

FEMA Flood Risk Analysis and Mapping Guidance & Standards Diary of Revisions Updates

This document serves as an overview of the Guidance and Standards Maintenance Cycle updates dating back to 2003. It outlines the updates to Standards (SIDs), Guidance, Technical References and Templates along with their short update descriptions.

Table 1: Flood Risk Analysis and Mapping Diary of Revisions

Correct table outline

| Date | Action | Revised Component |
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| November 2021 | <p>Standard Identification (SID) Updates</p> <p>174, 176, 180, 429: Updated to clarify and align with current Mapping Information Platform (MIP) submittal and standard operating procedures.</p> <p>175: Rescinded to align with current Mapping Information Platform (MIP) submittal and standard operating procedures.</p> <p>645: New Standard to potentially allow for removal of erroneous Special Flood Hazard Area when verified by engineering or scientific data.</p> <p>332, 338, 349: Small adjustments to flood map graphic requirements to adjust for the implementation of the Automated Map Production (AMP) tool by FEMA.</p> <p>371: Adjusted to remove requirement for world files based on the implementation of AMP. Other adjustments to make requirements consistent with current practice.</p> | Guidance and Standards Policy |
| November 2021 | <p>Guidance Updates</p> <p>Accepting Numerical Models for Use in the NFIP: Updated to reflect the most recent resources and URLs available on FEMA.gov.</p> <p>MT-1 Technical, Post-Flood Hazard Verification/Recovery Tools: Updated to incorporate best practices, correct broken URLs, and to clarify terminology and acronyms.</p> <p>Quality Management for Flood Risk Projects: Updated to make minor adjustments to program terminology, align with AMP updates and fix broken hyperlinks.</p> | Guidance and Standards Policy |

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| Date | Action | Revised Component |
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| | <p>Metadata: Updated to include a note about submitting base imagery metadata if imagery is anything other than The National Map data used by AMP; also updated several outdated hyperlinks.</p> <p>Notice-to-Users Revisions: Updated to refresh program terminology, specifically changing the term Notice to User Revision to Notice to User Correction. The new document title will be “Notice-to-Users Corrections”.</p> <p>Flood Insurance Rate Map (FIRM) Graphics: Updated to align with recent changes to the Automated Map Production (AMP) tool, including changes to sections 1 (AMP), 5.0 (Base Maps), and 7.0 (Map Collar Information).</p> <p>National Flood Hazard Layer (NFHL): Updated to provide new location of related NFHL tools and other programmatic changes to better align database conversion protocols.</p> <p>Calculation of Incident Wave Height and Slope for use with TAW Wave Runup Method: Retired; this information is now included as an Appendix in the Coastal Wave Runup and Overtopping Guidance.</p> <p>Key Decision Point (KDP) Process: Updated to align language pertaining to Letters of Final Determination (LFD) with KDP 5 consolidation.</p> <p>Coastal Overland Wave Propagation: Updated to incorporate Limit of Moderate Wave Action (LiMWA) language and to update terminology.</p> <p>Coastal Structures, Data Capture - Workflow Details, Determination of Wave Characteristics: Updated to reflect current standard operating procedures, to update references to other guidance documents, and to correct broken URLs/links.</p> <p>Riverine Mapping and Floodplain Boundaries: Updated to add a new section 8 in alignment with new SID 645, providing guidance about how providers might be able to remove an effective base level (i.e., Zone A) special flood hazard area (SFHA) if certain conditions are met.</p> <p>Floodway Analysis and Mapping: Updated to clarify information regarding evaluation lines and their implementation on regulatory products.</p> <p>Coastal Wave Runup and Overtopping: Updated to unify and combine information with other coastal-related Guidance, to reflect current standard operating procedures, to update references to other guidance documents, and to correct broken URLs/links.</p> <p>Levee: Updated terminology to change levee “completeness check” to “compliance review”, updated broken hyperlinks, referenced figure numbers and subsection numbers, as well as adding information on use of the National Levee Dataset (NLD) and clarifying how to address closures of openings and USACE risk</p> | |

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| | <p>assessments. Providing more guidance on flood hazard area and floodway mapping when impacted by levee systems.</p> <p>Base Level Engineering: Updated to include references relevant to 2D Modeling; to clarify application of engineering standards, specifications, standard operating procedures, and deliverables to ensure BLE data submittals are regulatory ready; to update terminology; to update references to other guidance documents; and to correct broken URLs/links.</p> <p>Stakeholder Engagement: Project Planning and Discovery Process, Stakeholder Engagement: Preliminary Production Process, Stakeholder Engagement: Post-Preliminary Due Process, Stakeholder Engagement: Introduction and Key Terms: Updated to correct broken URLs/links and incorporate virtual meeting guidance.</p> <p>MT-2: Updated to align with program applied approaches document (in development) and correct broken URLs and hyperlinks.</p> <p>Technical References</p> <p>Coordinated Needs Management Strategy (CNMS): Updated to align the Technical Reference (and schema) to the most current standard operating procedures, domains, Tier inventory classifications, and validation procedures, and to better align with BLE purchase information.</p> <p>Data Capture: Updated to reflect current standard operating procedures and incorporate updates to BLE guidance. World files and orthophotos are no longer required components of the final regulatory product deliverables. Also revised to update references to other guidance documents, and to correct broken URLs/links.</p> <p>Domain Tables: Updated to better align with the Automated Map Production (AMP) tool, including revised footnotes. Also, provided better guidance for domains linking model information to the FIS.</p> <p>Flood Insurance Rate Map (FIRM) Database: Updated to better align with the Automated Map Production (AMP) tool, including revised footnotes and to align with updated BLE information.</p> <p>Flood Insurance Rate Map (FIRM) Panel: Updated to align with program updates including 1) section 1 related to the Automated Map Production (AMP) tool; 2) sections 5 (Map Body) and 9 (FIRM Title Block) to align with recent AMP changes.</p> <p>Metadata Profiles: Updated to refresh program references and align with updates being made to the metadata profiles.</p> | |
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| <p>November 2021</p> | <p>Templates Updates:</p> <ul style="list-style-type: none"> • Alluvial Fans Study Metadata Profile • Base Map Metadata Profile • Coastal Study Metadata Profile • Draft, Preliminary and Final FIRM Metadata Profile • Flood Risk Metadata Profile • Floodplain Mapping and Redelineation Metadata Profile • Hydraulics Metadata Profile • Hydrology Metadata Profile • Orthoimagery Metadata Profile • Survey Metadata Profile • Terrain Metadata Profile • Metadata XMLs • Flood Insurance Rate Map (FIRM) Database • Flood Risk Products Checklist • Regulatory Checklists <p style="text-align: center; color: red; font-weight: bold; font-size: 1.2em;">This Document Has Been Superseded. For Reference Only</p> | <p>Templates and Other Resources</p> |
| <p>December 2020</p> | <p>Standard ID (SID) Updates</p> <p>SIDs 66, 69, 73, 75, 77, 78, 79, 128, 248, 335: Updating to include edits and refinements associated with the 2D Floodway Significant Update.</p> <p>SIDs 89, 96: Updating to clarify the use of regulatory products and the applicability of this standard.</p> <p>SID 99: Rescinding standard in association with edits and refinements associated with the 2D Floodway Significant Update.</p> <p>SIDs 101, 103, 229, 232, 256, 265, 274, 507: Updating to clarify standard, and align to current standard operating procedures.</p> <p>SID 230: Rescinding standard because this is covered by other standards and guidance.</p> <p>SID 235: Updating to comply with current style guide specifications.</p> | <p>Guidelines and Standards Policy</p> |

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| | <p>SIDs 264, 272, 279, 280: Updating to incorporate clarifications or corrections in the wording of the standard.</p> <p>SID 415: Updated to removed confusing language and emphasize the focus on quality.</p> <p>SID 417: Align the Standard to current standard operating procedures regarding automated creation of Changes Since Last FIRM (CSLF).</p> <p>SID 424: Rescinding standard because the tiling structure is no longer applicable.</p> <p>SID 443: Updating to direct information on the National Flood Insurance Program policy and claims information to OpenFEMA.</p> <p>SID 628: Updating to reflect the automated creation of CSLF through Customer and Data Services (CDS) tools and removes it from the list of products required to align with model information.</p> <p>SID 630: Updating to establish understanding that Automated Map Production (AMP) output products will look different than current requirements, but that is ok. Quality control (QC) will still be required for the engineering and flood hazard information.</p> <p>SID 640: To keep Risk MAP IT systems secure and appropriately protect the privacy of individuals who are referenced in Risk MAP data, a User Account Management Plan is being established so that all Risk MAP Providers understand the protocols that must be followed and managed.</p> <p>SID 641: Updating as expired Provisionally Accredited Levee (PALs) are emerging issues and HQ requires more oversight on the use of an expired PAL on an updated regulatory product.</p> <p>SID 642: Updating because seclusion should no longer be used for a Risk MAP study unless a specific case or set of circumstances dictates its use.</p> <p>SID 643: New standard developed to address Coastal Zone Management Act (CZMA) consistency determination requirements</p> | |
| <p>December 2020</p> | <p>Guidance Updates</p> <p>Alluvial Fans, Areas of Mitigation Interest, General Hydraulics Considerations, MT-1 Technical, Shallow Flooding Analyses and Mapping, MIP Guidance, Physical Map Revision (PMR): Clarify standards and guidance information, and align them to current standard operating procedures.</p> | <p>Guidance and Technical Reference Documents</p> |

