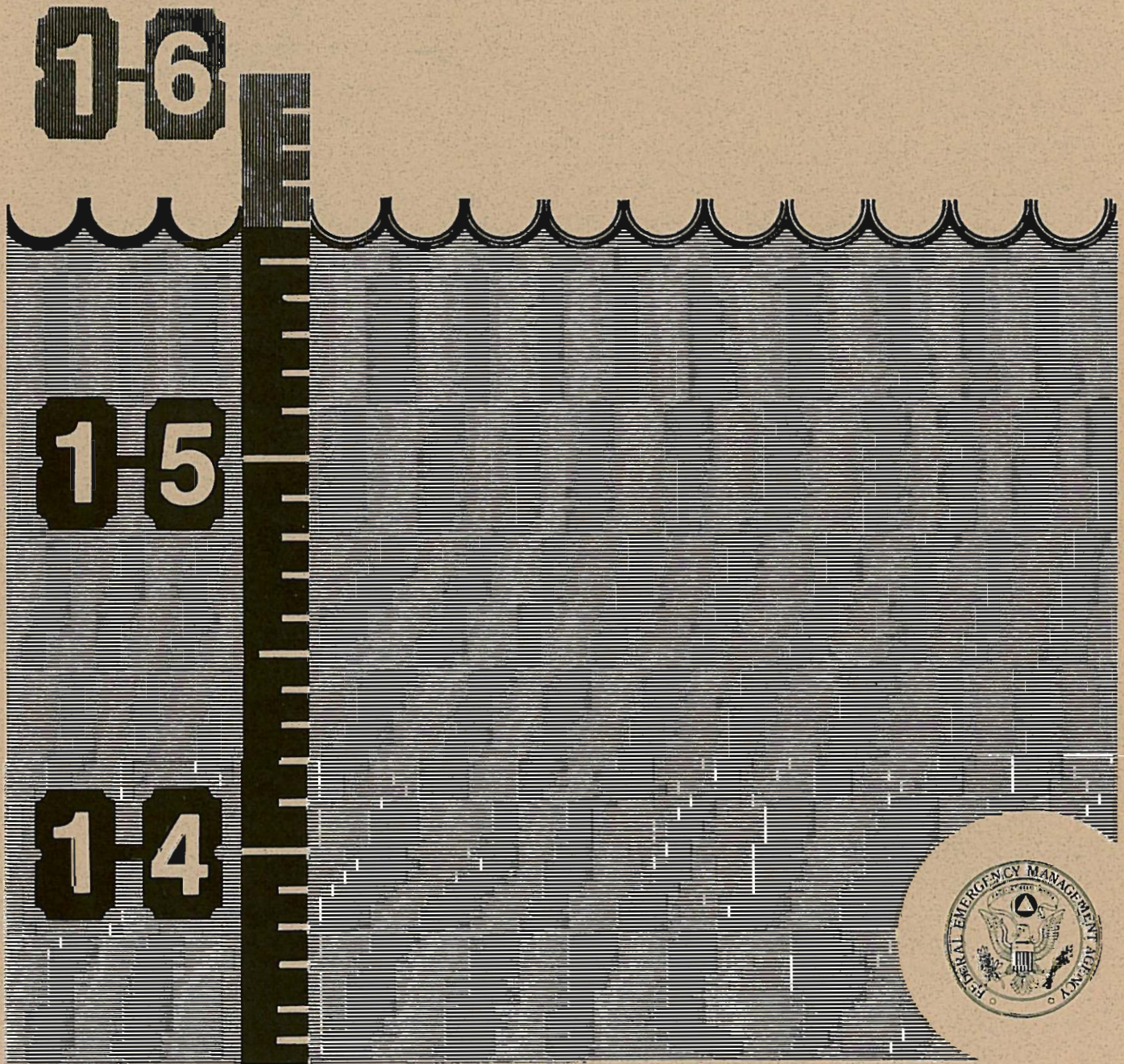


Conditions and Criteria
For Appeals of Proposed
**BASE FLOOD
ELEVATION
DETERMINATION**

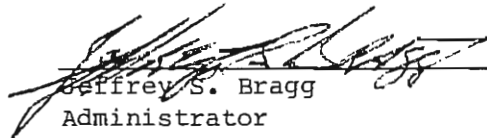


FOREWORD

The National Flood Insurance Program provides flood insurance to residents and property owners in communities that adopt and enforce flood plain management measures to reduce future flood losses. The Program also provides flood hazard identification and risk assessment information to communities on which to base such flood plain management measures. The flood risk information also forms the basis for actuarial premium rates for flood insurance.

Communities are consulted during the development of the flood risk information and are asked to review the results of FEMA's flood insurance study. In addition, communities may appeal FEMA's proposed flood elevation determinations if they submit evidence indicating that such elevations are scientifically or technically incorrect.

