



## Risk MAP Guidelines and Standards (G&S) 2015 Fall Maintenance Cycle

The Federal Emergency Management Agency (FEMA) maintains guidelines and standards to support the Risk Mapping, Assessment and Planning (Risk MAP) Program. These guidelines and standards define the specific implementation of the statutory and regulatory requirements for the National Flood Insurance Program (NFIP). These also outline the performance of Flood Risk Projects, processing of Letters of Map Change (LOMCs) and related Risk MAP activities. More information is available at: [www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping](http://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping).

FEMA has a maintenance plan for the Risk MAP guidelines and standards and issues updates on a semi-annual basis. This notice provides information about the fall semi-annual update, expected to be released in November 2015.

A summary of the proposed changes to standards, guidance and related documents is listed below. This update includes ongoing transformation of legacy guidelines and specifications to produce new guidance documents that reflect changes to the FEMA standards policy. These transformation topics are also listed below.

The [Policy for Flood Risk Analysis and Mapping](#)<sup>1</sup> comprises the standards for practitioners of the Risk MAP program. This policy outlines FEMA’s requirements to produce better overall consistency and more efficient operation of mapping activities. There are 4 proposed changes to the policy included in the summary of changes below. FEMA published the draft changes to standards for public comment as part of the maintenance process for the Risk MAP standards. The draft change in language for the standards is included after the summary of proposed changes, and instructions for commenting on the draft language is provided.

If you have feedback about FEMA’s guidelines and standards, you may submit comments or suggestions by e-mail to [FEMA.GS@riskmapcnds.com](mailto:FEMA.GS@riskmapcnds.com).

## Proposed Changes

Item #	Doc. Type	Subject	Description
1	Standard	Update Standard 139	Update Standard ID (SID) 139, which addresses beach nourishment projects, to modify the language that references "equilibrium conditions".
2	Standard	Update Standard 6	Update the standard so that it explicitly references the Coordinated Needs Management System (CNMS) Technical Reference as the criteria for validation.
3	Standard	Elevation Standards Update	Update the elevation standards to be consistent with the latest United States Geological Survey – National Geospatial Program (USGS-NGP) specifications.

<sup>1</sup> [www.fema.gov/media-library/assets/documents/35313](http://www.fema.gov/media-library/assets/documents/35313)

Item #	Doc. Type	Subject	Description
4	Standard	LOMR Standard	New standard to account for Letters of Map Revision (LOMRs) that only update FIS Reports.
5	Standard	PFD Standard	New Standard that would limit primary frontal dunes (PFD) revisions on a property-by-property basis.
6	Guidance	Appeals Guidance	Transformation of appeals and Scientific Resolution Panel guidance, with updates to reflect recent reform legislation.
7	Guidance	Guidance Maintenance	Updates to the Flood Insurance Rate Map (FIRM) Index, Physical Map Revision (PMR), FIRM Database Verification Tool (DVT) and Flood Insurance Study (FIS) Report guidance documentcnmss to provide additional clarification and improve consistency with technical references.
8	Guidance	LOMR Fee Exemption	New guidance document to address fee exemptions for LOMR requests.
9	Technical Reference	Technical Reference Maintenance	Updates to the Flood Insurance Rate Map (FIRM) Panel, FIRM Database, Flood Insurance Study (FIS) Report, and Flood Risk Database (FRD) technical references to enhance consistency with other guidance documents.
10	Technical Reference	Metadata	Update the technical reference and templates to add a First Order Approximation (FOA) metadata profile

