken into consideration.
199	2/28/2018	Effective immediately	Letter of Map Change (LOMC)	Program Standard	LOMC submittals must include certifications by a licensed professional authorized to certify the data under state law, except when LiDAR is provided to satisfy the lowest adjacent grade (LAG) requirements for LOMAs.
200	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	A LOMR or CLOMR must be supported by a topographic map or digital data that includes all relevant information required by FEMA.
201	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	A LOMR or CLOMR must include proposed floodplain and/or floodway boundary delineations shown on an annotated FIRM.
202	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	All LOMRs including new grading or structures must include certified as-built construction plans, grading plans, or survey data.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
203	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	If the discharges in the effective FIS Report are not used in the LOMR or CLOMR submittal, the revision requester shall provide sufficient data to support the use of the new discharges for the 1-percent-annual-chance flood and other published flood frequencies.
204	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	A LOMR or CLOMR in riverine areas must submit a model duplicating the effective hydraulic model (multiple profile and floodway if appropriate). The revision requester shall use it to establish the baseline condition unless an existing conditions hydraulic model is required.
205	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	For a LOMR or CLOMR, an existing conditions hydraulic model is required if the duplicate effective model does not reflect the floodplain conditions prior to the start of the project.
206	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	If the revision is submitted as the result of a project, a post-project revised hydraulic model reflecting as-built conditions must be submitted.
207	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	At a minimum, the analyses and other supporting data provided in support ofa revision request must be equivalent to or better than the scientific and technical data employed by FEMA for the preparation of the effective analyses.
210	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Working Standard	For floodplain boundary revisions based on new or more detailed topographic information, the revision requester will not be required to submit revised hydraulic analyses unless the changes in ground contours have significantly affected the geometry of cross sections used for the effective FIS Report and FIRM or have altered effective-flow areas.
213	11/30/2022	Effective Immediately	Notice-to-User	Program Standard	During the Notice-to-User Corrections process, approval of the action taken shall be obtained from the FEMA HQ Due Process Lead and the decision must be documented in writing.
214	11/30/2022	Effective Immediately	Notice-to-User	Program Standard	During the Notice-to-User Corrections process: • the FIS, FIRM panel(s), FIRM Database, and NFHL must be corrected as appropriate; • the corrected components must indicate the appropriate date; • the corrected components must be distributed to the communities affected by the correction; and • the corrected components must be updated on the MSC site.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
215	11/30/2019	Effective immediately	Letter of Map Change (LOMC)	Program Standard	Conditional LOMCs are subject to the same standards of a LOMA, LOMR-F, or LOMR except: • Because Conditional LOMCs are based on proposed construction, as-built information is not required. • The Conditional Comment Documents that are issued by FEMA do not amend or revise the effective FHBM or FIRM. • Conditional LOMRs and CLOMR-Fs must demonstrate compliance with the Endangered Species Act.
216	4/1/2003	Existing standard Already implemented	Letter of Map Change (LOMC)	Working Standard	A letter shall be mailed to the requester acknowledging receipt of the LOMC request within three business days of receiving the data.
217	11/30/2019	Effective immediately	Letter of Map Change (LOMC)	Program Standard	If all information is not received within 90 days from the date of the request for additional data, the processing of the LOMC shall be suspended.
218	11/30/2019	Effective immediately	Letter of Map Change (LOMC)	Program Standard	LOMA, CLOMA, LOMR-F, CLOMR-F, LOMR and CLOMR determinations must be issued based on the effective FIRM and FIS for a community and may not be issued based on preliminary data for a FEMA-contracted Flood Risk Project or community-initiated map revision. However, if the effective SFHA does not have BFEs or flood depths established and the preliminary data is the best available, a one-percent-annual chance flood hazard water surface elevation may be calculated during LOMA, CLOMA, LOMR-F, or CLOMR-F reviews using data from these sources.
219	4/1/2003	Existing standard Already implemented	Letter of Map Change (LOMC)	Working Standard	Following the preparation of the LOMC determination document, the LOMC shall be included in the list of determinations that is to be sent to FEMA for official approval. Following approval, the requester shall be provided with FEMA's final determination. A copy of the LOMC determination document shall also be sent to the community CEO and floodplain administrator and to the requester when applicable.
220	11/30/2019	Effective immediately	Letter of Map Change (LOMC)	Program Standard	The reviews of LOMC requests shall be processed in accordance with the Code of Federal Regulations Title 44 C.F.R. Parts 65, 67, 70, and 72.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
222	7/31/2013	Applicable to all ongoing and future Flood Risk Projects	Letter of Map Revision (LOMR)	Working Standard	When processing a LOMR for a FIRM that has been modernized (i.e., has a FIRM database), the map (FIRM and/or FBFM panels), Flood Profile, and data tables (i.e., Floodway Data and Summary of Discharges) enclosures shall be prepared in accordance with the FIRM Panel Technical Reference and the FIS Report Technical Reference. If the FIRM that is having a LOMR issued for it has not been modernized, either the current standards may be used (as indicated in the FIRM panel and FIS Report Technical References), or the standards in effect when the effective map and attachments were created.
223	7/31/2013	Implemented for LOMCs processed after the effective date	Letter of Map Revision (LOMR)	Working Standard	If a LOMR changes stillwater elevations, transect data, flood elevations, discharges, and/or floodway information, the supporting information in the FIS Report and FIRM Database shall be revised as necessary.
224	4/1/2003	Existing standard Already implemented	Special Conversions	Working Standard	For all Special Conversions, coordination and documentation activities shall be performed to convert the community to the Regular Phase of the NFIP.
225	4/1/2003	Existing standard Already implemented	Special Conversions	Working Standard	FEMA management system databases shall be maintained for Special Conversions.
226	11/30/2019	Effective immediately	Letter of Map Change (LOMC)	Working Standard	LOMC requests involving below-grade crawlspaces constructed within the SFHA shall follow guidance provided in FEMA Technical Bulletin 11.
227	11/30/2022	Effective Immediately	Notice-to-User	Program Standard	The Notice-to-User Corrections process shall only be used for corrections of errors or omissions in the FIS Report, FIRM Database, NFHL, or on the FIRM that do not require administrative appeal. The Notice-to-User Corrections process shall not change the accreditation status of a levee or the effective date of the FIRM and FIS.
228	11/1/2009	Existing standard Already implemented	Stakeholder Engagement	Working Standard	All regulatory floodway changes must be coordinated with affected community officials and other stakeholders as early as possible.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
229	12/21/2020	Effective immediately	Flood Profiles	Working Standard	Flood Profiles shall be plotted as the projection of the stream invert and the flood surface(s) onto the flow path. The plots should show the locations of and clearly label: • Each lettered mapped cross section; • Separately modeled splits and diversions; • Confluences of modeled tributaries, splits, and diversions; • Each stream crossing with symbology depicting the top of road and low chord elevations of modeled bridges and culverts along with the name of the bridge/culvert (e.g., Pine Street); • Extents of modeled hydraulic structures adjacent to the flooding source; • Upstream and downstream study limits of the flooding source; • Extent of backwater or flooding controlling the receiving stream and depiction of the backwater elevation along the profile.
234	4/1/2003	Existing standard Already implemented	FIS Report	Working Standard	FIS Reports exceeding 150 pages in length shall be subdivided into two or more volumes.
235	12/21/2020	Existing standard Already implemented	FIS Report	Working Standard	If an FIS Report is published in two or more volumes, no volume shall exceed 100 pages.
236	4/1/2003	Existing standard Already implemented	FIS Report	Working Standard	For multi-volume FIS Reports, a single Table of Contents shall be produced for the entire report and shall be included in all volumes.
237	4/1/2003	Existing standard Already implemented	FIS Report	Working Standard	Preliminary FIS Reports must include a stamp on the cover to indicate the Preliminary status and the date of the Preliminary issuance.
238	12/8/2011	Existing standard Already implemented	FIS Report	Working Standard	As outlined in the FIS Report Technical Reference, all numbered sections, tables and figures are required for every FIS Report prepared in compliance with the FIS Report Technical Reference, regardless of whether the topic addressed by that element is applicable to the Flood Risk Project.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
239	12/8/2011	Existing standard Already implemented	FIS/FIRM	Working Standard	Table columns and names in the FIS Report must comply with the most current FIS Report Technical Reference unless FEMA Regional approval has been given to retain the prior FIS Report format.
240	12/8/2011	Existing standard Already implemented	FIS Report	Working Standard	When revising the FIS Report in compliance with the current FIS Report Technical Reference (as opposed to appending information to the former FIS report format), the FIS Report template must be used.
241	12/8/2011	Existing standard Already implemented	FIS Report	Working Standard	References used within the FIS Report text must match the citation listed in the Bibliography and References table.
242	12/8/2011	Existing standard Already implemented	FIS Report	Working Standard	FIS Reports created in compliance with the FIS Report Technical Reference must use an "(Author Year)" format for inline citations.
243	12/8/2011	Existing standard Already implemented	FIS/FIRM	Working Standard	If a future conditions analysis is incorporated into the Flood Risk Project, the results shall be included in the FIRM database, FIRM, and FIS Report.
245	12/8/2011	Existing standard Already implemented	FIS Tables	Working Standard	The "Listing of NFIP Jurisdictions" and "Community Map History" tables in the FIS Report shall include all communities that fall within the county or jurisdiction whose FIS Report is being produced.
246	12/8/2011	Existing standard Already implemented	FIS Tables	Working Standard	Communities that have no Special Flood Hazard Areas identified shall be noted in the "Listing of NFIP Jurisdictions" and "Community Map History" FIS Report tables with a footnote.
247	12/8/2011	Existing standard Already implemented	FIS Tables	Working Standard	For FIS Reports produced in compliance with the FIS Report Technical Reference, all accredited levees, PALs, and non-accredited levees must be included in the "Levees" table of the FIS Report.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
248	12/21/2020	Effective Immediately	FIS Tables	Working Standard	All lettered or numbered cross sections or evaluation lines must be shown on the Flood Profiles and, if a floodway was computed, must also be shown in the Floodway Data Table. Unlettered cross sections shown on the FIRM are not to be included on the Floodway Data Table or Flood Profiles.
249	12/8/2011	Existing standard Already implemented	FIS Tables	Working Standard	In the "Community Map History" table for FIS Reports produced in compliance with the FIS Report Technical Reference, the "FIRM Revisions Date(s)" column shall include all FHBM and FIRM revisions and must be updated during each revision to reflect the new PMR effective date. All PMR effective dates must be included for the communities that received updated FIRM panels, even if the PMR did not revise all the panels within that community.
250	12/8/2011	Existing standard Already implemented	FIRM Index	Working Standard	The FIRM Index shall be included in the FIS Report at a size of 11" x 17" for FIS Reports produced in compliance with the FIS Report Technical Reference.
251	12/8/2011	Existing standard Already implemented	FIRM Index	Working Standard	For FIRM Indexes which require more than one page, the page number shall be indicated in the title block in the following manner: FLOOD INSURANCE RATE MAP INDEX (Sheet 1 of 2). A county locator map shall be added with a rectangle showing the extent of the current FIRM Index sheet.
252	12/8/2011	Existing standard Already implemented	FIRM Index	Working Standard	For FIRM Indexes produced in compliance with the FIS Report Technical Reference, base map features that must be shown and labeled on the FIRM Index are HUC-8 watersheds and political jurisdictions. Community labels must also include the CID.
253	12/8/2011	Existing standard Already implemented	FIRM Index	Working Standard	For FIRM Indexes produced in compliance with the current FIS Report Technical Reference, FIRM panels shown on the FIRM Index shall be labeled only with the four-digit panel number and suffix. The effective date must also be included and shall be placed directly beneath the FIRM panel number in "mm/dd/yyyy" format.
254	12/8/2011	Existing standard Already implemented	FIRM Index	Working Standard	The FIRM Index shall identify unprinted panels with asterisks and footnotes that define the reason(s) for the panel(s) not being printed.
255	12/8/2011	Existing standard Already implemented	FIS Report	Working Standard	For FIS Reports produced in compliance with the FIS Report Technical Reference, every note that is shown on the Notes to Users on one or more FIRM panels must be included once in the Notes to Users section in the FIS Report.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
256	12/21/2020	Effective Immediately	Flood Profiles	Working Standard	Flood Profiles for Zone AE must show data for each of the six standard (10-, 4-, 2-, 1-, 1 percent -plus-, and 0.2 percent -annual-chance) flood events if they were calculated as part of the Flood Risk Project.
257	12/8/2011	Existing standard Already implemented	FIS Report	Working Standard	The FIS Report deliverable to the MSC must be an unsecured PDF file, with as much searchable text as possible, and must be bookmarked in accordance with the direction outlined in the FIS Report Technical Reference. Embedded graphics, where necessary, must have a resolution of 400 dpi.
259	4/1/2003	Existing standard Already implemented	FIS Report	Working Standard	A description of all dams and other non-levee flood protection measures affecting the communities represented in the project area shall be included in the FIS Report.
260	4/1/2003	Existing standard Already implemented	FIS Report	Working Standard	A description of any unusual floodway procedures that deviate from national policy, such as State-imposed or locally imposed surcharge limits of less than 1.0 foot for regulatory floodway, must be listed in the "Floodways" section of the FIS Report.
261	12/8/2011	Existing standard Already implemented	FIS Report	Working Standard	Counties that have an effective countywide FIS Report must remain countywide, regardless of whether they are updated to comply with the FIS Report Technical Reference or not.
264	12/21/2020	Effective Immediately	FIS Tables	Working Standard	For cross-sections shown in areas of backwater flooding, elevations in the “Without Floodway” column of the Floodway Data Table shall not include backwater effects. The "Without Floodway" values must include a footnote stating, "Elevation Computed Without Consideration of Backwater Effects From (Source of Flooding)." The words “Backwater Effects” are to be replaced with “Tidal Effects,” “Overflow Effects,” “Ice Jam Effects,” or “Storm Surge Effects,” as needed, to reference the appropriate flooding situation.
265	12/21/2020	Effective Immediately	FIS Tables	Working Standard	When a part of a regulatory floodway lies outside the jurisdiction, both the total floodway width, and the width within the jurisdiction, shall be listed in the FIRM database and Floodway Data Table unless the stream forms the boundary between two states with differing surcharge requirements.
267	4/1/2003	Existing standard Already implemented	Flood Profiles	Working Standard	Only one stream shall be shown on any given Flood Profile panel.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
268	11/30/2016	Effective immediately	FIS Report	Working Standard	All communities addressed by the FIS (typically the county and all communities within) must be sent or provided a means to access the new FIS Report during distribution of the final products, regardless of whether they are affected by the new Flood Risk Project or are outside the project area.
270	4/1/2003	Existing standard Already implemented	Flood Profiles	Working Standard	On the Flood Profiles for tributary streams, the 1-percent-annual-chance flood backwater from the main watercourse or water body shall be labeled as "Backwater From (MainStream Name)."
270	4/1/2003	Existing standard Already implemented	Flood Profiles	Working Standard	On the Flood Profiles for tributary streams, the 1-percent-annual-chance flood backwater from the main watercourse or water body shall be labeled as "Backwater From (MainStream Name)."
272	12/21/2020	Effective Immediately	Flood Profiles	Working Standard	A vertical elevation scale of 1 inch equals 1, 2, 5, 10, or 20 feet is to be used for the Flood Profiles. Elevations shall be labeled on the left side of the grid at 1-inch intervals within the profile elevation range.
273	4/1/2003	Existing standard Already implemented	Flood Profiles	Working Standard	The 1-percent-annual-chance Flood Profile plots shall agree with the distances and elevations shown in the Floodway Data Table, with a maximum tolerance of 1/20-inch on the printed Flood Profile panel. Other features shown on the Profiles, such as cross-section labels and hydraulic structures, shall also be accurately plotted to within the 1/20-inch tolerance.
274	11/30/2022	Effective Immediately	Flood Profiles	Working Standard	The horizontal and vertical scales of the Flood Profiles shall be chosen such that the Flood Profile slopes are reasonable and can be easily interpreted by the user, and developed consistently for each flooding source.
275	4/1/2003	Existing standard Already implemented	Flood Profiles	Working Standard	The horizontal scale of the Flood Profile shall be labeled at 1-inch intervals along the bottom edge of the grid and legend box.
277	12/8/2011	Existing standard Already implemented	FIS Report	Working Standard	For FIS Reports prepared in compliance with the FIS Report Technical Reference, any information that was included in Section 10 of a previous FIS Report using an approach known as "Revisions by Addendum" shall be incorporated into the relevant sections and tables of the current FIS Report.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
278	4/1/2003	Existing standard Already implemented	Flood Profiles	Working Standard	River stationing is to be referenced from a physical location such as a confluence or structure.
279	12/21/2020	Effective Immediately	Flood Profiles	Working Standard	Downstream flood elevations are to be oriented towards the left edge of the Flood Profile.