These guidelines are intended to inform appellants of FEMA's requirements for appeals and provide descriptions of the data submission requirements which will assist appellants in preparing a complete and well-documented appeal. Compliance with the criteria described herein will allow FEMA to address and resolve the appeal in a timely manner and assure that the most current base flood elevation data is used when the final determination for the community is made.



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CHAPTER 1

General Information

1-1. Purpose. These conditions and criteria provide detailed guidance to appellants regarding the appeals process and the nature of data necessary to modify or change a base flood elevation (BFE) determination proposed by the Federal Emergency Management Agency (FEMA) for a community. In order for FEMA to review and respond accordingly under Title 44 Code of Federal Regulations (CFR), Part 67, Appeals From Proposed Flood Elevation Determinations, an appellant should submit data and documentation to satisfy the criteria set forth in Chapter 2.

Chapter 3 addresses requests for changes in preliminary flood insurance studies and maps which are not related to proposed base flood elevations. It provides guidance on the data requirements to support such requests.

Appeals of established, as opposed to proposed base flood elevations, are described under 44 CFR Part 65. Conditions and criteria for these appeals can be obtained from the address provided in Paragraph 1-5.

1-2. Definitions. The terms used herein have the same meaning as those defined in Part 59.1 of the National Flood Insurance Program regulations at 44 CFR 59 et seq. All appeals received during the 90-day appeal period for preliminary Flood Insurance Studies (FIS's), preliminary map revisions, and Letters of Map Revision (LOMR's) shall be subject to the provisions of 44 CFR Part 67.

1-3. Basis of Appeal. The sole basis of appeal under 44 CFR, Part 67 is the possession of knowledge or information which indicates that the BFE's proposed by FEMA are scientifically or technically incorrect as defined below:

a. Scientifically incorrect means that the methodology or assumptions used by FEMA are inappropriate for the physical processes being evaluated or are in themselves incorrect. This term implies that FEMA's results could be erroneous because a more appropriate or more correct procedure exists which will produce more accurate results.

b. Technically incorrect means that the methodology has been erroneously applied. FEMA's results could be erroneous because of a computational error, measurement error, insufficient quantity or quality of input data, or changes in the physical conditions of the flood plain after completion of the engineering analysis.

1-4. Procedures. The 90-day appeal period for a proposed BFE determination for a community begins on the day of the second publication of the proposed determination in the local newspaper of record. During the following 90-day period, community officials may submit an appeal on behalf of the community, and must submit any appeal(s) received by them from community residents, stating whether or not the community supports the individual appeal(s). It

is important that appeals be submitted in a timely manner during the 90-day period so that necessary adjustments to the processing schedule for the community can be made.

Once the appeal is received and logged by FEMA, a letter acknowledging receipt by FEMA will be sent to the appellant. Periodic contacts will be made with the community, or with whomever the community designates as a contact, for resolving technical issues. When all technical issues have been resolved, a revised preliminary FIS and/or Flood Insurance Rate Map (FIRM) may be prepared, or a new LOMR may be issued, if changes are determined to be justified. Whether or not changes are made, a written response from FEMA to the community Chief Executive Officer (CEO) will be sent which details the issues raised by the appeal. FEMA's response to those issues will be discussed along with reasons for making or not making revisions to the FIS, FIRM, or LOMR. A period of 30 days is provided for the CEO for review and comment on the appeal resolution. No response received by FEMA from the CEO by the thirtieth day is interpreted as an agreement with FEMA's findings.

1-5. Where to File an Appeal. Letters of appeal together with the required technical supporting data should be sent to:

Chief, Risk Studies Division
Federal Insurance Administration
Federal Emergency Management Agency
Washington, DC 20472

Additional information about appeal procedures may be obtained by telephoning FEMA's Washington Office at (202) 287-0230.

CHAPTER 2

Supporting Data for Appeals Related to Proposed Base Flood Elevations

2-1. Requirement to Submit Supporting Data. Section 1363 of the National Flood Insurance Act of 1968, as amended, requires all appeals to be based on the possession of knowledge or information indicating that the elevations being proposed by FEMA are scientifically or technically incorrect. FEMA published regulations (44 CFR Parts 59 and 67, Federal Register, Vol. 48, No. 133, July 11, 1983) which specify more completely the scientific or technical data which must be submitted to demonstrate that FEMA's proposed elevations are in error. The rule is based on the concept of "relative correctness." FEMA's experience with the technical procedures for establishing base flood elevations has demonstrated that scientific and technical "correctness" is usually a matter of degree rather than absolute. Existing hydrologic, hydraulic and statistical techniques represent only approximations of real world behavior and include numerous simplifying assumptions. Similarly, economic considerations limit the amount and precision of basic data collection. In application, scientific and technical "correctness" is relative and evaluated on the basis of professional judgment as to whether methods and their application result in a reasonable approximation of reality, given the limitations of available technology and basic input data. Because of this, the rule requires appellants to demonstrate that FEMA's determinations are incorrect by providing an alternative application or analysis shown to produce more accurate results. Such information allows FEMA to evaluate the merits of an alternative analysis or application in a cost effective and objective manner.

