



FEMA

Appeals and Protests

Supporting Data and Documentation

INTRODUCTION

Any individual property owner can **appeal** proposed base flood elevations (BFEs) or **protest** other information included on the preliminary digital flood maps, also known as the Digital Flood Insurance Rate Maps or DFIRMs. Both the appeal and protest must be supported by technical or scientific data and submitted to the appropriate community official within the designated “90-day appeal period.” (See “Appeals and Protests: Information for Community Officials” for more details on the process.)

The following provides guidance on developing the technical and/or scientific data for an appeal or a protest.

I. APPEALS

The BFEs shown on the preliminary flood maps are determined by experienced mapping experts using the latest engineering methods and computer models. The results are based on professional judgment of the mapping engineers, the amount of data collected and the precision of measurements made.

For that reason, an appeal must be based on data and documentation showing that the proposed BFEs shown on the preliminary maps and/or in a Flood Insurance Study* (FIS) report are scientifically or technically incorrect. Appellants need to demonstrate that better methodologies, assumptions or data exists and provide alternative analyses that incorporate those methodologies, assumptions, or data. The results must show an overall change in the BFEs. (See General Technical Guidance section at the end of this document.)

Only the new detailed studies provided by FEMA are eligible to be appealed. Redelineated BFEs do not qualify.

FEMA will review the alternative analyses and determine if they are superior to those used for the mapping project.

* The Flood Insurance Study report is the official report provided by the Federal Insurance Administration that includes flood profiles, the new maps, and the base flood elevations.



A. Scientifically Incorrect Elevations

The BFEs are said to be **scientifically incorrect** if the methodology/model(s) used to determine the BFEs is inappropriate or incorrect, or if the assumptions made as part of using the methodology/model(s) are inappropriate or incorrect.

- An appeal based on the BFEs being scientifically incorrect must prove that the use of different methodology/model(s) or assumptions would produce more accurate BFEs than those shown in the preliminary maps and FIS report.
- To show that an inappropriate or incorrect hydrologic or hydraulic methodology has been used, an appellant must submit the following data:
 - New hydrologic analysis based on the alternative methodology/model and a new hydraulic analysis using the results of the new hydrologic analysis
 - New hydraulic analysis based on the alternative methodology/model and the flood discharge values used in the hydraulic analysis performed by FEMA
 - Explanation for the superiority of the alternative methodology/model
 - Revised flood profiles for the FIS report
 - Revised 1-percent-annual-chance (100-year) floodplain boundary delineations
 - Revised 0.2-percent-annual-chance (500-year) floodplain boundary delineations (if such boundaries are shown on the preliminary maps for the flooding source in question)
 - Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the study/mapping project)

NOTE: All analysis and mapping must use the same datum as the preliminary data. In addition, the revised floodplain and regulatory floodway boundaries must be shown on a topographic map whose scale and contour interval are sufficient to provide reasonable accuracy and whose topo is at least as good as that used to produce the preliminary maps.

B. Technically Incorrect Elevations

The BFEs are said to be **technically incorrect** if at least one of the following is true:

- Methodology/model was not applied correctly
- Methodology/model was based on insufficient or poor-quality data
- Application of the methodology/model included indisputable mathematical or measurement errors



- Methodology/model did not account for the effects of physical changes that have occurred in the floodplain

1. Appeals Based on Contention That Methodology Has Not Been Applied Correctly

To show that a **hydrologic** methodology was not applied correctly, an appellant must submit the following:

- New hydrologic analysis in which the original methodology has been applied differently
- Explanation for the superiority of the new application
- New hydraulic analysis based on the flood discharge values
- Revised flood profiles for the FIS report
- Revised 1-percent-annual-chance floodplain boundary delineations
- Revised 0.2-percent-annual-chance floodplain boundary delineations (if such boundaries are shown on the preliminary maps for the flooding source in question)
- Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the flooding source in question)

To show that a **hydraulic** methodology was not applied correctly, an appellant must submit the following:

- New hydraulic analysis, based on the flood discharge values used by FEMA, in which FEMA's methodology has been applied differently
- Revised flood profiles for the FIS report
- Revised 1-percent-annual-chance floodplain boundary delineations
- Revised 0.2-percent-annual-chance floodplain boundary delineations (if such boundaries are shown on the preliminary maps for the flooding source in question)
- Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the flooding source in question)

NOTE: All analysis and mapping must use the same datum as the preliminary data. In addition, the revised floodplain and regulatory floodway boundaries must be shown on a topographic map whose scale and contour interval are sufficient to provide reasonable accuracy and whose topo is at least as good as that used to produce the preliminary maps.



