



## Policy for Flood Risk Analysis and Mapping: Public Review Summary (June 2016)

### Summary of Standards Changes – June 2016

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 issues updates to the Risk MAP guidelines and standards on a semi-annual basis. These are the standards changes implemented for the spring semi-annual update, released in June 2016. Below the summary of changes are the public comments received and responses to those comments.

This update includes routine updates and new and updated standards to implement the mapping program defined by the Biggert Waters Flood Insurance Reform Act (BW12) and the Homeowner Flood Insurance Affordability Act that can be completed without new regulations.

### Standards Implementing Provisions of the NFIP Reforms

**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.

**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.

**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.

**Standard 43:** Based on the requirements for elevation data in the Biggert Waters Flood Insurance Reform Act of 2012, this standard was updated to state that elevation data selected for a Flood Risk Study must be the most accurate information available at the time of Key Decision Point (KDP) 1, 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.

**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 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

**Standard 214:** This standard was updated to align all of the potential regulatory products, including the National Flood Hazard Layer (NFHL), that 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.

**Standard 507** was updated to state that all regulatory products, including the Flood Insurance Rate Map (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, the specifications that each of these called for can all now be found in the FRD Tech Ref.

**Significant Changes**

| SID #                      | Original Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Revised/New Standard                                                                                                                                                                                                                                                                                  |                                                                     |                                   |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                |                     |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |
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| 17                         | Discovery is a mandatory element of all Flood Risk Projects, and must be conducted on the same scale at which the Flood Risk Project is initiated. All watershed-based Discovery must be initiated at a geographic footprint no larger than the HUC-8 level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Discovery is a mandatory element of all Flood Risk Projects, and must be conducted on the same scale at which the Flood Risk Project is initiated. All watershed-based Discovery must be initiated at a geographic footprint that encompasses the hydrologic characteristics of the area of interest. |                                                                     |                                   |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                |                     |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |
| 43                         | <p>Existing topographic data leveraged by FEMA must have documentation that it meets the following vertical accuracy requirements:</p> <p><b>Vertical Accuracy Requirements based on Flood Risk and Terrain Slope within the Floodplain being Mapped</b></p> <table border="1" data-bbox="201 678 1079 1027"> <thead> <tr> <th>Level of Flood Risk</th> <th>Typical Slopes</th> <th>Specification Level</th> <th>Vertical Accuracy: 95% Confidence Level (FVA or NVA) / (CVA or VVA)</th> <th>LiDAR Nominal Pulse Spacing (NPS)</th> </tr> </thead> <tbody> <tr> <td>High (Deciles 1,2,3)</td> <td>Flattest</td> <td>Highest</td> <td>24.5 cm / 36.3 cm</td> <td>≤ 2 meters</td> </tr> <tr> <td>High (Deciles 1,2,3)</td> <td>Rolling or Hilly</td> <td>High</td> <td>49.0 cm / 72.6 cm</td> <td>≤ 2 meters</td> </tr> <tr> <td>High (Deciles 2,3,4,5)</td> <td>Hilly</td> <td>Medium</td> <td>98.0 cm / 145 cm</td> <td>≤ 3.5 meters</td> </tr> <tr> <td>Medium (Deciles 3,4,5,6,7)</td> <td>Flattest</td> <td>High</td> <td>49.0 cm / 72.6 cm</td> <td>≤ 2 meters</td> </tr> <tr> <td>Medium (Deciles 3,4,5,6,7)</td> <td>Rolling</td> <td>Medium</td> <td>98.0 cm / 145 cm</td> <td>≤ 3.5 meters</td> </tr> <tr> <td>Medium (Deciles 3,4,5,6,7)</td> <td>Hilly</td> <td>Low</td> <td>147 cm / 218 cm</td> <td>≤ 5 meters</td> </tr> <tr> <td>Low (Deciles 7,8,9,10)</td> <td>All</td> <td>Low</td> <td>147 cm / 218 cm</td> <td>≤ 5 meters</td> </tr> </tbody> </table> | 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 | 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 | <p>All updated flood hazard data shown on the Flood Insurance Rate Map (FIRM), in the FIRM Database and Flood Insurance Study (FIS) must be based on the most accurate existing topographic data available to FEMA before the start of data development and the data must have documentation that it meets the following vertical accuracy requirements:</p> <p><b>Vertical Accuracy Requirements based on Flood Risk and Terrain Slope within the Floodplain being Mapped</b></p> <table border="1" data-bbox="1119 813 1997 1162"> <thead> <tr> <th>Level of Flood Risk</th> <th>Typical Slopes</th> <th>Specification Level</th> <th>Vertical Accuracy: 95% Confidence Level (FVA or NVA) / (CVA or VVA)</th> <th>LiDAR Nominal Pulse Spacing (NPS)</th> </tr> </thead> <tbody> <tr> <td>High (Deciles 1,2,3)</td> <td>Flattest</td> <td>Highest</td> <td>24.5 cm / 36.3 cm</td> <td>≤ 2 meters</td> </tr> <tr> <td>High (Deciles 1,2,3)</td> <td>Rolling or Hilly</td> <td>High</td> <td>49.0 cm / 72.6 cm</td> <td>≤ 2 meters</td> </tr> <tr> <td>High (Deciles 2,3,4,5)</td> <td>Hilly</td> <td>Medium</td> <td>98.0 cm / 145 cm</td> <td>≤ 3.5 meters</td> </tr> <tr> <td>Medium (Deciles 3,4,5,6,7)</td> <td>Flattest</td> <td>High</td> <td>49.0 cm / 72.6 cm</td> <td>≤ 2 meters</td> </tr> <tr> <td>Medium (Deciles 3,4,5,6,7)</td> <td>Rolling</td> <td>Medium</td> <td>98.0 cm / 145 cm</td> <td>≤ 3.5 meters</td> </tr> <tr> <td>Medium (Deciles 3,4,5,6,7)</td> <td>Hilly</td> <td>Low</td> <td>147 cm / 218 cm</td> <td>≤ 5 meters</td> </tr> <tr> <td>Low (Deciles 7,8,9,10)</td> <td>All</td> <td>Low</td> <td>147 cm / 218 cm</td> <td>≤ 5 meters</td> </tr> </tbody> </table> <p>If data is not available that meets these requirements, new elevation data must be obtained.</p> | 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 | 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 |
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| High (Deciles 1,2,3)       | Flattest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Highest                                                                                                                                                                                                                                                                                               | 24.5 cm / 36.3 cm                                                   | ≤ 2 meters                        |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                |                     |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |
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| Low (Deciles 7,8,9,10)     | All                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Low                                                                                                                                                                                                                                                                                                   | 147 cm / 218 cm                                                     | ≤ 5 meters                        |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                |                     |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |
| 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                      |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                |                     |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |
| 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                        |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                |                     |                                                                     |                                   |                      |          |         |                   |            |                      |                  |      |                   |            |                        |       |        |                  |              |                            |          |      |                   |            |                            |         |        |                  |              |                            |       |     |                 |            |                        |     |     |                 |            |

