



The Federal Emergency Management Agency (FEMA) maintains guidelines and standards to support the Risk Mapping, Assessment and Planning (MAP) program. These guidelines and standards define the specific implementation of the statutory and regulatory requirements for National Flood Insurance Program (NFIP) flood risk analysis and mapping and address the performance of flood risk projects, processing of letters of map change and related Risk MAP activities. More information is available at: <http://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping>

The standards for Risk MAP are all compiled in the [Policy for Flood Risk Analysis and Mapping](#), originally published in August 2013. FEMA has instituted a semi-annual maintenance process for this policy to address ongoing needs for updated standards and to provide regular updates of the procedures for mapping. An update to the policy was completed November 30, 2014.

The changes to the policy were made available for public review, which provided an opportunity for comment prior to incorporation into the policy. This review period lasted from August 4, 2014 through September 3, 2014. During this period, there were no comments received.

#### Summary of standard changes:

- Standards 603 and 604 are intended to clarify the implementation of the changes made by the Homeowner Flood Insurance Affordability Act to the eligibility for Zone AR and A99 designations. Since the law supersedes our existing regulations, the standards highlight where the law governs.
- Standard 451 is rescinded because implementation of new levee coordination processes has made the prior prohibition on using letter of map revision to show a sea credited levee unnecessary.
- Standards 106 and 374 are changed to improve the implementation of showing Base Flood Elevations (BFEs) to 0.1ft, primarily at cross section locations and to use stable BFEs consistent with this approach where appropriate.
- Standards 605 and 606 restate the existing digital flood data use policy to incorporate it into the Risk MAP standards and retire the prior policy as a stand-alone document. Standard 605 also adds a requirement that products are labeled as compliant with the requirements.
- Standards 607-611 formalize existing National Flood Hazard Layer (NFHL) processes as standards to improve compliance.
- The remaining standards changes are administrative to update the name of the Data Capture *Standards* Technical Reference to the Data Capture Technical Reference.

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The standards changes are listed below with the Standard Identification Number (SID #), key words assigned to the standard, the original version of the standard (if applicable) and the revised version of the standard.

## Proposed Changes

SID #	Keyword Tags	Primary Keyword	Original Standard	Revised/New Standard
603 (new)	Levees; Zone A99	Levee	New Standard	Requests for a determination of adequate progress toward completion of flood protection systems must meet the data and documentation requirements outlined in 44 CFR 61.12 <sup>i</sup> , except where superseded by Section 19, Part a, of the Homeowner Flood Insurance Affordability Act, 42 U.S.C. § 4014(e) <sup>ii</sup> . 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 CFR 61.12.b.
604 (new)	Levees; Zone AR	Levee	New 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 44 CFR 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 CFR 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.

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451 (revised)	Levee; Physical Map Revision (PMR); Letter of Map Revision (LOMR)	Levee	A LOMR shall not be used to revise a community's Flood Insurance Rate Map (FIRM) panels to reflect a de-accredited or non-accredited levee system.	Standard rescinded
106 (revised)	Coastal; Base Flood Elevation (BFE); Ponding; Lacustrine	BFEs	Whole-foot rounded BFEs must be used in ponding, coastal and lacustrine flood hazard zones.	BFEs for ponding and lacustrine areas must be expressed to the 10th of a foot if they have been calculated to that level of precision; otherwise they should be shown as whole-foot rounded elevations. Unrevised lake and ponding elevations may be converted to 10th foot elevations if supported by technical data on a project-by-project basis in coordination with the FEMA Project Officer. BFEs for coastal flood zones must be shown as whole foot elevations.
374 (revised)	FIRM Database; Preliminary FIRM Database (Deliverables); Final FIRM Database (Regulatory Deliverables); Flood Theme; Base Flood Elevation (BFE); Cross- sections	BFEs	BFE lines must be placed at their interpolated whole-foot location along the profile baseline only when there is not at least one cross section in S_XS in the FIRM Database for every 1-foot vertical rise in the 1-percent annual chance flood elevation.	BFEs (i.e., cross-section values supplemented with BFE lines where needed) must be shown at appropriate locations to allow map users to accurately interpolate flood elevations both horizontally and vertically.