280	12/21/2020	Effective Immediately	Flood Profiles	Working Standard	Stream distances reported in the Floodway Data Tables, Flood Profiles, and FIRM database must be measured along the profile baseline.
281	4/1/2003	Existing standard Already implemented	Flood Profiles	Working Standard	Distance and elevation units used on a Flood Profile must be consistent with the units used in the Floodway Data Table.
282	1/1/2013	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	All FIRM panel symbology and labels must be clear and readable and clearly communicate the flood hazard information needed for insurance and mitigation purposes.
283	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	The FIRM panel "Notes to Users" section must contain notes referring the user to the FIS Report for a detailed legend and FIRM Index, to the MSC website for other digital products providing the NFIP contact information, and to the base map data source.
284	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	The LiMWA note in the FIRM panel "Notes to Users" section shall include a legend.
285	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	All elements of the FIRM title block must be present and must adhere to the specifications in the FIRM Panel Technical Reference.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
286	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	The jurisdiction names in the FIRM panel title block must include, at a minimum, the jurisdiction prefix (e.g., city, town, or village), jurisdiction name, and full state name. FIRM panels for individual jurisdictions shall also include the name of the county, except for jurisdictions that are officially classified as “Independent.”
287	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	When each new edition of a FIRM panel is prepared, the suffix for each revised FIRM panel shall be changed to the next alphabetical letter while skipping the letters "I" and "O". For first time countywide or partial countywide FIRMs, the map suffix should be one letter higher than the highest suffix of all jurisdictions included.
288	4/18/2002	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	FIRM panels, FIRM Indexes, and FIS Reports shall follow the ID numbering schemes outlined in the FIRM Panel and FIS Report Technical References.
289	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	The FIRM panel map collar must include a North Arrow, Scale Bar, and map projection and datum information.
290	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	First-time modernized FIRM panels must be in countywide format unless the FIRM is for a multi-county jurisdiction that will retain its community-based FIRM format.
291	10/1/2011	Existing standard Already implemented	Map Format and Layout	Program Standard	A determination to use Partial-Countywide FIRM panel and FIRM Database format must be coordinated with and approved by the FEMA Region and FEMA Headquarters.
292	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	If partial countywide FIRM panel mapping is pursued, the FIRM title block will list all of the jurisdictions on the FIRM panel, but the ones not included in the partial countywide mapping will be noted as having their FIRMs and FIS Reports published separately.
294	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	For partial countywide FIRM panel mapping, panel numbers must be assigned for the entire county, just as for a full countywide panel layout. Numbering of countywide FIRM panels must consider the numbering of the existing panels so as not to create two panels with the same number (e.g. 0250). If there would be two panels with the same number, start countywide numbering by going up to the first even thousand above the highest existing FIRM panel number.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
295	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	When partial countywide mapping is processed, any existing community- based FIRM panels that overlap the partial countywide must be reissued with the overlapping area blanked out and the blanked-out area must include a note referring the users to the partial countywide FIRM.
296	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	If a FIRM revision is being processed when there is a separate FBFM, the two maps should be combined into the new format FIRM using the new flood zone designations and the FBFM shall no longer exist as a separate map.
297	1/1/2013	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	On FIRM panels, symbolization and labeling of all base map, hydraulic, and flood theme features must be standardized as shown in the FIRM Panel Technical Reference.
300	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	All FIRM panels shall be printed to full page, portrait orientation, ARCH D map frames with a trimmed paper size of: Height 36” x Width 24”. The title block must appear in the bottom right corner and be 5.3-inches wide by 9-inches in height.
301	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	FIRM panels must include a white border on all sides and must contain a title block on the bottom right corner, a legend, a Notes to Users section, and a Panel Locator section across the bottom of the panel, as outlined in the FIRM Panel Technical Reference.
304	10/1/2011	Existing standard Already implemented	Base Map	Working Standard	All raster base maps used for FIRM panel preparation must be georeferenced and orthorectified.
305	10/1/2011	Existing standard Already implemented	Map Format and Layout	Working Standard	A countywide FIRM must provide seamless spatial base map and flood hazard coverage within the county area for all jurisdictions shown on the FIRM.
306	10/1/2011	Existing standard Already implemented	Floodplain Boundaries	Working Standard	Any existing mismatches in floodplains and flood hazard information between communities and counties must be resolved as part of a FIS Report/FIRM update.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
307	10/1/2011	Existing standard Already implemented	Base Map	Working Standard	Raster base map image(s) used for FIRM panel preparation shall cover the entire jurisdiction being analyzed except in the cases of open water areas and/or areas that may be restricted due to security concerns.
308	10/1/2011	Existing standard Already implemented	Base Map	Working Standard	The FIRM base map is the horizontal reference data shown on the FIRM to assist in interpreting the areas impacted by the flood risk information shown. The term base map does not include topographic or elevation data. The following types of base map features must be depicted on the FIRM panel if they occur within the community: • Transportation features, including roads and railroads, hydrographic features, hydraulic structures • Boundaries that identify county and State boundaries, corporate limits, ETJ areas, military lands, and tribal lands, and U.S. PLSS features.
309	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	Any transportation feature shown and labeled on a Flood Profile shall be labeled on the FIRM panel.
310	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	Primary roads, as defined by the MAF/TIGER data, shall be shown and labeled on the FIRM panel.
311	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	On FIRM panels, all hydrographic features (streams, lakes, ponds, bays, and oceans) that have an identified flood hazard associated with them shall be labeled.
312	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013.	Profile Baseline	Working Standard	A profile baseline must be shown on FIRM panels for all flooding sources with profiles or otherwise established riverine BFEs (static elevations excluded), and for modeled riverine Zone A areas.
313	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	In areas of riverine flooding where no profile baseline is available, but a flood hazard has been identified, the bank or centerline representation of the hydrographic feature must be shown on vector-based FIRM panels.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
315	11/30/2022	Effective Immediately	Levee	Working Standard	All levees stored in the FIRM Database shall be symbolized on the FIRM panel as outlined in the FIRM Panel Technical Reference, with the appropriate accreditation status noted.
316	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	Hydraulic structures other than levees shall be labeled on the FIRM panel only if shown on the Flood Profile of the FIS Report. The label name must match what is shown on the Flood Profile. If 1 percent, 0.2 percent -annual-chance- flood discharge, and/or floodway are contained in the structure, a note must be placed on the FIRM panel near the feature to refer to the highest contained discharge.
317	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	All political entities (including Extra-Territorial Jurisdictions) shall be depicted and labeled on the FIRM panel with the appropriate jurisdiction names and CIDs or area designator.
319	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	Any area shown on the FIRM panel as an Area Not Included shall be labeled with the entity's name and the notation "Area Not Included".
320	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	Vector base map features are not required on the FIRM in Areas Not Included.
322	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	On FIRM panels, when boundaries of different types are coincident with each other or with base map features, only the highest priority feature shall be shown.
323	10/1/2011	Existing standard Already implemented	Projections and Coordinate Systems	Working Standard	FIRM panels must show horizontal reference grids and corner coordinates selected, displayed and labeled as directed in the FIRM Panel Technical Reference.
332	11/30/2021	Effective Immediately	FIRM Graphic Standards	Working Standard	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.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
334	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	Each flood hazard zone shall be bounded by a SFHA/FLOOD ZONE BOUNDARY line type when adjacent to another flood hazard area of a different type or elevation.
335	12/21/2020	Effective Immediately	Floodway	Working Standard	Regulatory floodways shall be shown on the FIRM panel within the SFHA and, at lettered or numbered cross-section and evaluation line locations, floodway widths must agree with the values shown on the FDT in the FIS Report and the FIRM Database tables, within a maximum tolerance of 5 percent of the map scale or 5 percent of the distance, whichever is greater.
338	11/30/2021	Effective Immediately	FIRM Graphic Standards	Working Standard	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.
339	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	Zone X areas that represent future conditions or areas protected by accredited levees shall be labeled on the FIRM panel in accordance with the FIRM Panel Technical Reference.
340	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	SFHAs with assigned static elevations, depths, or velocities shall have their static BFE, depth, or velocity value labeled on the FIRM panels in accordance with the FIRM Panel Technical Reference.
341	10/1/2011	Existing standard Already implemented	BFEs	Working Standard	All BFE lines stored in the FIRM Database must be shown on FIRM panels.
342	10/1/2011	Existing standard Already implemented	Cross- Sections	Working Standard	Cross sections stored in the FIRM Database must be shown on the FIRM panels if they are attributed as one of the following line types: LETTERED, MAPPED and NOT LETTERED, MAPPED.
343	10/1/2011	Existing standard Already implemented	Cross- Sections	Working Standard	On FIRM panels and in FIRM Databases, lettered or numbered cross sections for each stream analyzed by detailed methods shall be labeled alphabetically or numerically from downstream to upstream.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
345	10/1/2011	Existing standard Already implemented	Cross- Sections	Working Standard	On FIRM panels, lettered or numbered cross sections shall be symbolized and labeled as outlined in the FIRM Panel Technical Reference.
346	11/30/2023	Effective immediately	Cross- Sections	Working Standard	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.
347	4/11/2019	Effective immediately.	Cross- Sections	Working Standard	If unlettered cross sections and BFEs cannot be shown on the FIRM panel because of crowding due to steep terrain, a note shall be placed referring the user to the Flood Profiles in the FIS Report per the specifications listed in the FIRM Panel Technical Reference.
348	11/30/2023	Effective immediately	Cross- Sections	Working Standard	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.
349	11/30/2021	Effective for all projects that have not started QR5.	FIRM Graphic Standards	Working Standard	On the FIRM panels and in the FIRM Database, LIMIT LINES shall be placed at the 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.
351	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	If transect lines are shown in the FIRM database, they must be delineated and labeled on the FIRM panels.
352	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	The LiMWA must be included in the FIRM Database if it has been calculated as part of a coastal Flood Risk Project and shall normally be shown on FIRM panels. All community requests to have the LiMWA removed from the FIRM must be received at least two months prior to the issuance of the LFD.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
356	2/15/2019	Effective for all studies not submitted to QR5 by 12/21/2018 that do not have an effective date prior to 01/26/2019	Coastal Barrier Resources System	Working Standard	All FIRM panel data, notes, labels, and symbolization associated with CBRS and Otherwise Protected Areas should be removed from regulatory products with the exception of the following Note to Users which shall be included on all FIRM Panels in communities identified by the FWS as potentially containing CBRS areas: Coastal Barrier Resources System (CBRS) areas and "otherwise protected areas" (OPAs) are no longer shown on this map panel, but still may be present in this community. Current information on these areas is provided by the U.S. Fish & Wildlife Service (FWS). NFIP flood insurance is not available within CBRS areas for structures that are built or substantially improved on or after the dates indicated by FWS. Users should reference the most up-to-date information provided by FWS to determine NFIP insurance eligibility. The official maps and additional information regarding CBRS areas are provided on the FWS website at: www.fws.gov/cbra. FEMA also includes the official boundaries from FWS on our interactive and dynamic flood maps available through the FEMA Map Service Center.
357	10/1/2011	Existing standard Already implemented	FIRM Graphic Standards	Working Standard	Each FIRM panel must have a map legend that includes all the required elements and complies with the symbology as outlined in the FIRM Panel Technical Reference.
359	10/1/2011	Existing standard Already implemented	FIRM Database	Working Standard	Data sources in the FIRM Database must be documented with source citations in the database and the metadata.
361	10/1/2011	Existing standard Already implemented	FIRM Database	Working Standard	The FIRM Database digital data must be submitted in a series of layers that cover the entire geographic area being mapped and not in individual small tiles that cover limited geographic areas.
363	11/30/2022	Effective immediately	National Flood Hazard Layer (NFHL)	Working Standard	Unless the adjacent study area is being revised or unmodernized, the NFHL must be used as the source for effective digital FIRM Database data when starting FIRM updates and used for mandatory edge matching at county/community boundaries. If the adjacent area is being studied, the study data must be used as appropriate.
364	10/1/2011	Existing standard Already implemented	FIRM Database	Working Standard	The FIRM Database must not contain duplicate spatial features.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
365	10/1/2011	Existing standard Already implemented	FIRM Database	Working Standard	All included tables of the FIRM Database shall be documented in the metadata in accordance with the Metadata Profiles Technical Reference, and the software release of the personal geodatabase submitted shall also be documented.
366	10/1/2011	Existing standard Already implemented	Projections and Coordinate Systems	Working Standard	FIRM Database tables must comply with the following database schema properties defined in the FIRM Database Technical Reference: • Tables and Feature Classes • Spatial Reference Systems • Topology Rules • Domains
367	11/30/2019	Effective for all projects that have not started QR5.	FIRM Database	Working Standard	All final revised FIRM panels in the FIRM database, both printed and non- printed, shall get new FIRM panel Map Number suffixes and effective dates in the S_FIRM_Pan feature class.
369	10/1/2011	Existing standard Already implemented	FIRM Database	Working Standard	Floodplain boundary lines in the FIRM Database must be generalized to no more than an average of one vertex every 10 feet while still meeting FBS standards.
370	10/1/2011	Existing standard Already implemented	FIRM Database	Working Standard	FIRM Database Flood Theme and Base Map features shall not have disconnects, jogs, or missing features during edge matching and at community boundaries.
371	11/30/2021	Implemented with all newly initiated Fiscal Year 2020 Flood Risk studies and MT-2s received after the automated mapping tool is implemented	Data Capture	Working Standard	The following regulatory deliverables must be submitted using the file formats and directory structure specified in the Data Capture Technical Reference: • FIRM Database • FIRM Scans • FIS Report • Transmittal to Community CEO • Inventory Worksheet for Each Community
372	10/1/2011	Existing standard Already implemented	FIRM Database	Working Standard	Coincident features must share the same geometry, vertex for vertex, within the FIRM database files.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
373	1/1/2013	Existing standard Already implemented	FIRM Database	Program Standard	The FIRM Database must be submitted using the schema found in the FIRM Database Technical Reference.
374	11/30/2023	Effective immediately	BFEs	Working Standard	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.
375	11/30/2022	Effective immediately	Levee	Working Standard	The S_Levee table is required for any Preliminary or Final FIRM Database that includes levees, floodwalls, embankments, or structures that have been designed, operated, and maintained as levees, whether or not they have been demonstrated to meet the NFIP requirements per Code of Federal Regulations Title 44 CFR § 65.10.
377	11/30/2022	Effective Immediately	National Flood Hazard Layer (NFHL)	Working Standard	For PMRs, once the NFHL for a community is converted to the latest FIRM database schema, all database submissions are required to conform to this schema. For non-FEMA funded external data studies or portions of a study where the engineering is unrevised, attribute data associated with the schema may be excluded if not needed for FIRM or FIS production and approved by the FEMA Project Officer. Exclusions for data needed to produce FIRM panels with AMP are not allowed. Each exclusion must be documented in the FIRM Database metadata file that accompanies the submittal.
378	7/31/2013	Implemented for any project not yet at preliminary	PMR	Working Standard	For PMRs where updated political boundaries are available for the entire extent of the FIRM database, the S_Pol_AR feature class shall be incorporated into the RFHL and shown on the FIRM Index.
379	6/1/2012	Existing standard Already implemented	National Flood Hazard Layer (NFHL)	Working Standard	For PMRs, the revised FIRM database layers within the PMR panel footprint shall be incorporated into the RFHL. Certain layers such as watershed boundaries, nodes, and political areas may extend outside of the PMR footprint.
383	4/1/2003	Existing standard Already implemented	Coordination	Working Standard	After preliminary issuance of the FIS Report and FIRM, any major changes must be coordinated with the FEMA Regional office.