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| | <p>Changes Since Last Flood Insurance Rate Map (FIRM), Flood Risk Database, Flood Depth and Analysis Grids Guidance, Flood Risk Assessments: Integrate the automated creation of CSLF with current standard operating procedures and updates to terminology.</p> <p>Combined Coastal and Riverine Floodplains, Contiguous Community Matching, Data Capture - Workflow Details, FIRM Database, FIRM Graphics, Floodway Analysis and Mapping, Levee, Letter of Map Revision (LOMR) Incorporation, Mapping Base Flood Elevations on Flood Insurance Rate Maps, Profile Baseline, Riverine and Floodplain Boundaries, Flood Insurance Study (FIS) Report, Hydraulics: Two-Dimensional Analysis, Flood Profiles: Edit and refine parts associated with proposed 2D floodway changes, and incorporate changes resulting from the revised flood profile SIDs.</p> <p>Quality Management of Flood Risk Projects, FIRM Database, FIRM Graphics, FIRM Index, Mapping Base Flood Elevations on FIRMs, Physical Map Revision (PMR): Updates to add general reference for AMP.</p> <p>MT-2: Create a new guidance document with more direction and clarity on developing and submitting LOMRs and other MT-2 documents.</p> <p>Coastal Zone Management Act (CZMA) Guidance: New guidance to provide guidance on roles, responsibilities, and procedures for project compliance with consistency determinations.</p> <p>Key Decision Point (KDP): Allow more ownership by the FEMA Regional Offices.</p> <p>Accepting Numerical Models for Use in the NFIP: Add new models to the guidance.</p> <p>Technical References</p> <p>Flood Insurance Study (FIS) Report: Updates include changes associated with the 2D floodway update; updates to information regarding Levee Systems; incorporate changes from revising the flood profile SIDs; align with standard operating procedures; and incorporate routine maintenance revisions and corrections.</p> <p>Flood Insurance Rate Map (FIRM) Panel, Flood Insurance Rate Map (FIRM) Database, Domain Tables: Updates to add reference to AMP; and updates to information regarding Levee Systems.</p> | |
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| <p>December 2020</p> | <p>Templates Updates</p> <ul style="list-style-type: none"> • Flood Insurance Study (FIS) Report • Flood Risk Products Quality Checklist • Flood County USA Vector • Flood County USA Ortho • Flood Insurance Rate Map (FIRM) Database • Flood Insurance Rate Map (FIRM) Panel Vector MXD • Flood Insurance Rate Map (FIRM) Index MXD | <p>Templates and Other Resources</p> |
| <p>November 2019</p> | <p>Standards Updates</p> <p>SID 5: Converting to a program standard. This ensures that HQ and the Regional office are involved in complicated decisions related to existing floodways during an update.</p> <p>SID 17: Updating to refine Discovery meeting needs for data, and stakeholder engagement. Standard is being updated from a Program Standard to a Working Standard.</p> <p>SIDs 20, 23, 24, 26: Updating to refine Discovery meeting needs for data, and stakeholder engagement.</p> <p>SID 71: Updating to clarify this SID applies to revised floodways as well as new floodways up or downstream of existing floodways.</p> <p>SID 72: Rescinding; combining with SID #73.</p> <p>SID 73: Updating to clarify and combine information with previous SID 72 as these two standards are closely linked and can be interpreted to contradict each other.</p> <p>SID 77: Updating to clarify standard and provide better direction for model reaches with similar drainage areas calculated with coincident peaks.</p> <p>SID 113, 215, 217, 218, 220, 226: Updating to clarify standard, and align to current standard operating procedures.</p> <p>SID 367: Updating to clarify the application of new suffixes and effective dates on printed and non-printed FIRM panels that are split as part of a PMR.</p> <p>SID 630: New standard to bring innovation, efficiency and consistency to FIRM production, without changing the public's experience.</p> | <p>Guidelines and Standards Policy</p> |

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| | <p>SIDs 631, 632, 633, 635, 636, 637, 638, 639: New standard to support initiatives to improve processes for tracking regional cost allocations and status of funding for Flood Risk Projects.</p> | |
| <p>November 2019</p> | <p>Guidance Updates</p> <p>Base Map and FIRM Panel Layout, Flood Insurance Rate Map (FIRM) Graphics: Updating to clarify and align information to current standard operating procedures.</p> <p>Coastal Floodplain Mapping, Coastal General Study Considerations, Coastal Structures: Updating to clarify and expand information regarding piers and wharves and potential structures upon them.</p> <p>Dams: This document is being created to provide consistent implementation of dam-related NFIP regulations and mapping procedures that apply to dam/reservoirs and non-dam features.</p> <p>Levee: This document is being updated to correct minor typos and alignment of wording for consistency.</p> <p style="text-align: center;">This Document Has Been Superseded. For Reference Only</p> <p>Discovery: Updating to refine Discovery meeting needs for data, and stakeholder engagement; and to better define needs for replacing outdated legacy modeling data with available modern modeling and mapping data (such as Base Level Engineering (BLE)).</p> <p>Flood Insurance Rate Map (FIRM) Database: Updating this document to reference the smoothing best practices and to provide clarification about superseded and incorporated LOMRs.</p> <p>Floodplain Boundary Standards: Updating to clarify and align information to current standard operating procedures, and to ensure clarity regarding self-certification for 2D and BLE studies.</p> <p>Floodway Analysis and Mapping: Updating this document to align with the current Levee Guidance, specifically the computation of floodways in the presence of levees as well as descriptions of the various analysis scenarios.</p> <p>Mapping Information Platform (MIP): Updating sections 15 and 16 of this document to replace the flow diagrams that are currently unreadable.</p> <p>MT-1 Technical: Incorporating additional details regarding the limitations of the MT-1 process, correcting some typographical errors, and adding new information for</p> | <p>Guidance and Technical Reference Documents</p> |

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| | <p>special processing situations such as condominium buildings and manmade changes intended to provide flood protection.</p> <p>Project Planning: Updating to better define needs for replacing outdated legacy modeling data with available modern modeling and mapping data (such as BLE).</p> <p>Redelineation: Updating this document to reference revised templates, align with updated standards; remove references and update some terminology for consistency.</p> <p>Riverine Mapping and Floodplain: Updating to clarify and strengthen information, to ensure proper implementation of resolving mismatches across community boundaries, and to ensure clarity regarding floodplain boundary smoothing.</p> <p>SE Data Product Development Phase, SE Discovery Phase, SE Due Process Phase, SE FIS and FIRM Delivery Phase, SE Planning for Mitigation Action Phase, SE Preliminary NFIP Map Release Phase, SE Project Planning Phase, SE Risk Awareness Phase: Retiring 8 existing Stakeholder Engagement Guidance documents and creating 4 new streamlined Stakeholder Engagement Guidance documents.</p> <p style="text-align: center;">This Document Has Been Superseded. For Reference Only</p> <p>SE Introduction and Key Terms, SE Post-Preliminary Due Process, SE Preliminary Production Process, SE Project Planning and Discovery Phase: Creating 4 new streamlined Stakeholder Engagement Guidance documents that reduce duplicative content and integrate CERC-developed resources.</p> <p>Technical Reference Updates</p> <p>Coordinated Needs Management Strategy (CNMS): Updating to clarify and align information to current standard operating procedures; and to update Tier inventory classifications from a 4-tier system to a 5-tier system and document revised schema for S_Unmapped_Ln layer.</p> | |
| <p>November 2019</p> | <p>Templates Updates</p> <ul style="list-style-type: none"> Flood Risk Products Checklists | <p>Templates and Other Resources</p> |
| <p>April 2019</p> | <p>Standards Updates</p> <p>SID 621: Revised to clarify that the draft database can be transmitted or made available online.</p> | <p>Guidelines and Standards Policy</p> |

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| | <p>SID 619: Clarified for consistency in how Primary Frontal Dune features are revised.</p> <p>SID 614: Updated to clarify the application and intent of the standard, as it relates to coastal Base Flood Elevation (BFEs) and Letter of Map Amendment (LOMA) or Conditional Letter of Map Amendment (CLOMA) determinations.</p> <p>SID 191: Rescinded to reflect retiring the Document Control Procedures Manual and updated approach to managing letter templates.</p> <p>SIDs 36, 62, 168, 386, 391, 395, 402, 405, 406, 407, 508, 516, 522, 524, 525, 600, 601: Minor updates for clarity and to align with current processes and practice.</p> <p>SIDs 74, 107, 137, 138, 384, 385: Minor edits to standardize language as part of routine maintenance.</p> <p>SIDs 105, 347, 374: Updated several cross-section and BFE standards to better define and clarify their application and usage on FIRM panels.</p> <p>SIDs 50, 67, 81, 314, 526: Rescinded because this requirement is covered elsewhere.</p> | |
| <p>April 2019</p> | <p>Guidance Updates</p> <p>Coastal Barrier Resource Systems (CBRS): retired due to change in standards that no longer require this data to be shown on regulatory FIRM products.</p> <p>Hydrology - Rainfall Runoff Analysis; General Hydrologic Considerations: Updated to reference revised USGS Bulletin 17C used for determining flood flow frequencies.</p> <p>Stakeholder Engagement Discovery Phase: Updated to remove references to CBRS data and incorporate additional guidance for SID 620.</p> <p>Stakeholder Engagement Data Product Development Phase: Updated to incorporate additional guidance for SIDs 620 and 621.</p> <p>Stakeholder Engagement Preliminary National Flood Insurance Program (NFIP) Map Release Phase, Stakeholder Engagement Due Process Phase: Updated to incorporate additional guidance for SID 622.</p> <p>Versioning: Removed references to the Document Control Procedures Manual (DCPM) which is retired.</p> | <p>Guidance and Technical Reference Documents</p> |

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Coastal Wave Determination: Guidance Transformation.