| SID # | Original Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Revised/New Standard                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| 214   | During the Notice-to User revision process: <ul style="list-style-type: none"> <li>• the FIRM database must be corrected as appropriate</li> <li>• the FIS Report, FIRM, and/or FBFM must be corrected and indicate on the document the reprinted date;</li> <li>• the corrected components must be distributed to all entities that received the defective product; and</li> <li>• the corrected components must be updated on the MSC<sup>1</sup> site.</li> </ul> | During the Notice-to-User revision process: <ul style="list-style-type: none"> <li>• the FIS, FIRM panel(s), FIRM database, and NFHL<sup>2</sup> must be corrected as appropriate</li> <li>• the corrected components must indicate the appropriate date;</li> <li>• the corrected components must be distributed to the communities affected by the correction; and</li> <li>• the corrected components must be updated on the MSC site.</li> </ul> |

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<sup>1</sup> Mapping Service Center

<sup>2</sup> National Flood Hazard Layer

| SID #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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   | <p>The minimum datasets associated with the Flood Risk Project are defined as follows:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>The minimum datasets associated with the Flood Risk Project are defined as follows:</p> |                                                       |                                        |                                        |                            |  |          |          |                    |                                |                       |     |                               |                       |     |                   |                       |     |                                                      |                       |     |                       |                                                       |                              |                                     |          |          |                       |  |          |         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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <table border="1"> <thead> <tr> <th colspan="2">Non-Regulatory Product/Dataset</th> <th>New Flood Hazard Analysis Conducted</th> <th>No New Flood Hazard Analysis Conducted</th> </tr> </thead> <tbody> <tr> <td colspan="2"><b>Flood Risk Database</b></td> <td>Required</td> <td>Required</td> </tr> <tr> <td rowspan="6">Flood Risk Dataset</td> <td>Changes Since Last FIRM (CSLF)</td> <td>Required<sup>1</sup></td> <td>N/A</td> </tr> <tr> <td>Water Surface Elevation Grids</td> <td>Required<sup>2</sup></td> <td>N/A</td> </tr> <tr> <td>Flood Depth Grids</td> <td>Required<sup>2</sup></td> <td>N/A</td> </tr> <tr> <td>Percent Annual Chance &amp; Percent 30-year Chance Grids</td> <td>Required<sup>3</sup></td> <td>N/A</td> </tr> <tr> <td>Flood Risk Assessment</td> <td>Required (AAL<sup>4</sup> and Refined<sup>5</sup>)</td> <td>Required (AAL<sup>4</sup>)</td> </tr> <tr> <td>Areas of Mitigation Interest (AoMI)</td> <td>Required</td> <td>Required</td> </tr> <tr> <td colspan="2"><b>Flood Risk Map</b></td> <td>Required</td> <td>Required</td> </tr> <tr> <td colspan="2"><b>Flood Risk Report</b></td> <td>Required</td> <td>Required</td> </tr> </tbody> </table>                                                           | Non-Regulatory Product/Dataset                                                             |                                                       | New Flood Hazard Analysis Conducted    | No New Flood Hazard Analysis Conducted | <b>Flood Risk Database</b> |  | Required | Required | Flood Risk Dataset | Changes Since Last FIRM (CSLF) | Required <sup>1</sup> | N/A | Water Surface Elevation Grids | Required <sup>2</sup> | N/A | Flood Depth Grids | Required <sup>2</sup> | N/A | Percent Annual Chance & Percent 30-year Chance Grids | Required <sup>3</sup> | N/A | Flood Risk Assessment | Required (AAL <sup>4</sup> and Refined <sup>5</sup> ) | Required (AAL <sup>4</sup> ) | Areas of Mitigation Interest (AoMI) | Required | Required | <b>Flood Risk Map</b> |  | Required | Required | <b>Flood Risk Report</b> |  | Required | Required | <table border="1"> <thead> <tr> <th colspan="2">Flood Risk Product/Dataset</th> <th>New Flood Hazard Analysis<sup>1</sup> Conducted</th> <th>No New Flood Hazard Analysis<sup>1</sup> Conducted</th> </tr> </thead> <tbody> <tr> <td colspan="2"><b>Flood Risk Database</b></td> <td>Required</td> <td>Required</td> </tr> <tr> <td rowspan="6">Flood Risk Dataset</td> <td>Changes Since Last FIRM (CSLF)</td> <td>Required<sup>2</sup></td> <td>N/A</td> </tr> <tr> <td>Water Surface Elevation Grids</td> <td>Required<sup>3</sup></td> <td>Optional<sup>4</sup></td> </tr> <tr> <td>Flood Depth Grids</td> <td>Required<sup>3</sup></td> <td>Optional<sup>4</sup></td> </tr> <tr> <td>Percent Annual Chance &amp; 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| <b>Flood Risk Map</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| <b>Flood Risk Report</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Flood Risk Product/Dataset                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | New Flood Hazard Analysis <sup>1</sup> Conducted                                           | No New Flood Hazard Analysis <sup>1</sup> Conducted   |                                        |                                        |                            |  |          |          |                    |                                |                       |     |                               |                       |     |                   |                       |     |                                                      |                       |     |                       |                                                       |                              |                                     |          |          |                       |  |          |         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| <b>Flood Risk Database</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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| Flood Risk Dataset                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Changes Since Last FIRM (CSLF)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Required <sup>2</sup>                                                                      | N/A                                                   |                                        |                                        |                            |  |          |          |                    |                                |                       |     |                               |                       |     |                   |                       |     |                                                      |                       |     |                       |                                                       |                              |                                     |          |          |                       |  |          |         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   | Water Surface Elevation Grids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Required <sup>3</sup>                                                                      | Optional <sup>4</sup>                                 |                                        |                                        |                            |  |          |          |                    |                                |                       |     |                               |                       |     |                   |                       |     |                                                      |                       |     |                       |                                                       |                              |                                     |          |          |                       |  |          |         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   | Flood Depth Grids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Required <sup>3</sup>                                                                      | Optional <sup>4</sup>                                 |                                        |                                        |                            |  |          |          |                    |                                |                       |     |                               |                       |     |                   |                       |     |                                                      |                       |     |                       |                                                       |                              |                                     |          |          |                       |  |          |         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   | Percent Annual Chance & Percent 30-year Chance Grids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Required <sup>5</sup>                                                                      | Optional <sup>4</sup>                                 |                                        |                                        |                            |  |          |          |                    |                                |                       |     |                               |                       |     |                   |                       |     |                                                      |                       |     |                       |                                                       |                              |                                     |          |          |                       |  |          |         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   | Flood Risk Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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   | Areas of Mitigation Interest (AoMI)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| <b>Flood Risk Map</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| <b>Flood Risk Report</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| <p><sup>1</sup> CSLF is optional in areas where digital modernized floodplain boundaries are not available for the effective FIRM</p> <p><sup>2</sup> Riverine studies: 10%, 4%, 2%, 1%, "1%+", and 0.2% annual-chance floods;<br/>Coastal studies: only the 1% annual chance flood;<br/>Levee studies: Riverward/Seaward side - same as Riverine or Coastal,<br/>Landward side - only the scenario(s) used to delineate SFHA boundary</p> <p><sup>3</sup> Riverine only</p> <p><sup>4</sup> AAL data only from the FEMA 2010 AAL Study;<br/>Both riverine and coastal areas will have 10%, 2%, 1%, 0.5%, and 0.2% annual-chance floods, and Annualized;</p> <p><sup>5</sup> Analysis can be conducted at census block or user-defined facility level.<br/>Riverine studies: 10%, 4%, 2%, 1%, and 0.2% annual-chance floods, and Annualized;<br/>Coastal studies: only the 1% annual chance flood;<br/>Levee studies: Riverward/Seaward side - same as Riverine or Coastal,<br/>Landward side - only based on the landward depth grid</p> | <p><sup>1</sup> "New Flood Hazard Analysis" = flooding sources receiving regulatory-level analyses</p> <p><sup>2</sup> CSLF is optional in areas where digital modernized floodplain boundaries are not available for the effective FIRM.</p> <p><sup>3</sup> Riverine studies: 10%, 4%, 2%, 1%, "1%+", and 0.2% annual-chance floods<br/>Coastal studies: only the 1% annual chance flood<br/>Levee studies: Riverward/Seaward side - same as Riverine or Coastal<br/>Landward side - only the scenario(s) used to delineate SFHA boundary</p> <p><sup>4</sup> Can be produced for flooding sources not receiving new analyses if based on effective data</p> <p><sup>5</sup> Riverine only</p> <p><sup>6</sup> Riverine studies: 10%, 4%, 2%, 1%, and 0.2% annual-chance floods, and Annualized<br/>Coastal studies: only the 1% annual chance flood<br/>Levee studies: Riverward/Seaward side - same as Riverine or Coastal<br/>Landward side - only based on the landward depth grid</p> <p><sup>7</sup> Assessments are performed for the flood events with available depth grids. See Flood Risk Database Technical Reference for more information.</p> <p><sup>8</sup> Analysis can be conducted at census block or user-defined facility level.</p> |                                                                                            |                                                       |                                        |                                        |                            |  |          |          |                    |                                |                       |     |                               |                       |     |                   |                       |     |                                                      |                       |     |                       |                                                       |                              |                                     |          |          |                       |  |          |          |                          |  |          |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |  |                                                  |                                                     |                            |  |          |          |                    |                                |                       |     |                               |                       |                       |                   |                       |                       |                                                      |                       |                       |                       |                         |                         |                                     |          |          |                       |  |          |          |                          |  |          |          |