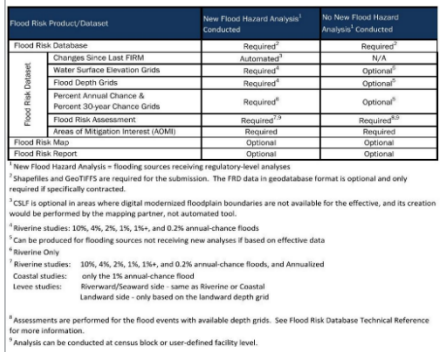
SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
384	11/30/2023	Effective immediately	Correspondence	Working Standard	For Flood Risk Projects, a CCO meeting is required to occur following the issuance of preliminary products. The state NFIP coordinator's office should be 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.
385	11/30/2023	Effective immediately	Fed Register	Program Standard	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.
386	4/11/2019	Effective immediately	Fed Register	Program Standard	The community and other affected stakeholders must be notified when corrections are required to the newspaper notice or Federal Register.
387	11/30/2023	Effective immediately	Fed Register	Program Standard	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.
388	12/1/2011	Existing standard Already implemented	Appeals Process	Program Standard	The statutory 90-day administrative appeal period cannot be extended; no appeals will be accepted after the 90-day appeal period.
389	12/1/2011	Existing standard Already implemented	Appeals Process	Program Standard	Written acknowledgement of all data submitted during the statutory appeal period shall be provided to the affected community.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
390	12/1/2011	Existing standard Already implemented	Appeals Process	Working Standard	When performing new analyses and developing revised flooding information, appellants must tie the new BFEs, base flood depths, SFHA boundaries, SFHA zone designations, and/or regulatory floodway boundaries into those shown on the FIRM and in the FIS Report for areas not affected by the appeal.
391	4/11/2019	Effective immediately	Appeals Process	Program Standard	FEMA shall evaluate comment and appeal submittals, and prior to LFD, FEMA or its designee must provide the community with a resolution letter and must provide a copy of the revised FIRM if flood hazard changes were made as a result of the comment or appeal.
392	11/1/2010	Existing standard Already implemented	Scientific Resolution Panel (SRP)	Program Standard	The Scientific Resolution Panel must be made available to communities that submit qualifying scientific and/or technical data during the 90-day administrative appeal period.
393	1/1/2013	Existing standard Already implemented	Post- Preliminary Deliverables	Program Standard	A copy of the final FIRM must be delivered to affected communities 90 days before the effective date.
394	4/1/2003	Existing standard Already implemented	Post- Preliminary Deliverables	Working Standard	The Engineering Library shall be the official repository for all technical engineering data including any LOMCs, TSDN and related Flood Risk Project documentation. Information shall be archived and maintained in accordance with FEMA records management standards.
395	4/11/2019	Effective immediately	Post- Preliminary Deliverables	Working Standard	Interim FEDD files must be submitted to FEMA for review: • Concurrent with QR4 Part 1 • Prior to KDP 5 submittal
396	1/1/2013	Existing standard Already implemented	Post- Preliminary Deliverables	Working Standard	During post-preliminary processing the FEDD and all associated correspondence must be compiled for each affected community in accordance with all relevant regulations. When more than one entity is responsible for post-preliminary activities, each entity must ensure the FEDD and all related documentation is complete at the time the responsibility is transferred to the next entity.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
397	1/1/2013	Existing standard Already implemented	Post- Preliminary Deliverables	Working Standard	The following data must be submitted at the end of each mapping project: • FBS Self-Certification Document (submitted within 30 days after issuance of preliminary maps); • QA report stating compliance with the FBS standard. • Revised Floodplain Boundary Standard Self-Certification Document (submitted within 30 days after issuance of the LFD if floodplain boundaries • were revised during the post-preliminary phase); • Correspondence file including any documentation not previously submitted during earlier tasks or as part of the FEDD file related to coordination and processing decisions made during the Flood Risk Project. • FEDD for each affected community • FEDD Checklist for each FEDD file • TSDN Checklist and Certification form
398	1/1/2013	Existing standard Already implemented	Post- Preliminary Deliverables	Working Standard	The FEDD files must be separate for each community.
400	6/1/2010	Existing standard Already implemented	Post- Preliminary Deliverables	Working Standard	Map Service Center deliverables must be uploaded through the MIP for all Flood Risk Projects.
401	4/1/2003	Existing standard Already implemented	Letter of Final Determination (LFD)	Program Standard	The LFD date must be no sooner than 60 days after the end of the 90-day administrative appeal period or following resolution of all appeals, whichever is later.
402	4/11/2019	Effective for all projects that have not yet been submitted for KDP5 approval	Letter of Final Determination (LFD)	Program Standard	The LFD package shall be submitted to FEMA HQ, once KDP5 has been approved, for review and approval prior to issuing LFDs to affected communities.
403	4/1/2003	Existing standard Already implemented	Letter of Final Determination (LFD)	Program Standard	FEMA shall publish a final FHD notice in the Federal Register no later than three months (90 days) following issuance of the LFD.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
404	4/1/2003	Existing standard Already implemented	Letter of Map Change (LOMC)	Working Standard	The Compendium of Flood Map Changes shall be published every six months (180 days). Publication shall occur within 15 days of the close of the 6-month reporting period.
405	4/11/2019	Effective for projects whose revalidation letters have not yet been submitted	Revalidation	Program Standard	Four weeks before the effective date of the revised map, the revalidation package shall be submitted to FEMA for review and approval using the standardized checklist, located at the Flood Risk Templates and Other Resources page on the FEMA website, prior to issuing the revalidation letters.
406	4/11/2019	Effective immediately	Revalidation	Program Standard	The LOMC-VALID letter shall be provided to the community CEO and floodplain administrator and the LOMC Subscription Service Coordinator within five business days of the effective date of the revised FIRM(s).
407	4/11/2019	Effective immediately	Letter of Map Change (LOMC)	Program Standard	FEMA will make available the following at regular intervals: • final LOMCs with attachments • final SOMAs • revalidation letters.
408	4/1/2003	Existing standard Already implemented	Letter of Map Change (LOMC)	Working Standard	Requests for Letters of Determination Review (LODRs) shall be processed.
409	4/1/2003	Existing standard Already implemented	Due Process	Program Standard	Suspension notification letters shall be distributed to communities that have not yet adopted NFIP-compliant ordinances within 90 days and 30 days prior to the FIRM effective date.
410	4/1/2003	Existing standard Already implemented	Correspondence	Working Standard	Over the life of a Flood Risk Project, NFIP eligibility shall be reviewed and related correspondence shall be prepared for newly-eligible communities.
411	11/30/2023	Effective Immediately	Federal Register	Program Standard	FEMA will publish a notice of community eligibility on an official FEMA website per Code of Federal Regulations Title 44 CFR § 64.6.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
412	12/3/2008	Existing standard Already implemented	Coastal - Mapping	Working Standard	For coastal Flood Risk Projects, the LiMWA must be calculated, where appropriate.
413	1/1/2013	Existing standard Already implemented	Flood Risk Datasets	Working Standard	Locally-provided, -sourced, or -validated building footprint, location, and/or population data shall be the only acceptable data sources to be used to populate structure and population count attributes within the CSLF dataset.
414	11/30/2023	Effective immediately	Flood Risk Datasets	Working Standard	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.
415	12/21/2020	Effective Immediately	Flood Risk Datasets	Working Standard	Water-surface elevation (WSEL) grids produced as part of a Flood Risk Project must be of such a quality that they can be used for regulatory and other official purposes and blended into a seamless dataset. For each mapped flood frequency (e.g. 1 percent, 0.2 percent, etc.), there must be agreement in extent and coverage between the WSEL grid and its associated flood hazard area polygon.
416	1/1/2013	Existing standard Already implemented	Flood Risk Datasets	Working Standard	Depth and Analysis Grids must share the same terrain and bathymetry source datasets as the engineering models.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
417	11/30/2023	Effective Immediately	Flood Risk Datasets	Program Standard	The minimum datasets associated with the Flood Risk Project are defined as follows: (Refer to Figure 3 in Appendix C): 
418	1/1/2013	Existing standard Already implemented	Flood Risk Datasets	Working Standard	Depth grids for open water shall reflect the depth of flooding above normal pool.
419	1/1/2013	Existing standard Already implemented	Flood Risk Datasets	Working Standard	The extent of water surface elevation change grids shall, at a minimum, reflect those areas that were both SFHA before and after the revision.
421	1/1/2013	Existing standard Already implemented	Flood Risk Datasets	Program Standard	To ensure privacy, sensitive claims data will be aggregated and/or generalized at the centroid of the census block and represented as a point.
425	5/31/2016	Existing standard Already implemented	Flood Risk Datasets	Working Standard	The National Flood Hazard Layer (or other comparable dataset with all effective FIRMs and LOMRs incorporated) shall be the source for the effective flood hazard area data used to develop non-regulatory flood risk products.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
429	11/30/2021	Effective immediately	Data Capture	Working Standard	The following final flood risk product deliverables must be submitted using the file formats and directory structure specified in the Data Capture Technical Reference: • Flood Risk Database • Depth and Analysis Rasters • Metadata file
432	1/1/2013	Existing standard Already implemented	Flood Risk Database	Working Standard	Datasets in the FRD must be delivered in their entirety even if a portion of the dataset lies outside the define project footprint.
433	11/30/2023	Effective immediately	Flood Risk Database	Working Standard	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.
442	11/30/2023	Effective immediately	Flood Risk Database	Program Standard	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
443	12/21/2020	Effective Immediately	Flood Risk Database	Program Standard	Do not populate the L_Claims table. Please refer to OpenFEMA for all NFIP policy and claims information
444	11/30/2016	Effective for new applications submitted to FEMA for levee accreditation	Levee	Program Standard	Levee systems can only be accredited when compliance with Code of Federal Regulations Title 44 C.F.R. § 65.10 is demonstrated. Compliance includes demonstrating that an emergency preparedness plan has been adopted by the community that at a minimum, includes the area impacted by the levee system, and includes procedures for emergency operation and public evacuation, meeting the standards of 44 C.F.R. § 65.10(c)(3).
445	4/1/2009	Existing standard Already implemented	Levee	Program Standard	FEMA will not grant extensions to the 24-month PAL period.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
446	4/1/2009	Existing standard Already implemented	Levee	Program Standard	Levee accreditation must be based upon detailed H&H analyses.
447	11/30/2022	Effective immediately	Levee	Program Standard	If the levee system does not continue to meet the criteria within Code of Federal Regulations Title 44 CFR § 65.10, FEMA shall initiate the analysis and mapping procedure for non-accredited levee systems.
448	11/30/2022	Effective immediately	Levee	Program Standard	A levee system shall only be designated by FEMA as a Provisionally Accredited Levee (PAL) if the levee system is shown as providing base flood hazard reduction on the effective FIRM, has a formally adopted Operation and Maintenance Plan, and, the owner of the levee system or the community is attempting to compile and certify levee documentation to demonstrate continuation of compliance per Code of Federal Regulations Title 44 CFR § 65.10. The opportunity for a PAL designation is only offered one time for any given system.
449	9/1/2006	Existing standard Already implemented	Levee	Program Standard	If a levee system qualifies for the PAL designation, the affected communities will be given an opportunity to sign a PAL agreement.
450	2/1/2009	Existing standard Already implemented	Levee	Program Standard	A structure shall only be considered a levee when it can be demonstrated that the structure was designed and has been operated and maintained as a levee. Structures that cannot meet these requirements cannot be considered for accreditation under Code of Federal Regulations Title 44 C.F.R. § 65.10.
452	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013	Floodway	Working Standard	Floodway boundaries shall be placed on the riverside of a levee unless the community specifically requests otherwise, or where hydraulic calculations demonstrate a floodway is warranted elsewhere.
501	7/31/2013	Implemented for all projects once the NFHL for a community is converted to the latest FIRM Database schema	FIS Report	Working Standard	For Flood Risk Projects that have at least one FIRM panel produced in compliance with the current FIRM Panel Technical Reference, but whose FIS Report is not produced in compliance with the current FIS Report Technical Reference (i.e., the FIS Report is retaining its legacy format) the FIRM Legend and Notes to Users must be included as an appendix to the FIS Report per the current FIS Report Technical Reference.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
502	12/8/2011	Existing standard Already implemented	FIRM Index	Working Standard	For FIRM Indexes produced in compliance with the current FIS Report Technical Reference, all required elements of the FIRM Index title block and Index collar shall be present and symbolized as outlined in the Technical Reference.
503	12/8/2011	Existing standard Already implemented	FIRM Index	Working Standard	For FIRM Indexes produced in compliance with the current FIS Report Technical Reference, the symbology and labeling of all features depicted on the FIRM Index shall adhere to the specifications outlined in the Technical Reference.
504	7/31/2013	Implemented for all projects once the NFHL for a community is converted to the latest FIRM Database schema	FIS Tables	Working Standard	For FIS Reports produced in compliance with the FIS Report Technical Reference, map repositories for all communities must be present and correct in the "Map Repositories" FIS Report table. Flood Risk Projects whose FIS Reports are not produced in compliance with the current FIS Report Technical Reference (i.e., the FIS Report is retaining its legacy format per FEMA Regional approval), but whose FIRM Index is produced in compliance with the FIS Report Technical Reference, must include a correctly populated "Map Repositories" table in the FIS Report. FIRM Indexes that are not produced in compliance with the FIS Report Technical Reference must include the map repository information on the Index.
505	7/31/2013	Implemented for all projects once the NFHL for a community is converted to the latest FIRM Database schema	FIS Tables	Working Standard	FIS Reports not produced in compliance with the FIS Report Technical Reference (per FEMA Regional approval), but whose FIRM Index is produced in compliance with the Technical Reference, must include a correctly populated "Listing of NFIP Jurisdictions" table in the FIS Report. FIRM Indexes that are not produced in compliance with the FIS Report Technical Reference must include the Listing of Communities table on the FIRM Index.
506	2/1/2002	Existing standard Already implemented	Flood Profiles	Working Standard	Flood Profile notes and labels must be correct and agree with the FIRM and Floodway Data Table (if applicable).
507	12/21/2020	Effective immediately	FIS/FIRM	Working Standard	The FIRM, FIRM database, National Flood Hazard Layer, Flood Profiles and Floodway Data Tables must all agree with each other, including decimal point precision, as it relates to the depiction of flood hazards and hydraulic structures.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
508	4/11/2019	Effective immediately	Quality Management	Program Standard	Quality Reviews 1 through 8 must be conducted using standardized checklists located at the Flood Risk Templates and Other Resources page on the FEMA website. Associated requirements for each review are as follows: • QR1: The draft FIRM database shall be uploaded to the MIP for auto validation and must pass before QR2 is conducted. • QR2: The preliminary FIRM database shall be uploaded to the MIP for auto validation and must pass before QR3 is conducted. • QR3: The preliminary FIS Report, FIRM, Preliminary letters and SOMA shall be reviewed using standardized checklists after the work has been self- certified as meeting FEMA standards. The FIS Report, SOMA, Preliminary letters, FIRM and FIRM database shall not be issued at preliminary until written certification is provided indicating that all issues cited at this review were properly addressed and resolved. • QR4: If a 90-day appeal period is required, information must be entered or uploaded into the MIP task for review. This review validates the Proposed Flood Hazard Determination Notice information, interim FEDD Files, newspaper notice, Appeal Period Docket information and 90-day start letter(s) shall be reviewed using standardized checklists. FEMA must provide approval prior to the issuance of the 90-day start letter(s) • QR5: The FIRM database shall be auto-validated in the MIP and a visual review shall be conducted using standardized checklists to compare the FIRM database to the printed FIRM and all cited issues must be resolved before the LFD will be distributed. • QR6: This review validates the products prior to LFD distribution. LFD Verification Summary, LFD Questionnaire, LFD letters, and Final SOMA are prepared and submitted, concurrent with QR5 and QR7 and shall be reviewed using standardized checklists. All cited issues must be resolved before the LFD will be distributed. • QR7: The final FIS Report, FIRM and associated paperwork shall be reviewed using standardized checklists before delivery to the MSC and all cited issues must be resolved before the LFD will be distributed. • QR8: A review of the FIS Report, FIRM, MSC paperwork, and delivery manifest shall be conducted by the FEMA Map Service Center using
509	7/31/2013	Implemented with all projects not yet final	Quality Management	Program Standard	All Quality Compliance Check issues noted during the QR1 through QR8 process must be fully addressed, documented and resolved.
510	7/31/2013	Implemented with all projects not yet final	Quality Management	Program Standard	Standardized checklists must be used at FEMA-designated Quality Reviews. Those checklists, which are located at https://www.fema.gov/media-collection/flood-risk-templates-and-other-resources must be retained as quality records, and delivered as part of the TSDN.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
512	7/31/2013	Implemented with all projects not yet final	Quality Management	Program Standard	Self-Certification of compliance with FEMA standards must be provided before a QR3 review may be executed. A template for this requirement is available here
513	7/31/2013	Implemented with all projects not yet final	Quality Management	Program Standard	Written certification must be provided, documenting that all QR3 non- compliance citations were properly addressed and resolved, in order to complete the QR3 process. A template for this requirement is available here.
514	12/1/2008	Existing standard Already implemented	Quality Management	Program Standard	Following the QR4 review, any identified errors must be corrected prior to the 90-day Start letter distribution.
515	12/1/2008	Existing standard Already implemented	Due Process	Program Standard	The 90-day comment period for the Federal Register Proposed FHD Notice and the 90-day statutory appeal period must overlap by at least one day. If the 90-day appeal period does not begin prior to the end of the Federal Register 90-day comment period, in coordination with FEMA, the Federal Register publication must be withdrawn and the FHD notice must be republished.
516	11/30/2023	Effective immediately	Due Process	Working Standard	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.
517	11/30/2022	Existing standard Already implemented	Post- Preliminary Deliverables	Working Standard	The FIRM Database (including metadata) and the FIRM image files must be submitted to the MIP and FEMA (or their designee) must be notified at least 60 days prior to the anticipated LFD date.
518	12/1/2008	Existing standard Already implemented	Quality Management	Program Standard	All outstanding map changes must be incorporated into the FIRM before proceeding with the QR5 database and visual review.
519	12/1/2008	Existing standard Already implemented	LFD	Program Standard	The FIS Report, FIRM, and FIRM database must pass QR5, QR6, and QR7 before the LFD may be distributed.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
520	11/30/2022	Existing standard Already implemented	Post- Preliminary Deliverables	Program Standard	At least 45-days before the projected LFD date the final LFD letters, Part 67 Final Notice, and Final SOMAs must be submitted. No less than 4-weeks before the LFD the final LFD Summary Sheet/Dockets must be consolidated and sent to FEMA HQ for approval.
521	2/28/2018	For any study not yet submitted to QR5	Quality Management	Program Standard	At least 60 days prior to the projected LFD date after receiving a passing QR5 auto-validation report for the FIRM database, the QR5 visual, QR6, and QR7 reviews at the Develop Final Mapping Products Data Capture MIP task must be conducted.
522	11/30/2022	Effective immediately	LFD	Working Standard	As part of the LFD Docket MIP task, the LFD Verification Summary, LFD Letters and Final SOMA must be submitted, concurrent with Quality Reviews 5 and 7.
523	2/28/2018	Effective immediately	SOMA	Working Standard	On the SOMA, structure removals must not be included in Category 1; LOMRs must not be included in Category 2A or 2B; and LOMRs and single- determination LOMCs must not be included in Category 4.
524	4/11/2019	Effective immediately	SOMA	Working Standard	When multiple determination LOMAs and LOMR-Fs include both removal and non-removal determinations, and all determinations remain the same based on the new or revised mapping, the case must be included in Category 2A or Category 2B in the MIP SOMA Workbench.
525	4/11/2019	Effective immediately	SOMA	Working Standard	On the Preliminary and Final SOMA, the map number and map suffix must be listed in the Original Panel field and Current Panel field for each valid LOMC. On the Revalidation Letter, the FIRM Panel Number and map suffix must be listed for each valid LOMC.
527	4/1/2003	Existing standard Already implemented	SOMA	Working Standard	Any LOMCs issued prior to the effective date of the current respective FIRM panel must be included on the SOMA if they are listed on a current revalidation letter for the community.
528	4/1/2003	Existing standard Already implemented	SOMA	Working Standard	The SOMA must include the community name, CID, case number, date issued and project identifier for each LOMC listed.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
529	4/1/2003	Existing standard Already implemented	SOMA	Working Standard	The FIRM Effective date must be listed on the Final SOMA.
530	7/31/2013	Applicable for LOMCs initiated after the effective date, but not retroactively for ongoing or completed LOMCs	Coastal - Analysis	Working Standard	All requests for flood map revisions based upon new or modified flood control structures shall include an analysis of the potential adverse impacts of the structure on flooding within, and adjacent to, the area protected by the structure. For coastal structures, this analysis must also evaluate the impacts of the structure on erosion within, and adjacent to, the protected area.
531	1/1/2013	Existing standard Already implemented	Flood Risk Datasets	Program Standard	Metadata for non-regulatory flood risk datasets must comply with the Metadata Technical Reference.
532	1/1/2013	Existing standard Already implemented	Flood Risk Datasets	Program Standard	Attribute domains for non-regulatory flood risk datasets must comply with the Domain Tables Technical Reference.
533	10/1/2011	Existing standard Already implemented	FIRM Database	Program Standard	Metadata for FIRM databases must comply with the Metadata Profiles Technical Reference.
534	10/1/2011	Existing standard Already implemented	FIRM Database	Program Standard	Attribute domains for FIRM databases must comply with the Domain Tables Technical Reference.
535	7/31/2013	Implemented for all projects once the NFHL for a community is converted to the latest FIRM Database schema	LOMR Incorporation	Working Standard	When a PMR is processed that will only partially include an effective LOMR, all FIS Report components of the LOMR (including Flood Profiles and Floodway Data Tables) must be included in the revised FIS Report that is issued with the PMR. When the partially-included LOMR is re-issued, it must not include any FIS Report components and it will only include revisions for the FIRM panel(s) not revised with the PMR. The LOMR must be re-issued within three days of the FIS Report / FIRM effective date.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
536	7/31/2013	Applicable for all coastal Flood Risk Projects in the data development stage where the erosion analyses have not been completed yet	Coastal - Analysis	Working Standard	For Atlantic Ocean and Gulf of Mexico coastal Flood Risk Projects, the 1- percent-annual-chance water level datum, above which the dune reservoir volume will be calculated for erosion analyses, will include storm surge, tidal effects, and wave setup components.
537	2/28/2018	Effective immediately	Coastal - Waves	Working Standard	LOMRs revising coastal flooding shall use the effective still water elevations and shall include wave setup.
538	11/30/2022	Effective immediately	Levee	Program Standard	FEMA will not fund any efforts related to developing and/or certifying data for levee accreditation or making determinations on the levee's structural conditions. This includes performing the required analyses on the performance of interior drainage systems within the levee impacted area.
539	7/31/2013	For all non- accredited levee projects that were previously on-hold and for newly initiated flood risk projects after the effective date, or after Congressional LAMP briefing(whichever is later)	Levee	Program Standard	The natural valley floodplain behind non-accredited levee systems shall be modeled and depicted as an SFHA, except when additional analysis indicates an alternate treatment. The natural valley floodplain behind non-accredited levee systems shall only be depicted as Zone D when freeboard deficient, sound reach, overtopping, and structural-based inundation procedures are implemented.
540	7/31/2013	For all non- accredited levee projects that were previously on-hold and for newly initiated flood risk projects after the effective date, or after Congressional LAMP briefing(whichever is later)	Levee	Working Standard	Levee systems must be hydraulically independent whereby if one system fails, the area behind another system is not inundated.
541	7/31/2013	For all non- accredited levee projects that were previously on-hold and for newly initiated flood risk projects after the effective date, or after Congressional LAMP briefing(whichever is later)	Levee	Working Standard	A Local Levee Partnership Team (LLPT) must be established with participation of diverse stakeholders based on the complexity and scope of the levee system under evaluation. The options discussed by the LLPT members and FEMA's decisions regarding the appropriate analysis and mapping procedures to be used, must be documented and made available to stakeholders.
542	11/30/2022	Effective immediately	Levee	Working Standard	For levee systems located on both sides of a flooding source, in series, or for multiple systems that have overlapping levee impacted areas, the extents of the natural valley area and reach-specific SFHAs for each system will be analyzed independently assuming the other systems remain in place.