Levee: Updated based on feedback from the initial release of the revised Levee Guidance in February 2018, including more definitions and information floodways, accreditations and PALS.

Data Capture - Workflow Details: Updated to better defined LiDAR data capture that comes from the USGS 3DEP Program but used for Risk MAP.

Flood Insurance Rate Map (FIRM) Index, Mapping Base Flood Elevations on Flood Insurance Rate Maps, Appeal and Comment Processing, Federal Register Notices, Post-Preliminary Due Process, Technical Support Data Notebook and Flood Elevation Determination Docket, Summary of Map Actions (SOMA) and Revalidation Letters, DVT, Discovery, FIRM Database, FIRM Graphics, Physical Map Revision (PMR), National Flood Hazard Layer (NFHL): Minor updates to ensure full alignment with current requirements and processes.

Technical Reference Updates

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Coordinated Needs Management Strategy (CNMS): Updated to remove CBRS references due to removal of CBRS information from FEMA regulatory products, and to ensure accurate web address references.

Flood Insurance Study (FIS) Report: Updated to remove CBRS references due to removal of CBRS information from FEMA regulatory products, and to include minor revisions in support of Routine Maintenance.

Flood Insurance Rate Map (FIRM) Panel: Updated to remove references to CBRS data, to include specifications for flowage easement information, and to update terminology referencing the 1-percent-annual-chance flood.

Flood Insurance Rate Map (FIRM) Database: Updated to add new LEVEE_AN_TYP (levee analysis type) field in S_LEVEE and removed CBRS references.

Data Capture: Updated to better define how to submit LiDAR data capture that comes from USGS purchases and changed the submittal format for black and white index from tiff to png.

Domain Tables: Removed references to CBRS, added analysis type for non-accredited levees (D_Levee_Analysis_Type), updated levee status values and added new values for Discovery.

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| <p>April 2019</p> | <p>Templates Updates</p> <ul style="list-style-type: none"> • Regulatory Checklists • Coastal Metadata • Discovery Metadata • FIRM Metadata • Floodplain Metadata • Coastal Metadata • Discovery Schema • FIRM Database Schema • NFHL Database Schema • FIRM Index MXD • FIRM Panel – MXD template and PDF Prototype; Ortho & Vector versions • FIS Report Template (Word) • Appeals Process Live Read Radio PSA Script • Engineering Methods Notification Letter Template with Summary Table • Guidance Data Submission Email_FPA_Template • Guidance Eng Methods Email_FPA_Template • Map Change Press Release • Notification Guidance_Draft_Database_Submission_Letter Template • Notification Guidance_Engineering Methods Acknowledgement Letter • Notification Guidance_Media Outreach Letter • Radio PSA Program Director Email Pitch • SID 621_Draft_Database_Comment Acknowledgment Letter Template • TV Producer Email Pitch <p style="text-align: center; color: red; font-weight: bold; font-size: 1.2em;">This Document Has Been Superseded. For Reference Only</p> | <p>Templates and Other Resources</p> |
| <p>December 2018</p> | <p>Standards Updates</p> <p>Coastal Barrier Resources System (CBRS) data will no longer be shown on FIRM maps or contained in the FIRM database. This update is being done in collaboration with the U.S. Fish and Wildlife Service (USFWS) to remove potentially outdated CBRS information from the FEMA products and switch to using the authoritative, dynamically updated digital CBRS boundaries provided by USFWS website.</p> <p>SID 170: was rescinded.</p> <p>SID 356: Revises the requirements in the FIRM Panel Technical Reference with respect to CBRS areas no longer being shown.</p> | <p>Guidelines and Standards Policy</p> |

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| <p>February 2018</p> | <p>Standards Updates</p> <p>SIDs 91, 98, 537: Updated coastal standards to consolidate the definition of the V-Zone for coastal Flood Risk Projects and simplify standard language related to dune erosion analysis. SID 98 was rescinded and combined with SID 91.</p> <p>SIDs 178, 521, 522, 523, 524, 553, 601, 609: Minor wording/terminology changes related to the MIP redesign.</p> <p>SIDs 187, 415, 417, 420, 426, 427, 428, 429, 440, 628: Updated Flood Risk Product (FRP) requirements based on feedback from FRP users and stakeholders.</p> <ul style="list-style-type: none"> • New quality standards for water surface elevation grids • Simplification and streamlining of products including making the Flood Risk Report (FRR) and Flood Risk Map (FRM) optional • SIDs 420, 426, 427, 428, 440 were rescinded. <p>SIDs 199, 627: Updated SID 199 to allow the practice of using LiDAR or other topographic datasets to determine the lowest adjacent grade (LAG) or MT-1 (LOMA) requests. Created a new standard SID 627 for using LiDAR or other elevation data for LOMAs.</p> <p style="text-align: center;">This Document Has Been Superseded. For Reference Only</p> <p>SIDs 193, 508: Updated standards to align with already established protocols for FEDD file reviews during the QR4 and KDP5 steps. Both updates also include minor terminology changes to align with the MIP redesign.</p> | <p>Guidelines and Standards Policy</p> |
| <p>February 2018</p> | <p>Substantial Updates</p> <p>Base Level Engineering (BLE)</p> <ul style="list-style-type: none"> • BLE Guidance (<i>new</i>): Developed new guidance to support the emerging creation and evolving definition of BLE. • Discovery Guidance: Minor updates to reflect lessons learned from launch of new MIP. Updates regarding the timing and collection of AOMIs, based on the overall changes to the AOMI guidance. Updates to support BLE guidance transformation, regarding the timing of when BLE data is produced and shared with communities. • CNMS Technical Reference: Updated to reflect information presented in the new BLE Guidance, which supports the emerging creation and evolving definition of BLE. Also updated to reflect new attributes being added to track availability of WSEL and depth grids, and their compliance with the new quality standards. • FIS Report Technical Reference: Updates were made to the FIS Report Technical Reference Table 1, “Derivation of FIS Report Template Tables from Data in FIRM Database Tables” for the following reasons: | <p>Guidance and Technical Reference Documents</p> |

- Updates based on topo field name changes; TOPO_VERT_ACC and TOPO_HORIZ_ACC field names have been updated to TOPO_V_ACC and TOPO_H_ACC, respectively (FIS Report Table 23).
- Updates based on new entries in the FIRM DB domain/Domain Technical Reference D_STUDY_TYP (FIS Report Table 2).
- Domain Tables Technical Reference: Updated to allow for the selection of BLE in the D_STUDY_MTH and D_STUDY_TYP domain tables.
- FIRM Database XML Schema: New content to establish consistent requirements and to support the emerging creation and understanding of BLE. Updates to address needs identified during the levee guidance transformation process.

LiDAR for Letters of Map Amendment (LOMAs)

- MT-1 Technical Guidance: Updated and new content to clarify how submitters can use LiDAR or other elevation data for a Letter of Map Amendment (LOMA) applications.

Flood Risk Products (FRPs)

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- Areas of Mitigation Improvements (AOMI) Guidance: Updated to reflect FRP improvements and simplified guidance and to emphasize the purpose of AOMI is to focus on enabling communities to take mitigation action. Added guidance on how Building Code adoption and enforcement information can be included within AOMI.
- Changes Since Last FIRM (CSLF) Guidance: Updated to reflect FRP improvements, including revised definitions and simplification of the source citation and description of why changes may be taking place (formerly known as Contributing Engineering Factors).
- Flood Depth and Analysis Grids Guidance: Additional guidance and graphics added to help in the creation of WSEL grids that will meet SID 415 (higher-quality data that is consistent with regulatory Base Flood Elevations). New section added to address the specific considerations and checks to take into account when evaluating the quality and accuracy of the WSEL grids.
- Flood Risk Database Guidance: Updated to reflect simplification of certain tables and attributes stored within the database and to align with changes being made to the Flood Risk Database Technical Reference.
- Flood Risk Assessment Guidance: Updated to reflect simplification of the attributes stored in this dataset, based on FRP user and stakeholder feedback. The flood risk assessment process will not be affected, but the storage of loss information will be changed/updated. Instead of having separate tables and features, and using joins, the process is being simplified to store the Total Loss information within the S_CenBlk_Ar feature class.