## Guidance Transformation

Item #	Guidance Transformation Topic Name
1	Coastal: Floodplain Mapping
2	Coastal: Erosion
3	Coastal: Overland Wave Propagation
4	Coastal: Structures
5	Coastal: Temporary Disturbances
6	Coastal: Wave Setup
7	Contiguous Community Matching
8	Data Capture
9	Elevation Data
10	Endangered Species Act (ESA) requirements for Conditional Letter of Map Revisions (CLOMRs) and CLOMR based on fill (CLOMR-Fs)
11	Floodplain Boundary Standard (FBS)
12	Federal Register
13	FIRM Panel Layout
14	General Hydraulics Considerations
15	LOMR Incorporation
16	Mapping Information Platform (MIP)
17	Post-Preliminary Deliverables
18	Post-Preliminary Due Process

Item #	Guidance Transformation Topic Name
19	Preliminary Distribution
20	Profile Baseline
21	Redelineation
22	Riverine Mapping & Floodplain Boundaries
23	Stakeholder Engagement: Data & Product Development
24	Stakeholder Engagement: Preliminary NFIP Map Release
25	Stakeholder Engagement: Project Planning
26	Stakeholder Engagement: Risk Awareness
27	Versioning

## Standards Public Review

As part of this current update, the table below lists proposed updates to existing standards and drafts of new standards.

FEMA intends to publish these standards as a part of the 2015 Fall update to the Policy for Flood Risk Analysis and Mapping. The included draft standards are being made available for public review to provide an opportunity for comment prior to incorporation into the policy. The reasons for the changes are summarized above.

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

SID #	Keyword Tags	Primary Keyword	Original Standard	Revised/New Standard
6	Coordinated Needs Management System (CNMS)	CNMS	Results from both flood hazard validation and needs assessment processes must be stored within the national CNMS database.	Both flood hazard validation and needs assessment processes must follow the CNMS Technical Reference and the results must be stored within the national CNMS database.
40	Elevation Data, Field Survey, Topographic Data	Elevation Data	New elevation data purchased by FEMA must comply with the current U.S. Geological Survey (USGS) National Geospatial Program Base Light Detection and Ranging (LiDAR) Specification Version 1.0, except where specifically noted in other FEMA standards.	New elevation data purchased by FEMA must comply with the current USGS National Geospatial Program Base LiDAR Specification Version 1.2, except hydroflattening is not required and a classified point cloud and a bare earth DEM deliverable are not required.

SID #	Keyword Tags	Primary Keyword	Original Standard	Revised/New Standard
43	Elevation Data, Contours, Terrain Data, Topographic Data	Elevation Data	Existing topographic data leveraged by FEMA must have documentation that it meets the following vertical accuracy requirements:  Reference Table <sup>2</sup>	Existing topographic data leveraged by FEMA must have documentation that it meets the following vertical accuracy requirements:  Reference Table <sup>3</sup>

#### Vertical Accuracy Requirements based on Flood Risk and Terrain Slope within the Floodplain being Mapped

Level of Flood Risk	Typical Slopes	Specification Level	Vertical Accuracy: 95% Confidence Level FVA/CVA	LiDAR Nominal Pulse Spacing (NPS)
High (Deciles 1,2,3)	Flattest	Highest	24.5 cm / 36.3 cm	≤ 2 meters
High (Deciles 1,2,3)	Rolling or Hilly	High	49.0 cm / 72.6 cm	≤ 2 meters
High (Deciles 2,3,4,5)	Hilly	Medium	98.0 cm / 145 cm	≤ 3.5 meters
Medium (Deciles 3,4,5,6,7)	Flattest	High	49.0 cm / 72.6 cm	≤ 2 meters
Medium (Deciles 3,4,5,6,7)	Rolling	Medium	98.0 cm / 145 cm	≤ 3.5 meters
Medium (Deciles 3,4,5,6,7)	Hilly	Low	147 cm / 218 cm	≤ 5 meters
Low (Deciles 7,8,9,10)	All	Low	147 cm / 218 cm	≤ 5 meters