<table>
<tr><th>SID #</th><th>Effective Date</th><th>Implementation Description</th><th>Category</th><th>Standard Type</th><th>Standard</th></tr>
<tr><td>543</td><td>7/31/2013</td><td>Effective immediately</td><td>Levee</td><td>Working Standard</td><td>The following reach analysis approaches and corresponding data requirements shall be utilized when analyzing non-accredited levee systems: (Refer to Figure 4 in Appendix C):
<table>
<tr><th></th><th></th><th colspan="5">Reach Analysis Procedures</th></tr>
<tr><th>Data Element</th><th>Link to CFR</th><th>Sound Reach</th><th>Freeboard Deficient</th><th>Overtopping</th><th>Structural-Based Inundation</th><th>Natural Valley</th></tr>
<tr><td>Elevation Information for the Levee Crest and Toe</td><td>N/A</td><td>Required</td><td>Required</td><td>Required</td><td>Required</td><td>N/A</td></tr>
<tr><td>BFE + Freeboard Less than Levee Crest</td><td>44CFR65.10(b)(1)</td><td>Required</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>BFE Less than Levee Crest</td><td>N/A</td><td>Required</td><td>Required</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Operations and Maintenance Plan</td><td>44CFR65.10(c)</td><td>Required</td><td>Required</td><td>Required</td><td>Recommended</td><td>N/A</td></tr>
<tr><td rowspan="5">Structural Design Requirements</td><td>44CFR65.10(b)(2)</td><td rowspan="5">Required</td><td rowspan="5">Required</td><td rowspan="5">Required</td><td rowspan="5">N/A</td><td rowspan="5">N/A</td></tr>
<tr><td>44CFR65.10(b)(4)</td></tr>
<tr><td>44CFR65.10(b)(5)</td></tr>
<tr><td>44CFR65.10(b)(6)</td></tr>
<tr><td>44CFR65.10(b)(7)</td></tr>
<tr><td>Inspection Reports</td><td>44CFR65.10(c)(2)(iv)</td><td>Required</td><td>Required</td><td>Required</td><td>Recommended</td><td>N/A</td></tr>
<tr><td>Evaluation of Overtopping Erosion Potential</td><td>N/A</td><td>N/A</td><td>N/A</td><td>Required</td><td>N/A</td><td>N/A</td></tr>
</table></td></tr>
<tr><td>544</td><td>11/30/2022</td><td>Effective immediately</td><td>Levee</td><td>Working Standard</td><td>The final SFHA delineation shown on the FIRM landward of the non- accredited levee system shall be based on a composite of flooding results from each independently analyzed reach and any interior drainage flooding of the system.</td></tr>
<tr><td>545</td><td>7/31/2013</td><td>For all non- accredited levee projects that were previously on-hold and for newly initiated flood risk projects after the effective date, or after Congressional LAMP briefing(whichever is later)</td><td>Levee</td><td>Working Standard</td><td>The resulting floodplain from the analysis of a Structural Based Inundation reach must reflect the fact that a breach could occur at any location along the reach.</td></tr>
<tr><td>546</td><td>7/31/2013</td><td>For all non- accredited levee projects that were previously on-hold and for newly initiated flood risk projects after the effective date, or after Congressional LAMP briefing(whichever is later)</td><td>Levee</td><td>Working Standard</td><td>If BFEs are to be shown on the FIRM landward of non-accredited levee systems, they shall be based on the highest elevation of the composite analysis and mapping.</td></tr>
<tr><td>547</td><td>11/30/2014</td><td>Existing standard Already implemented</td><td>Elevation Data</td><td>Working Standard</td><td>If topographic breaklines are produced and submitted, the Topographic Breakline Topology Rules outlined in the Data Capture Technical Reference must be followed.</td></tr>
</table>