| SID # | Original Standard                                                                                                                                                    | Revised/New Standard                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 438   | Hazus 2.1 shall be the source for Census block boundaries within the FRD <sup>3</sup> .                                                                              | Standard rescinded.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 507   | The FIRM, Flood Profiles and Floodway Data Tables must all be in agreement with each other as it relates to the depiction of flood hazards and hydraulic structures. | The FIRM, FIRM database, NFHL, Flood Profiles and Floodway Data Tables must all be in agreement with each other, including decimal point precision, as it relates to the depiction of flood hazards and hydraulic structures.                                                                                                                                                                                                                                     |
| 620   | N/A                                                                                                                                                                  | Before commencing the analysis and mapping activities that take place during the Data and Product Development Phase of a flood risk study, FEMA shall provide a written notification to community Chief Executive Officers and Floodplain Administrators that explains the selected modeling, explains why the selected modeling is appropriate, and provides a 30-day period for communities to consult on the appropriateness of the modeling.                  |
| 621   | N/A                                                                                                                                                                  | Prior to completion of Quality Review 1, FEMA shall transmit a copy of the draft FIRM database and other contributing data as requested to the affected community Chief Executive Officers and Floodplain Administrators, provide a 30-day period during which the affected communities may provide data to FEMA that can be used to supplement or modify the existing data, and incorporate any data that are consistent with prevailing engineering principles. |
| 622   | N/A                                                                                                                                                                  | During the Preliminary NFIP Map Release and Due Process phases of the lifecycle for a flood risk study, the Project Team shall work with the FEMA Regional Office of External Affairs, other FEMA staff, community officials, and local radio and television outlets to further educate property owners about flood map revisions and appeals processes.                                                                                                          |