2. Appeals Based on Contention That Insufficient or Poor-Quality Data Were Used

To show that insufficient or poor-quality hydrologic data were used, an appellant must submit the following:

- Data believed to be better than those used by FEMA in the hydrologic analysis
- Documentation for the source of the new data
- Explanation for the improvement resulting from the use of the new data
- New hydrologic analysis based on new data
- New hydraulic analysis based on the flood discharge values resulting from the new hydrologic analysis
- Revised flood profiles for the FIS report
- Revised 1-percent-annual-chance floodplain boundary delineations
- Revised 0.2-percent-annual-chance floodplain boundary delineations (if such boundaries are shown on the preliminary maps for the flooding source in question)
- Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the flooding source in question)

NOTE: All analysis and mapping must use the same datum as the preliminary data. In addition, the revised floodplain and regulatory floodway boundaries must be shown on a topographic map whose scale and contour interval are sufficient to provide reasonable accuracy and whose topo is at least as good as that used to produce the preliminary maps.

3. Appeals Based on Contention That Analysis Contains Indisputable Errors

To show that a mathematical or measurement error was made, an appellant must identify the error:

- Calculations provided to FEMA must demonstrate an overall change in the BFEs
- Appellants must identify the error and provide the correct measurement to show that a measurement error was made (example: an incorrect surveyed elevation)
- New survey data must be certified by a Registered Professional Engineer or Licensed Land Surveyor and must use the same datum as the preliminary data

If an error has been made that affects the overall BFEs, FEMA will perform any required calculations and make necessary changes to the affected map panel(s) and/or the affected FIS report materials (i.e., flood profiles, data tables).



4. Appeals Based on Effects of Physical Changes That Have Occurred in Floodplain

For appeals based on the effects of physical changes that have occurred in the 1-percent-annual-chance floodplain, appellants must identify the changes that have occurred and provide the data FEMA needs to perform a revised analysis. The data may include topographic maps, grading plans, new stream channel and floodplain cross sections, and dimensions of structures. Again, the same datum as the preliminary data must be used and the results must demonstrate an overall change in the BFEs.

Certification Requirements for Support Data and Documentation for Appeals

All maps and other support data submitted must be certified by a Registered Professional Engineer or a Licensed Land Surveyor and must reflect existing conditions. Maps prepared by an authoritative source, such as a Federal agency—the U.S. Army Corps of Engineers (USACE), U.S. Geological Survey (USGS), U.S. Bureau of Reclamation (USBR)—or a state department of highways or transportation, are acceptable without certification as long as the sources and dates of the maps are identified.

II. PROTESTS

Protests generally involve changes to items such as floodplain boundary delineations, corporate limits and/or road names and configurations. The various types of protests and the data and documentation that must be submitted to support them are discussed below.

A. Changes to Floodplain Boundaries for Flooding Sources Studied by Detailed Methods

The detailed floodplain boundaries were delineated using topographic maps and the BFEs resulting from the hydraulic analysis performed by FEMA. If topographic maps or other ground elevation data with greater detail or that show more recent topographic conditions are submitted in support of a protest, FEMA will use the submitted maps and/or data to revise the floodplain boundary delineations shown on the affected map panel(s). Any delineations must be submitted with more detailed or revised topographic information. In addition, all data must be based on the preliminary map datum.

B. Changes to Floodplain Boundaries for Flooding Sources Studied by Approximate Methods

Approximate floodplain boundaries are delineated with the best available data, including flood maps published by other Federal agencies, information on past floods, and simplified and hydraulic analyses. If more detailed data or analyses are submitted in support of a protest, FEMA will use the submitted data or analyses to revise the floodplain boundary delineations shown on the affected map panel(s). Such data and analyses would include the following:

- Published flood maps that are more recent or more detailed than those used by FEMA
- Analyses that are more detailed or that are based on better data than those used by FEMA



NOTE: While more detailed data or analysis may be submitted to support a protest to floodplain delineations, detailed studies to establish BFEs must be submitted through the Letter of Map Revision process.

C. Changes to Corporate Limits

The corporate limits shown on the preliminary flood maps were taken from community maps obtained by FEMA from local community officials. If changes to the corporate limits shown on the preliminary maps are necessary, a community must submit an up-to-date community map to support their protest. FEMA may use the submitted map to revise the corporate limits shown on the affected map panel(s) or will explain to local officials, in writing, why no changes could be made.

D. Changes to Road Names and Configurations

On the preliminary maps, FEMA has shown all roads that are in or adjacent to the 1-percent-annual-chance floodplain. Community officials must provide a map showing the updated information if they choose to submit a protest concerning the locations and names of roads in or adjacent to floodplains.

Certification Requirements for Technical Support Data and Documentation for Protests

All maps and other support data submitted must be certified by a Registered Professional Engineer or Licensed Land Surveyor and must reflect existing conditions. Maps prepared by an authoritative source, such as a Federal agency—that is, the USACE, USGS, or USBR—or a state department of highways or transportation, are acceptable without certification as long as the sources and dates of the maps are identified.