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605 (new)	Regulatory Products; FIRM Database; Final FIRM Database (Regulatory Deliverables); Flood Insurance Rate Map (FIRM); Final FIRM (Regulatory Deliverables); National Flood Hazard Layer (NFHL)	National Flood Hazard Layer (NFHL)	New 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 (new)	Regulatory Products; FIRM Database; Final FIRM Database (Regulatory Deliverables); Flood Insurance Rate Map (FIRM); Final FIRM (Regulatory Deliverables); National Flood Hazard Layer (NFHL)	National Flood Hazard Layer (NFHL)	New 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.

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607 (new)	Regulatory Products; FIRM Database; Final FIRM Database (Regulatory Deliverables); Flood Insurance Rate Map (FIRM); Final FIRM (Regulatory Deliverables); National Flood Hazard Layer (NFHL)	National Flood Hazard Layer (NFHL)	New 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 (new)	Regulatory Products; FIRM Database; Final FIRM Database (Regulatory Deliverables); Flood Insurance Rate Map (FIRM); Final FIRM (Regulatory Deliverables); National Flood Hazard Layer (NFHL)	National Flood Hazard Layer (NFHL)	New Standard	Regional Flood Hazard Layer (RFHL) submittals must be submitted in a geodatabase format that matches the current NFHL schema in the FIRM Database Technical Reference.

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609 (new)	Regulatory Products; FIRM Database; Final FIRM Database (Regulatory Deliverables); Flood Insurance Rate Map (FIRM); Final FIRM (Regulatory Deliverables); National Flood Hazard Layer (NFHL)	National Flood Hazard Layer (NFHL)	New Standard	Digital Flood Insurance Rate Map (DFIRM) study data incorporated into the NFHL must be obtained from the FINAL_DFIRM_DB task Mapping Information Platform (MIP) folder for the associated Risk MAP project case number.
610 (new)	Regulatory Products; FIRM Database; Final FIRM Database (Regulatory Deliverables); Flood Insurance Rate Map (FIRM); Final FIRM (Regulatory Deliverables); National Flood Hazard Layer (NFHL)	National Flood Hazard Layer (NFHL)	New 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.

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611 (new)	Regulatory Products; FIRM Database; Final FIRM Database (Regulatory Deliverables); Flood Insurance Rate Map (FIRM); Final FIRM (Regulatory Deliverables); National Flood Hazard Layer (NFHL)	National Flood Hazard Layer (NFHL)	New 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.
180 (revised)	Data Capture	Data Capture	<p>All regulatory and non-regulatory deliverables and relevant supporting data must be submitted in one of the acceptable file format(s) and in the directory structure outlined in the <u>Data Capture Standards Technical Reference</u><sup>iii</sup>.</p> <p>If data are collected that are not specifically mentioned in the <u>Data Capture Standards Technical Reference</u> 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.</p>	<p>All regulatory and non-regulatory deliverables and relevant supporting data must be submitted in one of the acceptable file format(s) and in the directory structure outlined in the Data Capture Technical Reference.</p> <p>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.</p>