<sup>3</sup> Flood Risk Database

**Technical Changes**

| SID # | Original Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Revised/New Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 57    | <p>The regulatory and non-regulatory flood risk products must be based on Hydrologic and Hydraulic (H&amp;H) or coastal analyses using existing ground conditions in the watershed and floodplain. The multiple profile and floodway runs must have the same physical characteristics in common for existing ground conditions. However, a community may choose to include flood hazard information that is based on future conditions on a FIRM (shown as shaded Zone X); in an Flood Insurance Study (FIS) Report; or non-regulatory products in addition to the existing-conditions.</p> | <p>The regulatory products and non-regulatory flood risk products must be based on H&amp;H or coastal analyses using existing ground conditions in the watershed and floodplain. The multiple profile and floodway runs must have the same physical characteristics in common for existing ground conditions.</p> <p>However, a community may choose to include flood hazard information that is based on future conditions on a FIRM (shown as shaded Zone X); in an FIS Report; or non-regulatory flood risk products in addition to the existing-conditions.</p>                  |
| 180   | <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>                                              | <p>All regulatory product deliverables, non-regulatory flood risk product 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> |
| 181   | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                         | <p>A metadata file in XML format must be submitted that complies with the Metadata Profiles Technical Reference for each applicable task for regulatory product deliverables, non-regulatory flood risk product deliverables, or relevant supporting data submittals.</p>                                                                                                                                                                                                                                                                                                            |
| 423   | <p>All fields in the Flood Risk Database Technical Reference must be populated unless marked as [E]nhanced.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>Standard rescinded.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| SID # | Original Standard                                                                                                                                                                                                                                                                                                                                                                                                                                       | Revised/New Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 425   | The National Flood Hazard Layer (or other comparable dataset with all effective FIRMs and Letter of Map Revisions (LOMR)s incorporated) shall be the source for the effective flood hazard area data for non-regulatory products.                                                                                                                                                                                                                       | The National Flood Hazard Layer (or other comparable dataset with all effective FIRMs and LOMRs incorporated) shall be the source for the effective flood hazard area data used to develop non-regulatory flood risk products.                                                                                                                                                                                                                                             |
| 429   | <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> | <p>The following non-regulatory flood risk product 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> |
| 431   | For Flood Risk Product SHP and DBF file formats, domain-based fields shall contain the actual descriptive values, not the numeric or alphanumeric coded value.                                                                                                                                                                                                                                                                                          | Standard rescinded.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 433   | Non-regulatory datasets must be delivered within the Flood Risk Database and must not be tiled or subdivided.                                                                                                                                                                                                                                                                                                                                           | Non-regulatory flood risk datasets must be delivered within the Flood Risk Database and must not be tiled or subdivided.                                                                                                                                                                                                                                                                                                                                                   |
| 441   | Text in the FRR_Custom and FRR_Project tables must be stored as an Office Open XML 2.0 compliant markup fragment containing only text and styles.                                                                                                                                                                                                                                                                                                       | Standard rescinded.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Several comments were received during the comment period. The comments and FEMA's response are listed by their SID numbers below:

### SID 43

1. **Public Comment Received:** "We frequently submit locally funded floodplain studies to the Physical Map Revision (PMR) process. If new topographic data becomes available in the interim, is the study automatically voided?"

**Response:** The standard was updated to specify the timeframe during which the data must be available.

2. **Public Comment Received:** "I'm writing to you on behalf of the Board of Directors and state members of the National States Geographic Information Council. We strongly support the language change proposed by FEMA in Standard Identification Number 43 of the Informational Summary for Risk MAP Guidelines and Standards Maintenance Announcement (Spring 2016).

High resolution and authoritative elevation data are critical for flood mapping. Undertaking the production of Flood Insurance Rate Maps using outdated elevation data will lead to unreliable maps that are subject to legal challenges. They will also undermine government efforts to adequately protect the public's safety and welfare.

Therefore, we support FEMA's additional language for this standard which states "If data is not available that meets these requirements, new elevation [data] must be obtained."

**Response:** No Response Required

3. **Public Comment Received:** "Association of State Floodplain Managers (ASFPM) has long supported the notion that accurate flood maps are critical and underpinning those maps has to be good topographic data. In fact, in our report Flood Mapping for the Nation, is based on the following assumption: "Up to date detailed elevation data (LIDAR or other topographic maps) are needed anywhere flood mapping and data are to be generated." However, we want to ensure that if a state or community has data that actually meets these requirements, then they can use it. Too often mapping project budgets or metrics end up resulting in some of this topo data not being used in FIRM and FIS updates. For example, Hennepin County, Minnesota will have new countywide flood maps coming out in the next few months. Even though the Preliminary maps were produced nearly 10 years ago and accurate LIDAR data was produced 5 years ago (after the project was scoped but not so late that the data couldn't be incorporated onto the new maps) these new FIRMs will not be using the best available topographic data which has a significant impact overall on the credibility of the flood mapping program.