- Flood Risk Map (FRM) Guidance: Updated to reflect that this Flood Risk Product is optional.
- Flood Risk Report (FRR) Guidance: Updated to reflect that this Flood Risk Product is optional.
- Quality Management for Flood Risk Projects Guidance: Updated to reflect already established process of reviewing portions of FEDD file at QR4 and KDP5. Also, updated information about review for Flood Risk Products.
- Flood Risk Database Technical Reference: Updates were made to the FRD schema to reflect simplification of table and attribute population for CSLF, Flood Risk Assessment, and AOMI-related tables, based on FRP user and stakeholder feedback. Other FRR and FRM-related tables were also simplified or changed to optional, based on the overall change to make the FRR and FRM optional.
- Data Capture Technical Reference: Updated the data dictionary for the S_Elev_Inv_Ar, reflecting the current U.S. Interagency Elevation Inventory data structure and field width limitations. Also, added a new S_Elev_Inv_Ar XML schema file to facilitate the submission of the S_Elev_Inv_Ar file and made changes to reflect changes to Flood Risk Product deliverables.
- Domain Tables Technical Reference: Removed several Flood Risk Products domains to align with revised standards; provided a new table to track study methods by stream.
- Flood Risk Database XML Schema: Updated to reflect FRP improvements and to align to updates made in the Flood Risk Database Technical Reference.
- Flood Risk Products Checklist: Updated to reflect FRP improvements that were implemented based on feedback from FRP users and stakeholders in the Fall of 2016. WSEL grid section enhanced with checks that test for compliance with SID 415.

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Coastal Updates

- Coastal Floodplain Mapping Guidance: Updated to support the combination of two existing standards (SIDs 91 and 98) to define the V-Zone for all coastal Flood Risk Projects, regardless of the flooding source.
- Coastal Erosion Guidance: Updated to simplify language and to clarify that wave setup should be used for dune erosion analyses regardless, of the coastal flooding source.

Guidance Transformation

- Coastal Wave Runup and Overtopping: Reorganized to more logically reflect the work undertaken. Supports the update to SID 91, which improves the V-Zone definition based on wave runup to better match current practice.

- **General Hydrologic Considerations:** Updated to include information for regression analysis, stream gage analysis, and analysis of lake levels for closed basins.
- **Hydrology: Rainfall-Runoff Analyses:** Transformed existing information and added guidance for determining 1 percent plus (1%+) discharges for rainfall-runoff models.
- **Ice Jam:** Terminology and language updated to better align to Risk MAP. Defined the composite frequency curve as the base condition for floodway analyses rather than the free flow condition.
- **Levee:** Transformed and superseded guidance on levee accreditation, Provisionally Accredited Levees (PALs) and Levee Analysis and Mapping Procedures (LAMP), and expanded guidance on levee data inventory, mapping considerations for non-levee features, and coordination with other federal agencies, among others. Related templates were also updated as part of this transformation.
- **Project Planning:** Transformed existing information and updated methods to improve Regional efficiency in Risk MAP planning, purchasing and reporting through multi-year planning and annual sequencing.
- **Post-Flood Hazard Verification/Recovery Tools:** Guidance expanded around community outreach, federal agency coordination, data collection and sources, and other potential projects/datasets that can be used for recovery.
- **Acceptable Models List:** Checklist and sample certification letter also developed to assist in documenting and evaluating model acceptability potential.
- **Incorporating Mitigation Planning Technical Assistance into Risk MAP Projects:** Transformed existing guidance, significantly expanding content to cover mitigation planning technical assistance for each of the six steps of the Risk MAP life cycle. The transformed guidance also includes a comprehensive list of increased capability training.

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Minor Updates

The following guidance documents had minor updates to content including revised terminology, figures, and/or workflow steps to align with redesigned MIP elements:

Guidance

- Appeal and Comment Processing
- Coastal General Study Considerations
- Database Verification Tool (DVT)
- Data Capture Workflow
- Flood Insurance Rate Map (FIRM) Database

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| | <ul style="list-style-type: none"> • Key Decision Point (KDP) Process • National Flood Hazard Layer (NFHL) • Metadata <p>Technical References</p> <ul style="list-style-type: none"> • Data Capture • FIRM Database • Metadata Profiles | |
| <p>February 2018</p> | <p>Updated Templates</p> <ul style="list-style-type: none"> • FIS Report Template • TSDN Checklist • FEDD Checklist • Metadata Profile XML Schemas • Regulatory Checklists | <p>Templates and Other Resources</p> |
| <p>May 2017</p> | <p>Substantial Updates</p> <p style="text-align: center; color: red; font-weight: bold;">This Document Has Been Superseded. For Reference Only</p> <p>Mapping Information Platform (MIP) Guidance: A nearly complete overhaul to reflect the MIP redesign with new content to present updated terminology, new and revised tools, new purchase types, new upload capabilities, new project setup instructions, revised workbench information, new reports, and new studies workflow diagrams. The overhaul also includes removal of outdated content.</p> <p>Data Capture – General Guidance: Updated to remove many of the work-arounds from the old version of the MIP and revised data capture information to reflect the MIP redesign. Includes new folder structure and Certification of Compliance of Submitted Data Form (i.e. to be used for aerial mapping, hydrology, hydraulics, alluvial fans, coastal and regulatory products).</p> <p>Data Capture – Workflow Guidance: Extensive revisions to reflect new MIP data capture tasks, folder structure, etc. New content and comprehensive revisions for many of the new features in the MIP including Discovery, post preliminary data capture, terrain/topographic data capture, flood risk products data capture, LAMP data submittals, and general data purchases.</p> <p>Flood Insurance Rate Map (FIRM) Database Technical Reference: Updated to reflect redesigned MIP elements including:</p> <ul style="list-style-type: none"> • New terminology, MIP Task Names, and MIP Purchases • Revised Table 2 “<i>FIRM Database Table Deliverables by MIP Data Capture Task</i>” (Section 4) to display new task names | <p>Guidance and Technical Reference Documents</p> |

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| | <ul style="list-style-type: none"> Revised “S_Topo_Confidence” table and guidance to reflect documentation of topographic versus terrain data, per redesigned MIP Task names and content <p>Data Capture Technical Reference: Updated to reflect redesigned MIP elements including:</p> <ul style="list-style-type: none"> New data upload processes and terminology Study updates and data upload processes and terminology Flood Elevation Determination Docket (FEDD) as final deliverable Validation and Independent Quality Assurance / Quality Control folders for all Data Capture purchases Levee, Outreach, Due Process, and General purchase task folders. <p>Geospatial Data Coordination (GDC) Guidance: Updated to remove outdated MIP workflow content (e.g. scoping) and a comprehensive update to all items pertaining to the entry of leverage data and how to classify it, as well as changes to the GDC reporting logic and report names.</p> <p>Preliminary Distribution and Revised Preliminary Guidance: Updated to add new content for how to create and manage the Revised Preliminary Project in the MIP, including completing the data development tasks and issuing the Revised Preliminary Regulatory Products. Added content for the Preliminary and Revised Preliminary Summary of Map Action (SOMA), specifically for working within the MIP workflow and the new SOMA tool.</p> <p>Post-Preliminary Deliverables Guidance: Updated to reflect MIP change that all FEDD file components (including final compilation), 90/30 day letters, and revalidation letters will be uploaded. Additionally, outlines requirements for Appeal Initiation and documentation, Record Appeal, and Comment Processing and Tracking steps in MIP. Outlines the requirements for various deliverables related to LFDs.</p> <p>Guidance Transformation</p> <p>SOMA and Revalidation Letters Guidance: First time publication of this guidance, providing new content for capturing the Letters of Map Change (LOMC) locations with regards to the redesigned Community LOMC List Report. Created content for LOMC categorization, specifically as it relates to the new SOMA categories “2a and 2b”. Also, provided information on working with the MIP SOMA tool, creating the Preliminary or Revised Preliminary and Final SOMAs, and completing the Revalidation MIP Export.</p> | |
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| | <p>Minor Updates</p> <p>The following guidance documents had minor updates to content including revised terminology, figures, and/or workflow steps to align with redesigned MIP elements:</p> <ul style="list-style-type: none"> • Appeal and Comment Processing Guidance • Coordinated Needs Management Strategy (CNMS) Technical Reference • Database Verification Tool (DVT) Guidance • Discovery Guidance • Flood Insurance Rate Map (FIRM) Database Guidance • Key Decision Point (KDP) Process Guidance • Letter of Final Determination (LFD) Guidance • Metadata Guidance • Post-Preliminary Due Process Guidance | |
| <p>May 2017</p> | <p>One updated template</p> <ul style="list-style-type: none"> • Certification of Completeness of all Submitted Data for FEMA-funded Flood Risk Projects <p>Six new templates</p> <ul style="list-style-type: none"> • Certificate of Compliance of Submitted Data for FEMA-funded Flood Risk Projects • Appeal Comment Acknowledgment • Appeal Resolution • Appeal Start Letter • Preliminary Transmittal Letter • Revised Preliminary Transmittal Letter | <p>Templates and Other Resources</p> |
| <p>November 2016</p> | <p>Routine Standards Updates</p> <p>SID 444: The purpose for the update is to require emergency operation and public evacuation procedures be documented for levee systems to be accredited. This standard will emphasize the importance of ensuring this information is available and is aligned with existing accreditation regulations. Additionally, this standard is consistent with “Flood Protection Structure Accreditation Task Force: Final Report” recommendations to require such information. The “Flood Protection Structure Accreditation Task Force: Final Report” was produced following a requirement in the 2012 NFIP Reform Act for FEMA and US Army Corps of Engineers to align our requirements related to levee inspection, certification, and accreditation.</p> <p>SID 551: The purpose for the update is clarify that Risk MAP Program providers are</p> | <p>Guidelines and Standards Policy</p> |

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responsible for all data within a PMR footprint and this should meet required DVT checks, standards and quality reviews.