The following paragraphs describe typical appeal situations and the types of data which must be submitted in each case:

2-2. Error in Mathematical Computation or Measurement. If an appellant believes that an error has occurred in the mathematical calculations or measurements involved in FEMA's analyses (e.g., in the establishment of physical dimensions or elevations of structure(s), or in the cross-sectional dimensions used in a hydrologic or hydraulic model), then the appellant is required to specifically identify and demonstrate the calculation or dimension(s) which is in error. Correct dimension(s) must be furnished as a part of supporting data for such an appeal. All computations or measurements submitted to FEMA must be certified by a registered professional engineer (RPE) or a licensed land surveyor (LLS).

If the location of some physical feature such as a bridge, culvert, dam, or roadway directly related to or controlling BFE's is thought to be incorrect, then plans detailed enough for FEMA to determine the correct location and dimensions of the structure(s) must be submitted. Such plans must be certified to be "as-built".

2-3. Changed Physical Conditions. If the ground geometry which currently exists is not that which was used by FEMA in hydraulic modeling computations to establish BFES, then the appellant must demonstrate that fact by furnishing current topographic mapping which covers the area of concern. The contour interval should provide at least the same or greater detail than that used to prepare the existing FIRM. If the revised topographic map is not of sufficient detail to determine new flood plain cross sections for use in a revised hydraulic computer model, then the appellant, to maintain the appeal, may be required to furnish field surveyed cross sections of the stream and flood plain. All topographic data submitted to FEMA in support of an appeal must be certified by a RPE or LLS.

2-4. Structural Improvements. If the appeal is based on structural improvements that were not considered in the proposed elevation determination, such as a new bridge or culvert, channel improvement, stream relocation, flood control dam or levee system, then the appellant must provide detailed as-built plans for the improvement. Any topographic changes in the flood plain associated with the structural improvement must also be delineated by submitting detailed topographic mapping and/or cross-section data. The information provided must be in sufficient detail for FEMA to incorporate the improvement into a reanalysis of flooding conditions. Any plans submitted must be certified to be as-built by a RPE or LLS. All earth-fill levees will be subject to the guidelines established in FEMA's Levee Policy Memorandum, and in the U.S. Army Corps of Engineers' manual entitled, "Design and Construction of Levees," dated March 31, 1978 (EM 1110-2-1913). All structural measures must be supported with maintenance agreements adopted by the community or other governmental body. Where applicable, operating plans will also be required as a condition of acceptance of certain structural measures by FEMA.

All earth-fill levees will be subject to FEMA's levee policy and the guidelines established in the U.S. Army Corps of Engineers' manual entitled, "Design and Construction of Levees," dated March 31, 1978 (EM 1110-2-1913). Information on FEMA's levee policy can be obtained by contacting FEMA (see paragraph 1-5).

2-5. Technical Incorrectness in Application of Methods. Technical incorrectness in the application of hydrologic, hydraulic, or other methods other than simple mathematical or measurement errors must be demonstrated by developing an improved or more correct analysis which FEMA can compare with the contested analysis. The appellant must do the following:

a. Identify the error in application or the data deficiency used in FEMA's analysis.

b. Provide supporting data or computations which demonstrate why the application is in error or why the data used is deficient.

c. Provide an analysis using the same basic methods as FEMA's correctly applied (if this is being contested) with the differences itemized.

d. Provide support for the changes by explaining why the appellant's analysis is more correct.

e. Provide certification by RPE or LLS of correctness of any alternative data utilized.

f. In riverine situations, provide revised flood profile computations for the 10-, 50-, 100-, and 500-year flood profiles for the affected reaches and stream(s), along with a revised floodway analysis (if the proposed floodway(s) are being contested).

g. In coastal situations, provide an analysis supporting revised 100-year stillwater flood elevations and/or wave height computations where appropriate.

h. Provide documentation (on a suitable topographic base map) of all locations where the appellant's analysis produces different results.

The following paragraphs provide examples of situations wherein technical incorrectness in the application of methods might be demonstrated.

2-6. Examples of Technical Incorrectness.

a. Example 1 (Riverine). If an appellant believes that the discharges used by FEMA to establish BFE's on a given stream were incorrect because more gage data has become available which will significantly affect the flood flow analysis, then the appellant should:

(1) Submit hydrologic computations using the same method as FEMA but with additional gage data included in the analysis and show that incorporation of additional years of flood record significantly affects the 100-year discharge estimate.