Secondly, ASFPM recommends that this standard does not delay the modernization of the rest of the unmodernized flood mapping inventory. In other words, an overall program priority must be to modernize the mapping inventory and if those areas need accurate topo FEMA should ensure that the resources are available to both develop the elevation data and modernize those areas. We do not want to see the standard 43 being used as an excuse to not modernize flood mapping for an area."

**Response:** The final version of the standard specifies the timeframe when the data must be available.

Because the flood risk study process spans several years, every project requires trade-offs between completing the project using the information available versus waiting for new information or redoing completed work to incorporate. FEMA relies on careful coordination with

state and local stakeholders during the Discovery phase of a project to minimize these issues. New data that becomes available later in a project must be handled on a case-by-case basis.

The standard is not intended to determine whether or not unmodernized maps are updated. This standard sets uniform requirements for all projects.

#### SID 57

1. **Public Comment Received:** “When communities develop future conditions flood hazard data, the associated floodway should also be delineated. Otherwise the community could allow development in a future high risk area. We are adopting a policy of mapping the existing condition SFHA, the future condition floodway (with below threshold surcharges) and the future condition 1% chance floodplain (as a shaded Zone X). Provided of course the future conditions floodway fits within the Special Flood Hazard Area (SFHA). Thus when the future condition is realized the floodway will have the appropriate surcharge.”

**Response:** The update to standard 57 did not change FEMA's requirements related to mapping existing conditions, or the community option to include future conditions information, or the communities ability to define an administrative floodway that exceeds the minimum NFIP requirements (see Standard 69 and regulations at 44 CFR 60.3).

#### SID 507

1. **Public Comment Received:** “It is understood that the FIRM DB should match the FIRM and FIS; but in order to make that happen in some instances the mapping partner cannot stay true to the model data. In cases where we are instructed to eliminate, truncate or round model input and output data to satisfy database and cartographic standards, the H&H Mapping Information Platform (MIP) submittal will not match the FIRM DB or profiles. This is a concern that we are losing vital engineering information from the model in order to represent the floodplain data cartographically. It may be difficult for a professional engineer to certify the floodplain map if it does not adequately reflect the model output. Changing the cross section shapes also makes it much harder to recreate and revise a hydraulic model for LOMR or other purposes.”

**Response:** Standard 507 was updated to better align all regulatory products, including the FIRM database and NFHL. Previously, the FIRM database or NFHL were not included in the standard. This update will not impact any vital engineering or model information as it will not affect those submission. FEMA has added information to the Hydraulics Guidance to make it clear that the FIRM Database precision alignment with other products does not apply to the hydraulics submittal. Standard 507 does not promote the changing of cross section shapes in any way.

#### SID 620

1. **Public Comment Received:** “Will the written notification to the community by the Project Team be used to verify compliance? What will be the requirement of the community to respond?”

**Response:** The only requirement on a response is if the community has comments on the model(s) that will be used. FEMA is providing the community with an opportunity to comment on the models, not requiring the community to comment. However, the Project Team should follow up to ensure that the community has received the notification and determine whether the community has or plans to respond before the 30-day review period elapses.

2. **Public Comment Received:** “We concur with the new standard. The FEMA/community partnership should be robust enough that this mandatory task can be completed in parallel with other activities. A month here and there can add significant time to the mapping project.”

**Response:** This requirement is not intended to add time to a flood risk project; rather it is intended to enhance and increase community engagement throughout the lifecycle of a flood risk project. Continuous community coordination is intended to remove the potential of any "surprises" down the road. By having the community invested early on keeps the open line of communication with FEMA strong. In addition mapping partners can continue working on the project so there is not a complete standstill in the process.

3. **Public Comment Received:** “The proposed new standard 620 requires a written notification and explanation of the selected models and provides a 30-day period for communities to consult on the appropriateness of the models. This seems to be an extension of the existing requirement to do so during the Discovery process/study initiation and seems to be duplicative. Also it is not clear if a new comment period would be required if the engineer later determines that he selected model is not the best model for the situation (such as requiring a small segment of a 2D model to better model the flood conditions).”

**Response:** The Discovery process is intended to gather available data and information and to open/re-open communications with community officials and other stakeholders in the watershed or project area. In most instances, the model(s) to be used for processing a flood risk project do not get defined during the Discovery process. This notification will typically occur after the Discovery process is already complete, although it may take place near the end of Discovery as well.