SIDs 169 & 368: Removes conflicting requirements that existed between the original standards 169 and 368 related to the incorporation of LOMRs into a study or PMR. All valid LOMRs that are effective prior to the LOMC cutoff data must be incorporated. SID 169 will be updated with the combined language and SID 368 will be rescinded. This update will not result in significant changes to current processes.

SID 440: The purpose for the update is to remove the phrase that mandated how Mapping Partners create the Flood Risk Map (“must be derived directly from the Flood Risk Database”). This change was needed to promote more flexibility in how the Flood Risk Map and Flood Risk Report get created, and to ultimately support simplification of the Flood Risk Database. An associated Flood Risk Database Technical Reference update will also be made to fully implement this change.

SID 268: Requires that all communities included in a revised FIS, regardless of whether they are affected by the revision, must receive a copy of the updated FIS or receive a notice of how to download an updated FIS. Currently, all communities in a county affected by a revision receive a copy of the revised FIS Report at effective issuance, delivered by the MSC. This aligns with current practice. In the future, communities included in the FIS, but not affected by the revision may receive a notice of how to download an updated FIS, rather than receive the updates directly.

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SID 227: The purpose for the update is to add the option for making corrections to the National Flood Hazard Layer (NFHL) through the NTU process, and also to clarify the accreditation status of a levee cannot be updated by an NTU.

New Standards

SID 623: This is a new standard to clarify that requests to remove the SHFA designation that require a Community Acknowledgement Form cannot be processed in non-participating communities.

SID 624: This is a new standard that states the basis for approval or denial of requests to remove the SFHA designation from a structure or property based on the elevation of the lowest adjacent grade at the structure or naturally occurring intervening high ground between the flooding source and the structure of property.

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| | <p>SID 626: This is a new standard to clarify that to remove the SFHA designation from a property or portion of a property, the area to be removed cannot partially overlap any proposed or existing structures and may not include flooding sources or waterways that are shown on the effective Flood Insurance Rate Map (FIRM).</p> <p>There was also an addition to the “Requirements” section of the policy to help clarify the impact of new standards on existing task orders and agreements:</p> <p>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.</p> | |
| <p>November 2016</p> | <p>TMAC Recommendations</p> <p>Modeling Guidance</p> <p>Hydraulics - One-dimensional Analysis and Floodway Guidance: Transformation with minor edits / updates. Some additional language is being added to provide guidance on how to choose between steady and unsteady modeling techniques.</p> <p>Hydraulics - Two-dimensional Analysis Guidance: Transformation with new content from recently developed FEMA whitepapers. The new content will help modelers choose between 1-D and 2-D models and better define data sources. Also, adding information about model verification and maintenance.</p> <p>Elevation Data Accuracy Reporting</p> <p>FIRM Database Technical Reference: Updating fields within <i>S_Submittal_Info</i> to capture topographic data accuracy (TOPO_VERT_ACC and TOPO_HORIZ_ACC fields) to support TMAC recommendation. This will increase the version of the FIRM Database. There are other minor updates.</p> <p>FIRM Database Guidance: Minor changes to align with the FIRM DB Technical References updates, as well as providing guidance about how to populate the new fields.</p> <p>Domain Tables Technical Reference: New Domains being added for the new fields in the <i>S_Submittal_Info</i>. Also, adding new domains for D_Task_Typ: Topo_Capture and Terrain_Capture.</p> | <p>Guidance and Technical Reference Documents</p> |

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| | <p>Terrain Metadata Profile: Adding Topo Capture and Terrain Capture GeoForm options.</p> <p>Data Capture Technical Reference: Updating to reflect new Topo_Capture and Terrain_Capture tasks, also adding Automated Engineering report to General folder for Hydrology, Hydraulics, Floodplain Mapping, and Flood Risk Dataset.</p> <p>Data Capture – General Guidance: Revisions to reflect new Topo_Capture and Terrain_Capture tasks, updates to the media section to reflect CDS guidance on submitting large datasets, and other minor changes.</p> <p>Data Capture – Workflow Details Guidance: Revisions to reflect new Topo_Capture and Terrain_Capture tasks, minor updates to the Automated Engineering section.</p> <p>FIS Report Technical Reference: Revising information about Table 23 to reflect new <i>S_Submittal_Info</i> fields.</p> <p>Substantial Updates</p> <p>CNMS Technical Reference: Updated to incorporate the revised Coastal CNMS framework and coastal study validation assessment process and checklist. Some minor revisions and additions have been made to the <i>S_Studies_Ln</i> feature class schema, including new fields to store validation assessment decision documentation directly in the database rather than as an external spreadsheet.</p> <p>Quality Review & Quality Management Guidance: Consolidation of the two existing Quality guidance documents into one, and updates to incorporate references to KDP requirements, as well as guidance around the timing of submittals, reviews, and the archiving of data. The structure is being re-organized around the lifecycle of a Flood Risk Study while providing details about quality assurance, quality control, and continuous process improvement.</p> <p>Guidance Transformation</p> <p>Stakeholder Engagement-FIS and FIRM Delivery Guidance: Transformed guidance, plus substantial revisions to reflect FEMA emphasis on stakeholder engagement throughout Risk MAP lifecycle and to address requirements of Section 216 of the Flood Insurance Reform Act of 2012, as amended by Homeowner Flood Insurance Affordability Act of 2014.</p> | |
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| | <p>Stakeholder Engagement-Planning for Mitigation Action Guidance: Transformed guidance, plus substantial revisions to reflect FEMA emphasis on stakeholder engagement throughout Risk MAP lifecycle and to address requirements of Section 216 of the Flood Insurance Reform Act of 2012, as amended by Homeowner Flood Insurance Affordability Act of 2014.</p> <p>General Hydraulics Guidance: Originally transformed in May 2016. Held for release to correspond with 1-D and 2-D Analysis Guidance release because of extensive interdependencies. Provides additional clarity on levels of study such as Base Level Engineering and Detailed Study.</p> <p>Alluvial Fan Guidance: Transformed guidance, with the removal of some out dated content.</p> <p>Shallow Flooding Guidance: Transformed guidance, plus revisions to some language to reflect current program terminology and evolving methods of analysis since Appendix E was originally written.</p> <p>Flood Profiles Guidance: Transformed guidance, plus added guidance to address profile situations commonly encountered, such as drawdowns, overprints, and profiles for 2D modeling, among others.</p> <p>Coastal: Statistical Simulation Methods Guidance: Transformed guidance, consolidating related guidance from Appendix D and Operating Guidance 8-12 on Joint Probability Method.</p> <p>Coastal: Flood Frequency and Extreme Value Analysis Guidance: Transformed guidance, and updated to remove certain guidance previously included in legacy Appendix D, such as the recommendation to adopt the GEV distribution, examples that highlighted how to perform certain statistical analyses, and language pertaining to the complexity of the Peaks Over Threshold approach.</p> <p>Miscellaneous Updates</p> <p>Regulatory Product Updates</p> <p>FIRM Panel Technical Reference: Updated to provide a specification for the FIRM Panel neatline.</p> <p>FIS Report Technical Reference: Replaced the NGS physical address and phone number listed in the FIS Report with a reference to the NGS website; added</p> | |
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clarifying information for documenting multi-county communities in the Community Map History Table and on the FIRM Index; added a special CBRS/PNP note option to the FIRM Index where CBRS areas apply over open water; and updated Table 23 (Topographic Data) to be consistent with updates to the FIRM Database Technical Reference and to better implement the TMAC recommendation to document the Vertical and Horizontal accuracy of elevation data used in the study.

FIS Report Guidance: Minor update to support the improved implementation of SID #261; updated to support the special CBRS/PNP FIRM Index note added to the FIS Report Technical Reference.

FIS Report Template: Updated to reflect NGS updates in the FIS Report Technical Reference.

NFHL Guidance: Updates to document changes to the NFHL submission process, LOMR source citation guidance, and changes to quality corrections that can be processed as NTUs.

DVT, PMR and FIRM Index Guidance: Minor changes to clarify guidance and better align with other documents.

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Flood Risk Product Updates

Flood Risk Database Technical Reference: Updated to fully implement the changes to SID #440 and to promote more flexibility and simplification of the database, by removing the requirement that the following Flood Risk Map and Flood Risk Report-specific tables must be populated: S_Carto_Ar, S_Carto_Ln, S_Carto_Pt, S_FRM_Callout_Ln, FRR_Custom, FRR_Images, and FRR_Project. These are now optional.