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
549	11/30/2014	Existing standard Already implemented	Metadata	Working Standard	The metadata files submitted for each applicable task must comply with the Metadata Profiles Technical Reference and must document the data being submitted and include the following elements: • Identification Information • Data Quality Information • Spatial Reference Information • Entity and Attribute Information • Distribution Information • Metadata Reference Information
550	4/1/2003	Existing standard Already implemented	Letter of Map Revision (LOMR)	Program Standard	If a LOMR results in a new or increased BFE or a new or increased SFHA, the requester must notify the property owner(s) of the impact of the LOMR on their property.
551	11/30/2016	Effective for all newly funded PMR preliminary map processing or newly initiated PMRs	PMR	Working Standard	When FEMA is processing a PMR, the footprint shall be defined as the boundary of the FIRM panel(s) affected by the PMR's study area. All FIRM Database and FIRM Graphic standards, as well as appropriate DVT checks and quality reviews, apply to the footprint and are not limited to the PMR's study area.
552	12/1/2008	Existing standard Already implemented	Quality Management	Program Standard	A Quality Management Plan that prescribes protocols for ensuring consistent compliance with FEMA Standards must be in place.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
553	2/28/2018	Effective immediately	SOMA	Program Standard	LOMCs shall be categorized on the SOMA as follows: • -Category 1 (LOMCs Incorporated) - Includes those LOMRs (and some LOMAs and LOMR-Fs) whose results are unaffected by new or revised flood hazard data, and whose results can and will be incorporated into the revised FIRM panel(s). Large metes-and-bounds or multi-lot property removal LOMR- Fs are sometimes incorporated through Category 1 when scale limitations do not prohibit it; although typically, these LOMAs and LOMR-Fs will be revalidated through Category 2. Structure removal (both single and multiple determination) LOMCs cannot be incorporated due to scale limitations and therefore shall not be included in Category 1. • Category 2A (LOMCs Not incorporated on revised panels) - Includes those valid LOMCs that shall remain effective and / or are within the revised panel footprint of the study. • Category 2B (LOMCs Not incorporated on unrevised panels) – Includes those valid LOMCs within a community that shall remain effective and / or fall on unrevised panels within that community. • Category 3 (LOMCs Superseded) - Includes those LOMCs whose results will not be reflected on the revised FIRM panel because the flood hazard data on which the determinations are based are being superseded by new detailed flood hazard data, or the information available was not sufficient to make a determination. • Category 4 (LOMCs To Be Redetermined) - Includes those LOMAs and LOMR-Fs issued for multiple lots or structures for which new determinations must be made because the determination for one or more properties or structures has changed as a result of the new or revised flood hazard information, and therefore cannot be revalidated.
555	10/1/2011	Existing standard Already implemented	National Flood Hazard Layer (NFHL)	Working Standard	RFHL to NFHL submissions must include all up-to-date revisions and study data inclusive in a DFIRM ID.
556	7/31/2013	Implemented with all new flood risk projects initiated in Fiscal Year2013	Stakeholder Engagement	Program Standard	All Flood Risk Projects must have a communications plan designed to keep project stakeholders informed of all key decisions, draft findings and finished outputs. The plan shall also be designed to regularly engage key stakeholders in dialog about local risks and potential actions to manage and reduce those risks.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
600	11/30/2022	Effective immediately	Appeals Process	Program Standard	An administrative appeal period must be offered for any FIRM updates including letters of map revision where Flood Hazard Data updates are made. Flood Hazard Data changes include: • New BFEs or base flood depths are proposed or currently effective BFEs or base flood depths have been modified; • New SFHAs are proposed or the boundaries of currently effective SFHAs have been modified; • New zone designations are proposed or currently effective SFHA zone designations have been modified; or • New regulatory floodways are proposed or the boundaries of currently effective floodways that have been modified. In order to qualify as an appeal, scientific and/or technical data demonstrating these changes are incorrect must be provided.
601	4/11/2019	Effective immediately	Fed Register	Program Standard	The Community Map Repository address for each community listed in the Proposed Flood Hazard Determination Notice must be a physical address (i.e., not a P.O. Box) confirmed by the community. Additionally, the repository address must be consistent among all related products on FEMA's website (FIS, FIRM Index, FIRM Database, Populate FHD MIP task, and Federal Register), before starting the statutory 90-day appeal period.
602	11/30/2022	Effective for all FY23 studies and beyond	Levee	Program Standard	For the analysis and mapping of flood hazards associated with levee systems, data and documentation from the USACE National Levee Database (NLD) must be leveraged as a starting point. Effective FEMA data and supplemental data from local communities, tribal entities or other federal or state agencies, including terrain data, should be evaluated, and the most accurate data shall be used. FEMA shall provide USACE with updated levee data for incorporation into the NLD as appropriate.
603	11/30/2014	Implemented for any new community request received after March 21, 2014	Levee	Program Standard	Requests for a determination of adequate progress toward completion of flood protection systems must meet the data and documentation requirements outlined in Code of Federal Regulations Title 44 C.F.R. § 61.12, except where superseded by Section 19, Part a, of the Homeowner Flood Insurance Affordability Act, 42 U.S.C. § 4014(e). Zone A99 requests may be submitted for projects constructing or reconstructing flood protection systems. Requests will not be limited to projects with federal funding, and the present value of the system can be used to meet the requirements of 44 C.F.R. § 61.12(b).