Close and timely coordination with the community should a model change be necessary will likely make the additional review period unnecessary. However, decisions will be made by the FEMA Project Officer for each project if an additional review period is necessary to ensure agreement, recognizing that there will be additional opportunities for the community to review and comment throughout the project lifecycle.

## SID 621

1. **Public Comment Received:** “We agree that sharing initial data with the community is a good practice. Again the community engagement should be at a level that there’s no large surprises.”

**Response:** This requirement also is not intended to add time to a flood risk project; rather it is intended to enhance and increase community engagement throughout the lifecycle of a flood risk project. Continuous community coordination is intended to minimize "surprises" for the community and the Project Team. In addition mapping partners can continue working on the project so there is not a complete standstill in the process.

2. **Public Comment Received:** “The proposed new standard 621 appears to provide a similar 30-day comment period after the engineering studies are complete; however, the wording of the recommendation is overly confusing. The inclusion of the ‘Independent Data Submission’ terminology—which is not currently a term used in the flood mapping process but is taken directly from the legislation— should not be used in the standard. Coastal flood studies use a similar terminology (Intermediate Data Submission) for established data submissions in a coastal study. Initially this standard appears to be an extension of the proposed new standard 620 for the selection of models used in coastal studies. Assuming this is intended to be an additional comment period after the engineering studies are complete, FEMA should word the standard using terminology commonly used in the flood mapping program. For example, this appears to be referring to the flood study review process that was common prior to Risk MAP and FEMA’s desire to direct the conversations away from the location of the flood hazard delineations (line on the map) to a discussion of flood risk. If the desire is to go back to the flood study review process, then providing terminology that is clear to the intent of the standard such as review of engineering studies/models and workmaps should be used.”

**Response:** FEMA has revised the language in the Standard to provide clarity on what data will be transmitted to the community for review.

3. **Public Comment Received:** “This new standard is too vague to be properly implemented. The term "Independent Data Submission" is not defined in the draft changes, nor in the Standards for Flood Risk Analysis and Mapping policy (revised November 30, 2015). In order to fully comprehend the impacts this new standard will have on local and regional agencies, the standard needs to be further defined. The City of Westminster requests the "Independent Data Submissions" be more clearly defined in the new standard, and stakeholders have the ability to comment on that definition.”

**Response:** FEMA has revised the language in the Standard to provide clarity on what data will be transmitted to the community for review.

#### SID 620/621

1. **Public Comment Received:** “ASFPM encourages input and collaboration between all mapping stakeholders and understands FEMA’s desire to adhere to the HFIAA legislation to provide communities with additional opportunities for review during the flood mapping process. There is an inherent value to sharing project data during data development and prior to preliminary issuance. Draft or provisional data (data that has not gone through FEMA review) is shared by the various mapping partners and regions when the requestor understands the provisional nature of the data and that the data is subject to change and revision. This sharing of data is commonly heavily caveated to the intended user (such as when provisional study data is provided for an upcoming LOMR). There is a concern that developing standards that require sharing draft or provisional data without some explanation to the end user would introduce additional risk to the mapping partner and a misunderstanding of the provisional nature of the data could impact the technical credibility of the final flood maps.

While transparency in the flood study process is beneficial to the mapping partners, communities, stakeholders and FEMA there is a concern that the vagueness of the language in the new 620 and 621 standards could be used to indefinitely delay the flood mapping process. The addition of two new comment periods also opens up mapping partners to additional costs that were not included in the MAS or original project budget. There is also a question if this applies to studies FEMA has funded, or if it would it be applied to locally funded studies and LOMRs. In addition, standards should be written in a way that is understandable by mapping partners.”

**Response:** FEMA is preparing templated material to assist Project Teams with administering the reviews required by the legislation. FEMA recognizes that these additional reviews could delay schedules for some flood risk projects. However, FEMA also believes that these review cycles, if implemented properly, could result in fewer delays later in the process caused by missed or misunderstood communications.

FEMA is very aware of the possible financial impacts of the new requirements and will work with their State and local partners and their providers to address budgetary and contractual issues on a project-by-project basis. Decisions concerning which projects will be affected have not yet been made, and any concerns that are raised by FEMA's State and local partners and providers concerning implementation will be addressed appropriately prior to implementation. Initially, these standards will only apply to new contracts and agreements, not work already covered by a Mapping Activity Statement.

FEMA Regional Office and Headquarters staff will work their partners and providers to ensure that the standard is understood and applied appropriately to designated projects.

## SID 622

1. **Public Comment Received:** "We do not understand the requirement to work with local radio and television outlets to educate property owners. What stations, what message, who pays for the media coverage? Is the entire list mandatory or is it a list of possible outreach vehicles? How is this standard coordinated with the Community Engagement and Risk Communication (CERC) contractors?"