Flood Risk Database **and** Flood Risk Map Guidance: **Minor** updates to be consistent with the updates to the Flood Risk Database Technical Reference.

Other Routine Updates

Post-Preliminary Processing (PPP) Deliverables Guidance: Minor updates to the FEDD table to include new BW-12 guidance and be consistent with other May 2016 updates (FEDD/TSDN).

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| | <p>Coastal General Study Considerations Guidance: Updated section 4.4 to incorporate guidance regarding temporary shoreline disturbances.</p> <p>MIP Guidance: Updates to reflect changes in the process for submitting large datasets to the MSC.</p> <p>NTU Guidance: Updates to discuss NFHL-only NTUs, alignment with updates to SID #227 and other revised information to make the use of NTU more streamlined.</p> <p>MetaMan Guidance: Updating to expand information on use of the tool.</p> <p>Metadata Profiles (with references to Automated Engineering): Adding optional language to the existing Hydrology, Hydraulics, Floodplain Mapping, and Flood Risk Dataset metadata profiles to be used when submitting Automated Engineering data with these tasks.</p> | |
| <p>November 2016</p> | <p>Three updated templates: FIRM Panel Ortho, FIRM Panel Vector, and FIS Report.</p> <p>One new template: Inventory Worksheet.</p> | <p>Templates and Other Resources</p> |
| <p>July 2016</p> | <p>Standards Implementing Provisions of the NIP Reforms</p> <p>This Document Has Been Superseded. For Reference Only</p> <p>SID 620: A new standard to establish a requirement for additional Project Team coordination with community officials to solicit feedback regarding the appropriateness of engineering models planned for use on a flood risk study before the engineering analysis is begun.</p> <p>SID 621: A new standard to establish a requirement for additional Project Team coordination with community officials to solicit their feedback on draft flood hazard data.</p> <p>SID 622: A new standard to establish requirements for Project Team coordination with community officials, FEMA Regional External Affairs staff, and local radio and television outlets to educate the public about FEMA map revisions and appeals processes.</p> <p>SID 43: Based on the requirements for elevation data in BW-12, this standard was updated to state that elevation data selected for a Flood Risk Study must be the most accurate information available at the start of data development, in addition to complying with all relevant FEMA standards. If the best available elevation data does not comply with current standards, then FEMA should acquire new elevation data.</p> <p>SID 17: Technical Mapping Advisory Council (TMAC) recommendation #11 in its Annual Report indicated that FEMA should provide more flexibility in the size of its</p> | <p>Guidelines and Standards Policy</p> |

watershed projects, and not limit it to just the HUC-8 level. While the standard as previously written did allow for smaller watershed sizes to be selected, there was a concern that there may be cases where projects larger than the HUC-8 level might be desired. This standard update now provides for that flexibility. This change is driven by a TMAC recommendation, but is related to the watershed requirements in BW12.

Routine Standards Updates

SID 214: This standard was updated to align all of the potential regulatory products, including the National Flood Hazard Layer (NFHL), which might need to be updated as part of the Notice to Users (NTU) process. Additionally, the standard was updated to clarify formatting and distribution requirements for the NTU letter and revised products. Current practices are already consistent with the updated standard.

SID 507: This standard was updated to state that all regulatory products, including the FIRM database, are in agreement as it relates to flood hazard information. Previously, the FIRM database was not included in the standard. Additionally, the term “decimal point precision” was added to provide clarity on expectations for submitted data. Current practices are already consistent with the updated standard.

SID 417: This update was made to remove the requirement that the AAL data be included as part of risk assessments to improve how flood risk assessments are being performed and delivered within the program. This is being done due to concerns that have been raised throughout the program and its partners on the lack of value that the AAL data provides, the inaccuracy of its loss calculations, and the outdated nature of the census data it used (2000 vs. 2010 available in most recent versions). This change also makes it easier to leverage automated engineering data in the creation of the flood risk assessment dataset, which will result in a more credible product than the AAL data.

SID 438: This standard previously mandated that an older version of Hazus (2.1) be used as the basis for all census blocks delivered within the Flood Risk Database. The census blocks from this version were based on census data from the year 2000. Based on the updated flood risk assessment approach that has been updated in SID 417 and in guidance, this standard is no longer valid and has been rescinded. The FRD Technical Reference now indicates that the latest version of Hazus should be used.

SIDs 57, 180, 181, 425, 429, & 433: These standards all referenced the phrase “non-regulatory products”. Emphasis, however, is being made to refer to these as “flood risk products” instead of “non-regulatory products”. Minor terminology updates were made to these standards to be consistent with this change.

SIDs 423, 431, & 441: These were very technical, database standards that made more sense to include in the Flood Risk Database Technical Reference rather than have a standard for them. They were, therefore, rescinded as standards. However,

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| | <p>the specifications that each of these called for can all now be found in the FRD Tech Ref.</p> | |
| <p>July 2016</p> | <p>Guidance updates Implementing Provisions of the NFIP Reforms</p> <p>Areas of Potential Population Growth – Updated the Discovery and Stakeholder Engagement (Discovery) guidance to promote the collection and evaluate of future population growth areas. Updated the Areas of Mitigation Interest guidance to allow for the inclusion of these datasets.</p> <p>Non-Structural Mitigation Features – Updated the Discovery guidance to promote the collection and evaluation of non-structural flood mitigation features.</p> <p>Elevation Data – Updated the Elevation guidance to align with the update to SID #43, which requires the use of most accurate elevation data available at the time the data development during a Risk MAP Project.</p> <p>Watershed Approach – Updated the Discovery and Contiguous Community Matching guidance to clarify how watershed principles should be considered as part of the Project Scope refinement process.</p> <p>Other Inclusions – Updated the Discovery guidance to clarify the types of data from other federal agencies that should be identified and collected during Discovery. Updated the General Coastal Considerations, General Hydrology Considerations, Areas of Mitigation Interest, and Flood Insurance Study Report guidance to document how this data can be used and referenced as part of the study process, where applicable.</p> <p>Community Notifications – Updated the Discovery, Stakeholder Engagement (Discovery), and Stakeholder Engagement (Data and Product Development) guidance to include the new process for addressing the engineering models notification (SID #620) to community officials. Updated the Stakeholder Engagement (Data and Product Development) guidance to include the new process for addressing the data submission notification (SID #621) to community officials. Updated the Key Decision Point (KDP) guidance to reflect changes to the KDP forms and move other updates to align with the NFIP reforms.</p> <p>Education on Flood Risk – Updated the Stakeholder Engagement (Discovery), Stakeholder Engagement (Data and Product Development), Stakeholder Engagement (Preliminary NFIP Map Release), and Stakeholder Engagement (Risk Awareness) to clarify options in educating property owners about the flood risk in their community and how the flood risk can be addressed. Updated the newly transformed Stakeholder Engagement (Due Process) to clarify options in educating property owners about the flood risk in their community and how the flood risk can be addressed.</p> <p>Education on Benefits of Insurance – Updated the Stakeholder Engagement (Preliminary NFIP Map Release) to clarify options in educating property owners</p> | <p>Guidance and Technical Reference Documents</p> |

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about the benefits and costs of maintaining/acquiring flood insurance, including Preferred Risk Policies. Updated the newly transformed Stakeholder Engagement (Due Process) to clarify options in educating property owners about the benefits and costs of maintaining/acquiring flood insurance, including Preferred Risk Policies.

Education on Appeals and Map Revision Processes – Updated the Stakeholder Engagement (Preliminary NFIP Map Release) to include new guidance to further educate property owners about the appeals and map revision process using local media outlets (Radio and TV). Updated the newly transformed Stakeholder Engagement (Due Process) to include new guidance to further educate property owners about the appeals and map revision process using local media outlets (Radio and TV).

Level of Protection – Updated the Discovery guidance to document the data related to a structural or non-structural feature’s “level of protection” that should be collected during Discovery. Transformed the Levee-Specific Flood Risk Datasets and Dam-Specific Flood Risk Datasets guidance, which include some datasets that communicate certain aspects of protection.

Flood Risk Product-related updates

Flood Risk Assessment Guidance – Updated to reflect the removal of the 2010 Average Annualized Loss (AAL) data as a required flood risk assessment dataset. Modified the process by which the Flood Risk Assessment results would be calculated and stored, through the compilation and use of the best available depth grids in the project area.

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Flood Risk Map, Flood Risk Report, & Flood Risk Database Guidance – The terminology and references in these three guidance documents were updated to align with the changes made to the Flood Risk Assessment process and guidance.

Levee-Specific Flood Risk Products & Dam-Specific Flood Risk Products Guidance – These two guidance documents are a transformation of draft guidance that was prepared in 2013 but never formally published.

Flood Risk Database Technical Reference – Updated the database schema and terminology based on the Flood Risk Assessment changes.

Regulatory Product-related updates

FIRM Graphics Guidance – Revised, expanded, and clarified guidance for symbolizing different types of Limit Lines on the FIRM

FIRM Database Guidance – Added guidance about a revision note for new panel layouts and added references to the Projection and Coordinate Systems guidance.