III. General Technical Guidance

When developing technical support data or documentation, appellants should consider the information below.

- Unless appeals are based on indisputable mathematical or measurement errors or the effects of physical changes that have occurred in the floodplain, they must be accompanied by all data that FEMA needs to revise the preliminary flood map panel(s) and FIS report materials. Appellants should be prepared to perform hydrologic and hydraulic analyses, to plot new and/or revised Flood Profiles, and to provide revised floodplain and regulatory floodway boundary delineations as necessary.
- New flooding information cannot be added to a map panel in such a way as to create mismatches with the flooding information shown for adjacent map panels. Therefore, in performing new analyses and hydrologic developing revised flooding information, appellants



must tie the new flood elevations, floodplain boundaries, and regulatory floodway boundaries into those shown on the map panel(s) for areas that are not affected by the appeal or protest.

- For appeals involving new flood discharge values, extensive changes in hydraulic conditions, or complex situations in which changes made to the flooding information developed for one flooding source will affect that developed for others, appellants may be required to provide new information for a large portion of the mapped area.
- All analyses and data submitted must be certified by a Registered Professional Engineer or Licensed Land Surveyor, as appropriate. That includes those that show mathematical or measurement errors. The same datum as the preliminary data must be used.
- Appeals and protests cannot be based on the effects of proposed projects or future conditions.
- If hydrologic or hydraulic analyses are performed, they must be performed for the same recurrence interval floods as those performed by FEMA.
- The extent of the hydrologic and hydraulic analyses that appellants may be required to submit is determined not only by the basis of the appeal, but also by the type of flooding source and the scope of the mapping project. For example, if a hydraulic analysis of the regulatory floodway was performed for a riverine flooding source, an appellant would have to perform a comparable analysis if requesting changes to the regulatory floodway boundaries shown on the map.
- Unless appeals are based on the use of alternative models or methodologies, the hydrologic analyses submitted must be performed using the hydrologic models used by FEMA.
- Unless appeals are based on the use of alternative models or methodologies, the hydraulic analyses submitted must be performed using the hydraulic models used by FEMA.
- Information on the models used for the analysis of the hazards associated with coastal storm surge and wave action, including wave height and wave runup, are documented in Section 3.2 of the FIS report. The ADCIRC, STWAVE, JPM-OS technique, and WHAFIS-1D models were used.
- Appellants may request that FEMA provide them with copies of the input and output data from the model(s) used by FEMA or copies of other calculations or analyses performed by FEMA. The community should submit such requests, in writing, to FEMA at the address shown in the “Where To Send Support Data and Documentation” section of this document.
 - As required by Paragraph 65.6(a)(6) of the NFIP regulations, when appeals are based on the use of an alternative hydrologic or hydraulic model, the appellant must show that several conditions have been met. The model used must have been reviewed and accepted for general use by a federal agency responsible for floodplain identification or regulation or a notable scientific body.



- The model has been well documented (with a user's manual that includes source codes).
- the model must be available to all present and future parties affected by the map that has been developed or amended through the use of the model.
- If appeals or protests involve changing the floodplain boundaries shown on the preliminary map, the appellant will be required to submit delineations of both the 1- and 0.2-percent-annual-chance floodplain boundaries if those delineations are shown on the preliminary map.
- If FEMA included analyses of only the 1-percent-annual-chance flood for the flooding source that is the subject of an appeal/protest, the appellant must submit only the 1-percent-annual-chance floodplain boundary delineations in support of the appeal/protest.

IV. Use of North American Vertical Datum of 1988

The National Geodetic Survey has determined that the national vertical control network needs to be readjusted. Therefore, FEMA has been converting NFIP maps gradually from the old national datum, National Geodetic Vertical Datum of 1929 (NGVD 29), to a new national datum, North American Vertical Datum of 1988 (NAVD 88).

When submitting an appeal or protest, the appellant must use the reference datum on the preliminary maps. For more information on NAVDE, interested parties should reference the following FEMA reference documents:

- FIA-20, *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988, Guidelines for Community Officials, Engineers, and Surveyors.*
- Appendix B, "Guidance for Converting to the North American Vertical Datum of 1988, of *Guidelines and Specifications for Flood Hazard Mapping Partners.*

These documents can be found in the FEMA Information Resources Library, which is located at www.fema.gov/library.

Where to Send Support Data and Documentation

Property owners and other individuals who would like to submit appeals or protests must submit their written request along with the required support data and documentation to the community CEO or other designated community official.

The community CEO or designated community official must submit all appeals and protests along with the required support data discussed above to:



FEMA

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