**Response:** FEMA is preparing templated material (Public Service Announcement Scripts, TV Producer email scripts, Press Releases, and other Guidance Material) that will support the implementation of this new requirement. The FEMA Project Officer for each flood risk project in the regional office will need to coordinate with State and local partners as well as the Community Engagement and Risk Communication and the Production and Technical Services providers to determine the best approach for addressing this standard. FEMA's policy is still not to pay for advertising. The intent of the standard is to work more closely with the outlets and provide more information proactively to get public service announcements, etc.

2. **Public Comment Received:** "This new standard will potentially be a financial and staffing burden on local and regional agencies. Requiring the Project Team to work with "local radio and television outlets" to educate property owners on flood map revisions is excessive and will not provide valuable outreach for the property owners. The City of Westminster is strongly supportive of education and outreach to the community regarding flood risks and map revisions; however, local jurisdictions have a better sense of the messaging method that suits the needs of its community. Notifications for map revisions will only affect a few property owners, not the entire community. The City has experienced positive results from notifying specific residents on map revisions, and giving them accurate contact information to provide answers to any questions. Revising maps to a regulated floodplain is a complex process. It is more beneficial for all stakeholders to allow affected property owners to provide questions that fit their specific needs, rather than a blanket community notification."

**Response:** While FEMA encourages any locally initiated individual outreach, this standard is tied to the Reform Legislation which states : "educating property owners about flood map revisions and the process available to such owners to appeal proposed changes in flood elevations through their community, including by notifying local radio and television stations;"

FEMA is preparing templated material (Public Service Announcement Scripts, TV Producer email scripts, Press Releases, and other Guidance Material) that will support the implementation of this new requirement. The FEMA Project Officer for each flood risk project in the regional office will need to coordinate with State and local partners - especially communities - as well as the Community Engagement and Risk Communication and the Production and Technical Services providers to determine the best approach for addressing this standard. FEMA's policy is still not to pay for advertising. The intent of the standard is to work more closely with the outlets and provide more information proactively to get public service announcements, etc. The templated materials would be a starting point for communication. Where communities can achieve the intended results using additional means, those would of course be prioritized.

Flood risks are always changing and have an impact on your community. Getting all stakeholders to understand these risks to increase flood risk awareness and reduce the risk to life and property from flooding.

- Public Comment Received:** "This new standard is too vague to be properly implemented. The term "Independent Data Submission" is not defined in the draft changes, nor in the Standards for Flood Risk Analysis and Mapping policy (revised November 30, 2015). In order to fully comprehend the impacts this new standard will have on local and regional agencies, the standard needs to be further defined. The City of Westminster requests the "Independent Data Submissions" be more clearly defined in the new standard, and stakeholders have the ability to comment on that definition."

**Response:** FEMA has revised the language in the Standard to provide clarity on what data will be transmitted to the community for review.

### SID 623

- Public Comment Received:** "This will be helpful. Will Conditional Letter of Map Revision (CLOMR) results be added to the MIP as well? "

**Response:** The new standard related to MT1 determinations will not be included in this update. FEMA will publish a new guidance document on MT1 determinations this spring and continue to assess the need for additional standards related to MT1 determinations. None of these changes affect what is currently captured on the MIP. CLOMRs are stored on the MIP, but are not accessible to the public through the Map Service Center.

### General Comments

- Public Comment Received:** "Is there anyway you could make the new announcement easier to understand? The terms are not familiar to many people who are required to purchase flood insurance. With that said, I would be surprised if you receive too many comments regarding the changes. I will have to look up all of the terms used in the hydrology and basically the whole plan. Is there a way to understand this if you are not part of the professional group that writes it?"

**Response:** Flood risk analysis and mapping is a complex process requiring expertise across several disciplines. The Standards for Flood Risk Analysis and mapping are written for implementation by FEMA and professionals with appropriate expertise. The public review process for the standards is intended to provide as much transparency as possible, but the review is targeted to stakeholders with expertise in flood hazard mapping and related fields, not the general public.

FEMA does publish information on flood mapping targeted to a general audience. A good place to start is the brochure on "Why We Map Floods" which has basic background information and links to additional resources.

[www.fema.gov/media-library/assets/documents/14418](http://www.fema.gov/media-library/assets/documents/14418)

2. **Public Comment Received:** "The Informational Summary discusses non-structural flood mitigation features, however our review of the proposed changes did not identify any guidelines or standards that address non-structural elements."

**Response:** Changes related to non-structural flood mitigation features were implemented through guidance. No changes were made to standards.