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
604	11/30/2014	Implemented for any new community request received after March 21, 2014	Levee	Program Standard	Map revision requests to reflect flood control system restoration projects with a Zone AR designation must meet the data and documentation requirements outlined in Code of Federal Regulations Title 44 C.F.R. § 65.14, except where superseded by Section 19, Part b, of the Homeowner Flood Insurance Affordability Act, 42 U.S.C. § 4014(f). Zone AR requests may be submitted for levees in riverine and coastal areas, except when the landward flood zone of the existing structure would be defined as a Coastal High Hazard Area. Requests will be reviewed without regard to federal funding or participation, and restoration projects must be complete or meet the requirements of 44 C.F.R. § 61.12 within a specified timeframe, not to exceed 10 years, from the date the community submits the request for a Zone AR determination by FEMA.
605	11/30/2014	Effective immediately	National Flood Hazard Layer (NFHL)	Program Standard	Flood Insurance Rate Maps, FIRMettes, and NFHL Databases are the official FEMA digital products. The official FEMA digital products and printed versions produced from the official digital products are all equivalent to each other and represent official FEMA designations of the areas of special flood hazard, base flood elevations, insurance risk zones and other regulatory information, provided that all other geospatial data shown on the printed product meets or exceeds any accuracy standard promulgated by FEMA. Products using FEMA's regulatory data must include a statement that they conform to this standard in order to be used in place of the official FEMA digital products.
606	11/30/2014	Existing standard Already implemented	National Flood Hazard Layer (NFHL)	Program Standard	When a coordinate grid is shown on the FIRM or when the FIRM or NFHL Database version is available, the horizontal location of the flood hazard information is defined with respect to the primary coordinate system shown on the FIRM or stored in the FIRM or NFHL Database product. The horizontal location of the flood hazard information is not defined by its relationship to the base map features such as streets. If there are conflicting interpretations of the precise horizontal location of the areas of special flood hazard, the conflict shall be resolved using the grid coordinates shown on the printed FIRM or stored in the FIRM or NFHL Database products rather than the base map features.
607	11/30/2014	For all projects where the FIRM database has not yet been submitted to the NFHL	National Flood Hazard Layer (NFHL)	Working Standard	NFHL submittals must not contain a single dataset (i.e. DFIRM_ID) which includes future-effective LOMRs with effective dates separated by more than one business day.
608	11/30/2014	For all projects where the FIRM database has not yet been submitted to the NFHL	National Flood Hazard Layer (NFHL)	Working Standard	RFHL submittals must be submitted in a geodatabase format that matches the current NFHL schema in the FIRM Database Technical Reference.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
609	2/28/2018	Effective for Fiscal Year 2018 projects and beyond	National Flood Hazard Layer (NFHL)	Working Standard	DFIRM study data incorporated into the NFHL must be obtained from the Develop Final Mapping Products Data Capture task MIP folder for the associated Risk MAP project case number.
610	11/30/2014	For all projects where the FIRM database has not yet been submitted to the NFHL	National Flood Hazard Layer (NFHL)	Working Standard	All NFHL data superseded by a Risk MAP or LOMR project must be removed from the RFHL prior to submission, and the NFHL must replace all data for a submitted dataset (i.e. DFIRM_ID) in its entirety.
611	11/30/2014	For all projects where the FIRM database has not yet been submitted to the NFHL	National Flood Hazard Layer (NFHL)	Working Standard	NFHL submittals must contain a unique identifier within the primary key fields for all records within a dataset (i.e. DFIRM_ID) and maintain all primary and foreign key relationships as defined in the FIRM Database Technical Reference.
612	7/31/2015	Effective immediately	Key Decision Points (KDPs)	Program Standard	Flood Risk Projects must follow the Key Decision Points (KDPs) process and each KDP must be documented. A Flood Risk Project shall not advance in its project lifecycle beyond a KDP without Regional and HQ approval. The six distinct KDPs: • KDP 0: decision to initiate a Flood Risk Project or group of Flood Risk Projects. • KDP 1: decision to move forward with a Flood Risk Project through data development, risk awareness, and/or outreach tasks • KDP 2: decision to develop Preliminary FIRM products • KDP 3: decision to distribute Preliminary FIRM products to communities • KDP 4: decision to initiate the Appeal Period • KDP 5: decision to issue the LFD
613	7/31/2015	Effective immediately	Coastal - General	Program Standard	FEMA does not issue CLOMA or LOMA determinations in V zones where the primary frontal dunes (PFDs) define the inland limits of V zones.
614	4/11/2019	Effective immediately	Coastal - General	Program Standard	FEMA will only use BFEs in the format of the effective flood hazard map for (C)LOMA or (C)LOMR-F determinations where effective flood hazard areas are the result of coastal flood hazard analysis.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
615	7/31/2015	Effective immediately	Scientific Resolution Panel (SRP)	Program Standard	The Scientific Resolution Panel must issue a report detailing the panel findings in writing to the community and FEMA no later than 90 days after being formed. The Panel Sponsor must publicly identify the date that an SRP was formed on the SRP website.
616	7/31/2015	Effective immediately	Letter of Map Revision (LOMR)	Program Standard	A LOMR or CLOMR requester shall be exempt from submitting a review or processing fee for a request that is based on a project where: (1) the primary purpose is habitat restoration; and (2) where the habitat restoration project is funded in whole or in part with federal or state funds. For the purposes of this fee exemption, "habitat restoration" will have the same meaning as the term "habitat restoration" in the Partners for Fish and Wildlife Act, 16 U.S.C. § 3772(5). This exemption includes projects for dam removal, culvert redesign or installation, or the installation of fish passage if the primary purpose is habitat restoration.
617	7/31/2015	Effective immediately	Prelim Distribution	Program Standard	Congressional notifications required under 42 U.S.C. § 4101b (d)(1)(G) and (H) related to issuance of preliminary maps shall be provided in the monthly "Notice to Congress: Monthly Update on Flood Mapping" report. Issuance of initial preliminary maps and revised preliminary maps must be included.
618	11/30/2015	Applicable for LOMCs initiated after the effective date, but not retroactively for ongoing or completed LOMCs	Letter of Map Revision (LOMR)	Program Standard	All LOMRs issued shall have all revised FIRM Database items prepared in accordance with the FIRM Database Technical Reference and incorporated into the National Flood Hazard Layer (NFHL) with a polygon showing a LOMR area of revision.
619	4/11/2019	Effective Immediately	Coastal - Mapping	Program Standard	When revising the dune feature identified as the Primary Frontal Dune in an effective FIS, the revised feature must be as continuous as, or more continuous than, the effective PFD and provide an accurate representation of the regional dune feature. This is especially important in areas with multiple ridges throughout a dune field, areas with man-made dunes, and property- specific revisions, including requests that the PFD designation be removed altogether. Community coordination may be required to make this assessment.
620	5/31/2016	Effective for all new work funded in Fiscal Year2016	Coordination	Program Standard	Before commencing the analysis and mapping activities that take place during the Data and Product Development Phase of a flood risk study project, FEMA shall provide a written notification to community Chief Executive Officers and Floodplain Administrators that explains the selected modeling, explains why the selected modeling is appropriate, and provides a 30-day period for communities to consult on the appropriateness of the modeling.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
621	4/11/2019	Effective immediately	Coordination	Program Standard	Prior to completion of Quality Review 1, FEMA shall transmit or provide access to the draft FIRM database, along with any other contributing data as requested, to the affected community's Chief Executive Officer and Floodplain Administrator, and provide a 30-day period during which the affected community may provide data to FEMA that can be used to supplement or modify the existing data, and incorporate any data that are consistent with prevailing engineering principles.
622	5/31/2016	Effective for all new work funded in Fiscal Year2016	Stakeholder Engagement	Program Standard	During the Preliminary National Flood Insurance Program Map Release and Due Process phases of the lifecycle for a flood risk study, the Project Team shall work with the FEMA Regional Office of External Affairs, other FEMA staff, community officials, and local radio and television outlets to further educate property owners about flood map revisions and appeals processes.
623	11/30/2016	Effective immediately	Letters of Map Amendment (LOMA)	Program Standard	Within non-participating communities, the Special Flood Hazard Area (SFHA) designation shall not be conditionally or effectively removed by letter from a structure or property that 1) has or will be elevated by the placement of fill, or 2) encroaches the regulatory floodway on the effective FIRM. This is because these reviews require the submission of a completed, signed, and dated Community Acknowledgement Form, which confirms compliance with the participating community's adopted floodplain management ordinance.
624	11/30/2016	Effective immediately	Letters of Map Amendment (LOMA)	Program Standard	The Special Flood Hazard Area (SFHA) designation shall not be conditionally or effectively removed from a structure or property by letter when the lowest adjacent grade to the structure or lowest point on the property is or would be below the applicable 1-percent-annual-chance flood elevation, unless certified data can be presented to demonstrate that naturally occurring intervening high ground exists between the structure or property and the source of flooding.
626	11/30/2016	Effective immediately	Letters of Map Amendment (LOMA)	Program Standard	The Special Flood Hazard Area designation may only be conditionally or effectively removed by letter from a property or portion-of-property that 1) includes the complete footprint of any proposed or existing structures impacted by the removal; and 2) does not include any flooding sources identified on the effective NFIP map.
627	2/28/2018	Effective immediately	Letter of Map Amendment (LOMA)	Program Standard	For Letters of Map Amendment (LOMAs), submitters may use elevation data (typically LiDAR) to document the lowest adjacent grade for a structure or lowest lot elevation for a parcel of land that complies with the USGS National Geospatial Program LiDAR Base Specification Quality Level 3 (QL3) or better and is provided by a federal, state or local government agency.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
628	12/21/2020	Effective immediately	Flood Risk Datasets	Program Standard	All Flood Risk Products will be deemed of acceptable quality if they meet the following conditions: • All Flood Risk Products pass the MIP Validation step • All raster datasets align with the underlying model information used to develop the associated regulatory products • All other database elements align with regulatory products as of the time they are contracted, if they are developed from regulatory products
630	12/21/2020	Implemented with all newly initiated Fiscal Year 2020 Flood Risk studies and MT-2s received after the automated mapping tool is implemented	Map Format and Layout	Program Standard	All preliminary and final FIRM panels, including FIRM attachments delivered with MT-2s, must be developed using the FEMA FIRM panel creation tool. The output panel layout and cartographic design from the FEMA FIRM panel creation tool are considered FEMA compliant with no edits, however the output products, including the FIRM database, must be quality controlled by the producer to confirm the engineering and flood hazard data align with the related regulatory products. Quality control must be performed, documented and completed prior to the issuance of preliminary and final regulatory products.
631	11/30/2019	Effective for all new work funded in Fiscal Year 2020	Financial Management	Program Standard	The Budget Matrix Tool will act as the financial management internal control for the oversight of the Risk MAP Program as a whole.
632	11/30/2019	Effective for all new work funded in Fiscal Year 2020	Financial Management	Program Standard	Program Offices will prepare their spend plans and confirm they do not exceed budget targets, contravene Congressional intent, and are in accordance with applicable laws, policies, and regulations.
633	11/30/2019	Effective for all new work funded in Fiscal Year 2020	Financial Management	Program Standard	FEMA Regional Offices must annually update the P4 tool based on Risk Map projected planning guidance, the financial targets list in the Budget Matrix Tool, and the Fiscal Year Risk MAP Regional Allocations and Performance Metrics Memo.
635	11/30/2019	Effective for all new work funded in Fiscal Year 2020	Financial Management	Working Standard	The full annual Regional allocation must be tracked in the MIP and the total value must match the Budget Matrix Tool when baselined.
636	11/30/2019	Effective for all new work funded in Fiscal Year 2020	Financial Management	Program Standard	Integrated Financial Management Information System (IFMIS) must be the system of record for obligation expenditures and balances.