#### Vertical Accuracy Requirements based on Flood Risk and Terrain Slope within the Floodplain being Mapped

Level of Flood Risk	Typical Slopes	Specification Level	Vertical Accuracy: 95% Confidence Level (FVA or NVA) / (CVA or VVA)	LiDAR Nominal Pulse Spacing (NPS)
High (Deciles 1,2,3)	Flattest	Highest	24.5 cm / 36.3 cm	≤ 2 meters
High (Deciles 1,2,3)	Rolling or Hilly	High	49.0 cm / 72.6 cm	≤ 2 meters
High (Deciles 2,3,4,5)	Hilly	Medium	98.0 cm / 145 cm	≤ 3.5 meters
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Medium (Deciles 3,4,5,6,7)	Rolling	Medium	98.0 cm / 145 cm	≤ 3.5 meters
Medium (Deciles 3,4,5,6,7)	Hilly	Low	147 cm / 218 cm	≤ 5 meters
Low (Deciles 7,8,9,10)	All	Low	147 cm / 218 cm	≤ 5 meters

SID #	Keyword Tags	Primary Keyword	Original Standard	Revised/New Standard
46	Data Capture, Elevation Data, Topographic Data	Elevation Data	When bare earth post-processing is included in the project the Supplemental Vertical Accuracy (SVA) for up to three significant land cover categories shall be tested in addition to the open/bare ground areas already tested for Fundamental Vertical Accuracy (FVA). Up to three land cover categories making up 10% or more of the project area should be included in the SVA testing.	When a classified point cloud and a Digital Elevation Model (DEM) deliverable are included in a new elevation data collection, checkpoints for Vegetated Vertical Accuracy (VVA) must fall within the DEM footprint.
47	Data Capture, Elevation Data, Topographic Data	Elevation Data	Terrain processing areas greater than 2,000 square miles must be divided into smaller blocks of 2,000 square miles or less and tested as individual areas.	Standard rescinded
48	Data Capture, Elevation Data, Terrain Data	Elevation Data	Checkpoints used for testing SVA of the bare earth elevation product must be located in the areas where bare earth post-processing was performed, distributed to avoid clustering, and support vertical accuracy reporting that is representative of the post processed areas.	Standard rescinded
139	Coastal, Topographic Data, Elevation Data, Coastal Erosion, Hydraulics	Coastal	For coastal Flood Risk Projects, where topographic data reflects recent beach nourishment projects, and beach berms or dunes do not reflect equilibrium conditions or have long-standing vegetative cover as per 44 CFR 65.11, the data shall be adjusted to reflect equilibrium conditions prior to conducting the storm-induced erosion and onshore wave hazard analyses.	For coastal Flood Risk Projects, where topographic data reflects a temporary disturbance due to recent beach nourishment and/or dune construction projects, and beach berm or dune geometry are not representative of anticipated natural conditions nor have long-standing vegetative cover as per 44CFR 65.11, the data shall be adjusted to be representative of anticipated natural conditions prior to conducting the storm-induced erosion and onshore wave hazard analyses.

SID #	Keyword Tags	Primary Keyword	Original Standard	Revised/New Standard
618	LOMR, FIS Report, FIRM Database	LOMR	New Standard	LOMRs, including those that only revise an FIS Report, shall be accompanied by all relevant FIRM Database items, including the LOMR bounding box. All FIRM Database items shall be prepared in accordance with the FIRM Database Technical Reference and incorporated into the National Flood Hazard Layer (NFHL).
619	Coastal, Primary Frontal Dune	Coastal	New Standard	When revising the dune feature identified as the Primary Frontal Dune in an effective FIS, the new feature must be as continuous or more continuous than the effective PFD. This is especially important in areas with multiple ridges throughout a dune field, areas with man-made dunes, and property-specific revisions. Community coordination may be required to make this assessment.

## How to Submit Comments to FEMA

You may provide comments via email at: [FEMA.GS@riskmapcds.com](mailto:FEMA.GS@riskmapcds.com). Comments received prior to September 1, 2015, will be reviewed and addressed as appropriate before the standards are finalized.