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| <p>DVT Guidance – Updated to reflect changes to 3 DVT checks and corrected a known error in a table.</p> <p>PMRs Guidance – Expanded guidance about the required review periods that accompany PMRs.</p> <p>FIRM Panel, FIRM Database, & FIS Report Technical References – These three technical references were all updated to add the legend symbology, specifications, and text associated with the “Area with Flood Risk due to Levee” designation as a subtype of Zone D.</p> <p>Domain Tables Technical Reference – Updated 3 domain tables and added “Area with Flood Risk due to Levee” for Zone D flood hazards.</p> <p>Data Capture Technical Reference – Updated to clarify the need to submit an elevation inventory file with new topographic data purchases.</p> <p>Data Capture Workflow Guidance – Updated to changes references to automated engineering, the need to submit the elevation inventory file, aligned the list of quality records with the Technical Reference and other general updates.</p> <p>Other Routine updates</p> <p>LOMR Incorporation Guidance – Updated to clarify that data should match the FIRM database naming convention, areas outside of the LOMR are not required to show cross section elevations, and there should be decimal point precision agreement between all submitted products.</p> <p>Automated Engineering Guidance – Updated to reflect a terminology change throughout from First Order Approximation (FOA) to Automated Engineering, and to clarify vertical and horizontal tolerance checks as part of the validation process.</p> <p>Notice-to-User (NTU) Guidance – Updated to explain how pre-effective NTUs are to be processed and added information about updating the NFHL via an NTU.</p> <p>Base Map and FIRM Panel Layout – Updated to expand how suffixes are determined and advanced for each Risk MAP Project type.</p> <p>Endangered Species Act Compliance for Conditional Letters of Map Change – Minor updates to incorporate additional language changes as requested by the Office of Environmental Planning and Historic Preservation (OEHP) department to improve usefulness for users.</p> <p>Quality Review – Updated to accommodate the 30-day data review period which must be granted to communities prior to completion of Quality Review (QR) 1.</p> <p>Guidance Transformation</p> | |
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| | <p>Coastal: Water Levels Guidance – Transformed guidance, plus updated guidance informed by the results of a FEMA Coastal IPT project relating to “Incorporating Tides into Storm Surge modeling”. Outdated or obsolete methods or models were also removed as appropriate.</p> <p>Coastal: Notation, Acronyms, and Glossary Guidance – Transformed guidance, plus a reduction in terms that were in previous documents but have become outdated, obsolete, or irrelevant.</p> <p>Geospatial Data Coordination Guidance – Transformed to summarize GDC requirements for all phases of production, revised the monthly reporting section and clarified roles and responsibilities for all providers.</p> <p>FEDD File & TSDN Guidance – Transformed guidance, plus an update to the TSDN and FEDD File checklists to align better with the Data Capture Technical Reference and NFIP Reform requirements related to stakeholder engagement. Updated definition of the TSDN to remove references to a hardcopy notebook, now that digital submittals are used.</p> <p>Appeal and Comment Processing Guidance – Transformed guidance, plus additional clarification on when a second appeal period is required, proper usage of the Appeals Tracker, and support needs during the Scientific Resolution Panel process. This Document Has Been Superseded. For Reference Only</p> <p>Letters of Final Determination (LFD) Guidance – Transformed guidance, plus updated guidance on the use of the LFD Verification Summary Form and LFD Questionnaire.</p> <p>Projections & Coordinate Systems Guidance – Transformed guidance and added information about spatial reference systems and the applicability to Risk MAP Projects.</p> <p>General Hydrology Considerations Guidance – Transformed guidance and added a new section to address karst flooding.</p> <p>MT-1 Technical Guidance: Transformed guidance to provide information about MT-1 determinations and how to provide comments regarding flood hazard zones for lots, portion of lots, or existing or proposed structures.</p> | |
| <p>July 2016</p> | <p>Five updated templates: FEDD File Checklist, FIRM Panel Ortho, FIRM Panel Vector, FIS Report, Flood Risk Report, Notice to Users (NTU) Letter, TSDN Checklist, Alluvial Fan Metadata Profile, Hydraulics Metadata Profile, FIRM DB Schema, FRD Schema, NFHL Schema, and KDP 0-3 forms.</p> | <p>Templates and Other Resources</p> |

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| | <p>Added several new templates related to NFIP Reform action on community notifications.</p> | |
| <p>November 2015</p> | <p>Two new standards: SID 618 clarifies requirements for LOMRs to update the NFHL, including strengthening the requirement for an area of revision to be included in the NFHL regardless of whether the LOMR has a map attachment showing an area of revision or not. SID 619 provides clarification for how FEMA will interpret the “continuous or nearly continuous” element of the regulatory definition of a primary frontal dune.</p> <p>Three standard updates: SID 6 clarifies that the CNMS technical reference must be followed for validation and needs assessment. SID 139 replaces the term “equilibrium condition” for beach nourishment project areas with more appropriate terminology. SID 40, 43, and 46 updates to transition FEMA’s elevation requirements for new LiDAR to match the new USGS Specification which is the base standard for the 3D Elevation Program.</p> <p>Two standards rescinded: SID 47 and 48 are included in the new USGS Specification so they are no longer needed.</p> | <p>Guidelines and Standards Policy</p> |
| <p>November 2015</p> | <p>Twenty-five new guidance documents were added as part of the Guidance Transformation process: Coastal Erosion, Coastal Floodplain Mapping, Overland Wave Propagation, Coastal Structures, Coastal Wave Setup, Contiguous Community Matching, Data Capture – General, Data Capture – Workflow Details, Elevation, Consideration of the Endangered Species Act, Floodplain Boundary Standards, Federal Register Notices, LOMR Incorporation, Mapping Information Platform, Post-Preliminary Deliverables, Post-Preliminary Due Process, Preliminary Distribution and Revised Preliminary, Profile Baseline, Redelineation, Riverine Mapping and Floodplain, Stakeholder Engagement – Data and Product Development Phase, Stakeholder Engagement – Preliminary National Flood Insurance Program Map Release Phase Phase, Stakeholder Engagement – Project Planning Phase, Stakeholder Engagement – Risk Awareness Phase, and Versioning. As opposed to individual guidance topics that are specific to just the Atlantic/Gulf Coast, Great</p> | <p>Guidance Documents</p> |

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| | <p>Lakes, or Pacific Coast, each document consolidates the relevant guidance on that particular topic for Atlantic/Gulf, Great Lakes, and Pacific Coast studies (as applicable)</p> <p>Most of the transformed guidance documents continue the existing guidance and primarily clean-up and reorganize the information. There were also a few significant updates or enhancements:</p> <ul style="list-style-type: none"> • Data Capture guidance updates included new information for handling several situations where the existing data capture processes were not clear including appeals, revised preliminary maps, and correcting previously submitted data. • Coastal guidance has historically been broken out into separate documents for different geographic regions. The new coastal guidance is organized by coastal topic with all of the geographic regions included in a single document. • The guidance on Consideration of the Endangered Species Act document contains significant changes to clarify FEMA's role with the ESA for LOMCs, clarifies the required documentation, and differentiates between federal involvement projects versus non-federal involvement projects. • The Revised Preliminary guidance was updated to clarify situations where a revised preliminary should be issued <p>Seven guidance updates: Flood Insurance Rate Map (FIRM) Index, Flood Insurance Rate Map (FIRM) Database, Base Map, Flood Insurance Study (FIS) Report, First Order Approximation, National Floor Hazard Layer (NHFL), and Physical Map Revision (PMR). These were mainly minor technical updates to existing guidance.</p> | |
| <p>November 2015</p> | <p>Five technical reference updates: Data Capture, Flood Insurance Rate Map (FIRM) Database, Flood Insurance Rate Map (FIRM) Panel, Flood Insurance Study (FIS) Report, and Flood Risk Database (FRD).</p> | <p>Technical References</p> |

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| November 2015 | Updated the FIS Report Template, FRD Schema and added the Project Completion Certification Template. | Templates and Other Resources |
| July 2015 | <p>Six new standards: SID 612 sets the requirements for Key Decision Points (KDP), SID 613 establishes a standard implementing existing practice on eligibility for LOMAs in V Zones, SID 614 updates the methodology for determining the BFE for LOMAs located in coastal flood zones, SID 615 clarifies the timeline and notification of the timeline for Scientific Resolution Panels, SID 616 removes the requirement of the LOMR requestor to provide the review and processing fees if the LOMR is based on certain Federal or State funded projects, and SID 617 specifies how FEMA notifies Congress of certain actions associated with the issuance of preliminary and revised preliminary maps.</p> <p>Two standard updates: SID 218 added LOMR and CLOMR to the actions that may not be based on preliminary data and SID 229 clarifies that profile labeling requirements applies to “lettered” mapped cross sections.</p> | Guidelines and Standards Policy |
| July 2015 | <p>Seven new guidance documents: Zone A99 and Zone AR Determinations, Combined Coastal and Riverine Floodplain, Flood Insurance Rate Map (FIRM) Database, Flood Insurance Study (FIS) Report, Key Decision Point (KDP) Process, Physical Map Revision (PMR), and Calculation of Incident Wave Height and Slope for use with TAW Wave Runup Method.</p> <p>Four guidance updates: Database Verification Tool (DVT), FIRM Graphics, FIRM Index, and National Flood Hazard Layer (NFHL).</p> | Guidance Documents |
| July 2015 | Five technical reference updates: Coordinated Needs Management Strategy (CNMS), Domain Tables, FIRM Database, FIRM Panel, and FIS Report. | Technical References |