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SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
637	11/30/2019	Effective for all new work funded in Fiscal Year 2020	Financial Management	Program Standard	The Budget Matrix Tool must comprise the Risk MAP master spend plan report.
638	11/30/2019	Effective for all new work funded in Fiscal Year 2020	Financial Management	Working Standard	Earned Value reporting in the MIP must be updated monthly. Monthly Earned Value reports shall account for active and on-hold projects.
639	11/30/2019	Effective for all new work funded in Fiscal Year 2020	Financial Management	Working Standard	Provider invoices for Regional task orders must match information in the MIP.
640	12/21/2020	Effective immediately	Program Management	Program Standard	All organizations and users that access FEMA RAM applications must comply with applicable RAM policies and SOPs
641	12/21/2020	Effective immediately	Levee	Program Standard	Justification to use an expired PAL agreement date on the FIRM panel must be approved by the FEMA Region and FEMA Headquarters.
642	11/30/2022	Effective immediately	Levee	Program Standard	Levee Seclusion is not a viable mapping option unless approved by the FEMA Region and FEMA Headquarters. Seclusion mapping may only be considered for studies placed on hold during the development of the analysis and mapping procedures for non- accredited levees.
643	12/21/2020	Effective immediately	Coastal Zone Management Act	Program Standard	Prior to preliminary issuance of FIRMs affecting tidally influenced floodplains within the coastal zone, as defined by the Coastal Zone Management Act of 1972 (16 U.S.C. § 1451-1464), the FEMA region shall submit to the coastal management program for the state or territory in which the project takes place a federal consistency determination that the project is consistent to the maximum extent practicable with the enforceable policies of the coastal management program.