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371 (revised)	FIRM Database; Preliminary FIRM Database (Deliverables); Final FIRM Database (Regulatory Deliverables); FIRM Database Metadata; Submittal Requirements	Data Capture	<p>The following Regulatory deliverables must be submitted using the file formats and directory structure specified in the <u><a href="#">Data Capture Standards Technical Reference</a></u>.</p> <ul style="list-style-type: none"> <li>• Transmittal Form</li> <li>• FIRM Database</li> <li>• Orthophotos (if applicable)</li> <li>• FIRM Scans</li> <li>• World Files</li> <li>• FIS Report</li> <li>• Transmittal to Community Chief Executive Officer (CEO)</li> <li>• Community Map Action List</li> <li>• Inventory Worksheet for Each Community</li> </ul>	<p>The following Regulatory deliverables must be submitted using the file formats and directory structure specified in the Data Capture Technical Reference.</p> <ul style="list-style-type: none"> <li>• Transmittal Form</li> <li>• FIRM Database</li> <li>• Orthophotos (if applicable)</li> <li>• FIRM Scans</li> <li>• World Files</li> <li>• FIS Report</li> <li>• Transmittal to Community CEO</li> <li>• Community Map Action List</li> <li>• Inventory Worksheet for Each Community</li> </ul>
429 (revised)	Flood Risk Database (FRD); Flood Risk Report (FRR); Flood Risk Map (FRM); Data Capture; Non-Regulatory Products	Data Capture	<p>The following Non-regulatory deliverables must be submitted using the file formats and directory structure specified in the <u><a href="#">Data Capture Standards Technical Reference</a></u>.</p> <ul style="list-style-type: none"> <li>• Flood Risk Database</li> <li>• Depth and Analysis Grids</li> <li>• Metadata file</li> <li>• Full text of the Flood Risk Report with bookmarks, a hyperlinked table of contents and section headings.</li> <li>• Flood Risk Map</li> </ul>	<p>The following Non-regulatory deliverables must be submitted using the file formats and directory structure specified in the Data Capture Technical Reference.</p> <ul style="list-style-type: none"> <li>• Flood Risk Database</li> <li>• Depth and Analysis Grids</li> <li>• Metadata file</li> <li>• Full text of the Flood Risk Report with bookmarks, a hyperlinked table of contents and section headings.</li> <li>• Flood Risk Map</li> </ul>
547 (revised)	Data Capture; Elevation Data; Topographic Data	Elevation Data	<p>If topographic breaklines are produced and submitted, the Topographic Breakline Topology Rules outlined in the <u><a href="#">Data Capture Standards Technical Reference</a></u> must be followed.</p>	<p>If topographic breaklines are produced and submitted, the Topographic Breakline Topology Rules outlined in the Data Capture Technical Reference must be followed.</p>

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181 (revised)	Data Capture; Regulatory Products; FIRM Database; FIRM Database Metadata	Data Capture	A metadata file in Extensible Markup Language (XML) format must be submitted that complies with the <u><i>Metadata Profiles Technical Reference</i></u> for the applicable task with each DCS submittal.	A metadata file in XML format must be submitted that complies with the Metadata Profiles Technical Reference for each applicable task for regulatory and non-regulatory deliverables or relevant supporting data submittals.
549 (revised)	FIRM Database metadata; Data Capture	Metadata	<p>The metadata files submitted for each applicable Data Capture Standard (DCS) task must comply with the <u><i>Metadata Profiles Technical Reference</i></u> and must document the data being submitted and include the following elements:</p> <ul style="list-style-type: none"> <li>• Identification Information</li> <li>• Data Quality Information</li> <li>• Spatial Reference Information</li> <li>• Entity and Attribute Information</li> <li>• Distribution Information</li> <li>• Metadata Reference Information</li> </ul>	<p>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:</p> <ul style="list-style-type: none"> <li>• Identification Information</li> <li>• Data Quality Information</li> <li>• Spatial Reference Information</li> <li>• Entity and Attribute Information</li> <li>• Distribution Information</li> <li>• Metadata Reference Information</li> </ul>

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<sup>i</sup> 44 CFR 61.12 – Copies of Title 44 (Emergency Management and Assistance) of the Code of Federal Regulations can be found at [www.ecfr.gov](http://www.ecfr.gov)

<sup>ii</sup> For more information on the Homeowner Flood Insurance Affordability Act (H.R. 3370) please search “HR 3370” on [www.congress.gov](http://www.congress.gov)

<sup>iii</sup> Technical References can be found on <http://www.fema.gov/media-library/assets/documents/34519>