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| <p>November 2014</p> | <p>Nine new standards: 603 and 604 address the implementation of the Homeowner Flood Insurance Affordability Act provisions for AR and A99 levee status; 605 and 606 bring the existing Digital Use Policy over to the Risk MAP policy; and 607 to 611 specify certain technical / procedural details for National Flood Hazard Layer (NFHL) data processing.</p> <p>Six standard updates: 106 and 374 make minor changes to how we show and label Base Flood Elevations (BFE) on the Flood Insurance Rate Maps (FIRMs); 180, 371, 429, and 547 just changes the terminology to remove the word “standards” from “Data Capture Standards Technical Reference” to avoid confusion with the real standards.</p> <p>Standard 451 was rescinded so that we can process a levee deaccreditation by LOMR if appropriate.</p> | <p>Guidelines and Standards Policy Memo</p> |
| <p>November 2014</p> | <p style="text-align: center; color: red; font-weight: bold;">This Document Has Been Superseded. For Reference Only</p> <p>Five new guidance documents: BFE Mapping, FIRM Database, Digital Use Tool (DVT), Extraterritorial Jurisdiction (EJ) Mapping, First Order Approximations (FOA), and Levee Seclusion.</p> <p>Updated 3 existing guidance documents: Base Map, Metadata, and National Flood Hazard Layer (NFHL).</p> | <p>Guidance Documents</p> |
| <p>November 2014</p> | <p>Updates to six Technical References: Data Capture, Domain Tables, FIRM Database, Flood Insurance Study (FIS) Report, Flood Risk Database, and Metadata Profiles. Updates included adding implementation instructions and a table of revisions.</p> | <p>Technical References</p> |
| <p>May 2014</p> | <p>There were three standards changes. A revision to standard 387 to address Federal Register Flood Hazard Determinations Notice requirements. Two new standards, 601 related to Community Map Repository address requirements and 602 which addresses Levee system data sources.</p> | <p>Guidelines and Standards Policy Memo</p> |

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| <p>May 2014</p> | <p>As part of the guidance transformation process, the following list of guidance documents were created:</p> <p>Base Map, Discovery, Vertical Datum, Quality Review, Stakeholder Engagement: Discovery, Coastal Data Capture, Coastal Barrier Resources System, General Coastal Considerations, Coastal Study Documentation and Intermediate Data Submittals, National Flood Hazard Layer, Notice-to-User, Quality Management, Flood Risk Database, Flood Risk Map, Flood Risk Report, Changes Since Last FIRM, Flood Depth & Analysis Grids, Flood Risk Assessments, Areas of Mitigation Interest, Coastal-Specific Non-Regulatory Datasets, FIRM Graphics, FIRM Index, and Metadata.</p> | <p>Guidance Documents</p> |
| <p>May 2014</p> | <p>Flood Risk Database Technical Reference was updated to include an official matrix showing the correct coding of fields for Pre_Zone and New_Zone Combination.</p> <p>Other Technical Reference Updates included the removal of guidance as part of the guidance transformation and to reference corrections.</p> <p style="color: red; text-align: center; font-weight: bold;">This Document Has Been Superseded. For Reference Only</p> | <p>Technical References</p> |
| <p>August 2013</p> | <p>FEMA implemented a transformation of the guidelines and standards for flood risk mapping. These standards are consistent with the previous requirements for FEMA flood risk mapping. However, they represent a significant change in the way the requirements are organized that FEMA expects to result in more consistency nationally and improve production efficiency for the flood mapping program.</p> <p>The new approach clearly organizes standards and guidance separate categories, avoids ambiguity with respect to what is truly mandatory and what is recommended that existed in the prior combined guidelines and standards for flood hazard mapping documents and clarifies areas of flexibility creating opportunities for more efficient approaches.</p> <p>Additionally, few changes were implemented through the policy memo, notably non-accredited levee analysis and mapping procedures, refinements to the definition of the Risk MAP process and products, requirements for documentation of the basis for SFHA designations, requirements for an initial estimate of the likely impacts of</p> | <p>Guidelines and Standards Policy Memo</p> |

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| | <p>new analysis, new requirements for considering dune erosion, new vertical datum conversion requirements, updated lidar specifications, an updated quality management process and a few other minor refinements.</p> | |
| <p>November 2011</p> | <p>Appendix K was updated (along with Appendix L) to reflect a more automated map creation protocol with less manual cartographic finishing. Changes to the FIRM graphics reflected in this revision include the addition of colors and other improvements to the symbols to help communicate risk more efficiently. To this end, floodways and areas behind levees are symbolized more prominently. Base Flood Elevation (BFE) labels, rounded to the tenth of a foot, are now shown on cross sections. Additional interpolated BFEs may still be placed between cross sections to facilitate elevation determinations. The overall page size and layout of the FIRM has been changed to a more standard page size and the map collar information was streamlined.</p> | <p>Appendix K</p> |
| <p>November 2011</p> | <p>This Document Has Been Superseded. For Reference Only</p> <p>Appendix L was updated (along with Appendix K) to reflect changes made to the FIRM panel, the FIS Report (including the Map Index) and the Data Capture Standards. This update allowed for more automated and streamlined production of the FEMA regulatory products. Changes to the FIRM Database implemented in this update include inclusion of key engineering data previously specified in Appendix M, new tables to store information needed to automate the FIS Report tables and profiles, greater reliance on the profile baseline and updated delivery file formats.</p> | <p>Appendix L</p> |
| <p>July 2011</p> | <p>Appendix I revision provided additional guidance to be used by project teams while performing Discovery for Risk MAP projects, including an emphasis on up-front stakeholder coordination, engagement prior to meeting with communities and the desired outcomes expected as part of the process.</p> | <p>Appendix I</p> |

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| <p>November 2009</p> | <p>Added clarification on documentation requirements; hydrology guidance updates for rainfall-runoff modeling, statistical analyses, 1D steady flow, 1D unsteady flow, and 2D modeling; floodway guidance updates for 1D steady flow, 1D unsteady flow, 2D, and link-node models and floodplain delineation guidance updates for 1D and 2D models.</p> | <p>Appendix C</p> |
| <p>April 2003</p> | <p>Revised FEMA process for maintaining these guidelines and requirements for Physical Map Revision (PMR) request submittals.</p> | <p>Introduction</p> |
| <p>April 2003</p> | <p>Added discussion of Monitoring Information on Contracted Studies (MICS) system, methods for updating alluvial fan flood hazards; added final digital Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM) deliverable specifications; added description of revised countywide FIRM distribution protocol; updated Letter of Map Change (LOMC) Distribution Service discussion to include Final Summaries of Map Action (SOMAs) and LOMC-VALID letters.</p> | <p>Volume 1</p> |
| <p>April 2003</p> | <p>Added guidance on Report and Map Production, processing for PMRs consistent with Volume 1; updated SOMA and LOMC validation process; added guidance for the preparation of LOMR attachments.</p> | <p>Volume 2</p> |
| <p>April 2003</p> | <p>Added requirements for Final SOMA and LOMC Distribution Service product; replaced requirements for Credited Structures Inventory System with requirements for FEMA Levee Inventory System; added requirements for production of Compendium of Flood Map Changes; revised requirements for use and maintenance of MICS system; added information on technical and administrative support data available from the FEMA archives, current fees, removed requirement for delivery of hard copy FIS report as part of deliverables for Engineering Study Data Package; provided clarification on deliverables for Letter of Determination Review requests and revised requirements for maintenance of Cooperating Technical Partners (CTP) Database.</p> | <p>Volume 3</p> |

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| April 2003 | Deleted NIMA's Vector Product Format (VPF) and added MapInfo's native tabular format (TAB); also added requirement to document the geoid model and ellipsoid used. | Appendix A |
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| April 2003 | Reference made to the new FEMA Levee Inventory System; clarification added for levee freeboard requirements. | Appendix H |
| April 2003 | Added subsection explaining the Mapping Needs Update Support System (MNUSS) template; revised the Community Partner Memorandum and Agreement template; revised Statement of Work template; added table to show correlations between templates and data in MICS system; added requirements for CTP Mapping Activity Statements and templates. | Appendix I |
| April 2003 | Revised guidance for Preliminary FIS reports and final FIS report deliverable format; added examples of Flood Insurance Zone Data tables. | Appendix J |
| April 2003 | Changed numerous FIRM graphic specifications. | Appendix K |
| April 2003 | Updated Standard DFIRM database specifications; added enhanced DFIRM database specifications. | Appendix L |
| April 2003 | Added form for certification of work on Flood Map Projects; clarified requirements for submittal of Technical Support Data Notebook (TSDN) Indexes and inserted revised Indexes; added general TSDN requirements for coastal flooding analyses, shallow flooding analyses, ice-jam flooding analyses and alluvial fan flooding analyses; clarified requirements for receiving Mapping Partner review of data submitted in support of community-initiated map revision. | Appendix M |

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