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
645	11/30/2021	Implemented for any project not yet at preliminary as of 12/01/21	Floodplain Boundaries	Program Standard	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: 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.). 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.).
646	11/30/2022	Effective for all FY23 studies and beyond	Levee	Program Standard	If data, documentation, or recommendations provided by other federal agencies leads to a reduction in mapped flood hazard areas impacted by a levee system, FEMA will coordinate with the agency of record and document the data or recommendation are still valid for future updates to the flood hazard area associated with the levee system.
647	11/30/2022	Effective for all FY23 studies and beyond	Project Planning	Program Standard	The FEMA Flood Mapping Needs Explorer information must be used as one of the factors for evaluation and prioritization of study areas. Regions need to leverage the data and any other elective factors and resources to plan Flood Risk Projects. A KDP 0 submission shall have documentation of the selection based on the information from FEMA's Flood Mapping Needs Explorer among other decision criteria. Please refer to Section 2.1 of the Project Planning guidance document for information on using the Mapping Needs Explorer.
648	11/30/2023	Effective for all FY24 studies and beyond	Engineering	Program Standard	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.

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Appendix C

Embed SID Tables

Figure 1: SID 43

Vertical Accuracy Requirements based on Flood Risk and Terrain Slope within the Floodplain being Mapped				
Level of Flood Risk	Typical Slopes	Specification Level	Vertical Accuracy: (FVA or NVA*) / (CVA or VVA**)	Lidar Nominal Pulse Spacing (NPS)
High (Deciles 1, 2, 3)	Flattest	Highest	24.5 cm/36.3 cm	≤ 2 meters
High (Deciles 1, 2, 3)	Rolling or Hilly	High	49.0 cm/72.6 cm	≤ 2 meters
High (Deciles 2, 3, 4, 5)	Hilly	Medium	98.0 cm/145 cm	≤ 3.5 meters
Medium (Deciles 3, 4, 5, 6, 7)	Flattest	High	49.0 cm/72.6 cm	≤ 2 meters
Medium (Deciles 3, 4, 5, 6, 7)	Rolling	Medium	98.0 cm/145 cm	≤ 3.5 meters
Medium (Deciles 3, 4, 5, 6, 7)	Hilly	Low	147 cm/ 218 cm	≤ 5 meters
Low (Deciles 7, 8, 9, 10)	All	Low	147 cm/ 218 cm	≤ 5 meters

*Fundamental Vertical Accuracy (FVA) and NVA are reported at the 95% Confidence Level.

**Consolidated Vertical Accuracy (CVA) and VVA are reported at the 95th Percentile.

Figure 2: SID 113

Risk Class	Characteristics	Delineation Reliability of the floodplain boundary per study methodology [1]	
		Zone A	All Other Zones
A	High population and densities within the floodplain and/or high anticipated growth	+/- 1/2 contour 95%	+/- 1.0 foot / 95%
B	Medium populate and densities within the floodplain and/or modest anticipated growth	+/- 1/2 contour 90%	+/- 1.0 foot / 90%
C	Low population and densities within the floodplain and/or modest anticipated growth	+/- 1/2 contour 85%	+/- 1.0 foot / 85%
D	Undetermined Risk, likely subject to flooding	N/A	N/A
E	Minimal risk of flooding; area not studied	N/A	N/A
[1] The difference between the ground elevation (defined from topographic data) and the computed flood elevation			

Figure 3: SID 417

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 (CSLF)	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%, 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.			

Figure 4: SID 543

		Reach Analysis Procedures				
Data Element	Link to CFR	Sound Reach	Freeboard Deficient	Overtopping	Structural-Based Inundation	Natural Valley
Elevation Information for the Levee Crest and Toe	N/A	Required	Required	Required	Required	N/A
BFE + Freeboard Less than Levee Crest	44CFR65.10(b)(1)	Required	N/A	N/A	N/A	N/A
BFE Less than Levee Crest	N/A	Required	Required	N/A	N/A	N/A
Operations and Maintenance Plan	44CFR65.10(c)	Required	Required	Required	Recommended	N/A
Structural Design Requirements	44CFR65.10(b)(2)	Required	Required	Required	N/A	N/A
	44CFR65.10(b)(4)					
	44CFR65.10(b)(5)					
	44CFR65.10(b)(6)					
	44CFR65.10(b)(7)					
Inspection Reports	44CFR65.10(c)(2)(iv)	Required	Required	Required	Recommended	N/A
Evaluation of Overtopping Erosion Potential	N/A	N/A	N/A	Required	N/A	N/A