(2) Submit hydraulic analyses using the same method as FEMA but with the revised discharges and show that a significant difference in 100-year flood elevations can result from the difference in magnitude of discharges.

(3) Provide certification as described above.

(4) Provide flood profile computations for 10-, 50-, 100-, and 500-year frequency floods indicating changes in elevations and provide a revised floodway run, if appropriate.

(5) Provide a topographic map showing revised flood plain and/or floodway limits based on the revised analysis.

b. Example 2 (Coastal). If an appellant believes that in the wave height analysis, FEMA did not correctly interpret certain vegetation parameters that could influence the resultant wave crest elevation, then the appellant should:

(1) Submit aerial photography of sufficient scale which illustrates the vegetation in question.

(2) Identify the plant parameters being contested.

(3) Submit an alternative interpretation of the parameter(s).

(4) Provide supporting documentation for the alternative interpretation in the form of field measurements and ground level photography.

(5) Submit new wave height computations using the same procedures and transects from the FEMA study.

(6) Submit a topographic map showing revised placements of velocity zones and base flood elevations.

c. Example 3 (Topographic). If an appellant believes that a hydraulic analysis should have been performed using more detailed topographic data (e.g. additional flood plain cross sections), then the following should be submitted:

(1) Certified cross-section data.

(2) Revised flood profile computations for the 10-, 50-, 100-, and 500-year frequency floods incorporating the new data in the hydraulic model used by FEMA.

(3) Revised floodway computations (where appropriate) incorporating the new data.

(4) Topographic map delineating the revised flood plain or floodway limits.

2-7. Scientific Incorrectness in Methods. Appeals may be based on the contention that a particular methodology used by FEMA is incorrect or not appropriate to apply to a particular situation. The alternate methodology proposed by the appellant must be submitted for comparison with the contested methodology and must be fully documented as to author, theories, and assumptions used, and complete instructions provided regarding proper application of the method. The appellant is required to do the following:

a. Specify the method or assumption thought to be incorrect.

b. Support, through the use of computations, comparisons with other similar examples, why the method or assumption is scientifically incorrect.

c. Provide an alternate analysis, including computations, graphs, charts, using the alternate methodology and demonstrating that it produces a significantly different result.

d. Provide technical support which demonstrates why the alternate methods should be accepted as more correct.

e. In riverine situations, provide revised flood profile computations for the 10-, 50-, 100-, and 500-year flood profiles for the affected stream(s), along with revised floodway analyses for the same stream(s).

f. In coastal situations, provide 100-year stillwater flood elevations and/or wave height computations where appropriate.

g. Provide documentation (on a suitable topographic base map) of all locations where the appellant's analysis produces different results.

The following paragraphs provide examples of situations wherein scientific incorrectness in methods might be demonstrated.

2-8. Examples of Scientific Incorrectness.

a. Example 1 (Riverine). If an appellant believes that a methodology for computing peak discharges for drainage areas less than 5 square miles developed by the State university for use in a specific area of that State is more accurate than a regional methodology used by FEMA, then the appellant should:

(1) Specify the method or assumption thought to be incorrect. (Show that the regional methodology is not representative of local conditions while an area-specific methodology has been developed by an authoritative source.)

(2) Support why FEMA's method or assumption is scientifically incorrect. (Describe characteristics of a specific watershed which are not accounted for in the regional methodology.)

(3) Provide an alternate analysis using the methodology believed to be more correct. (Provide complete computations for the 10-, 50-, 100-, and 500-year peak discharges for the streams being appealed.)

(4) Provide technical support which demonstrates why the appellant's methods should be accepted as more correct. Provide complete documentation of the alternative methodology showing that it is more applicable to the particular flooding source being appealed and that it produces a significantly different result than that developed by FEMA.

(5) Provide revised flood profile computations and floodway computations (where appropriate) and indicate where changes in BFE's have occurred.

(6) Provide a topographic map showing revised BFE locations, flood plain and/or floodway limits resulting from the revised analysis.

b. Example 2 (Coastal). If an appellant believes that FEMA's application of a one-dimensional (versus two-dimensional) surge inland routing methodology was inadequate to accurately represent the hydrodynamic behavior of a particular area and, therefore, resulted in incorrect 100-year flood elevations, then the appellant should submit the following:

(1) An explanation as to why application of the one-dimensional methodology was inadequate;

(2) Computations of 100-year stillwater flood elevations for the area in question using a two-dimensional methodology and a listing of all input data and a reference for the source of the data;

(3) Complete documentation of the alternate methodology and its application;

(4) Computations of wave heights where appropriate, along with input data; and

(5) A detailed work map showing the results of computations including placement of BFE's and velocity zones.

CHAPTER 3

Requests for Changes in Preliminary Flood Insurance Studies and Maps Not Related to Proposed Base Flood Elevations

3-1. Difference Between Protests and Appeals. This chapter provides guidance on the policy of the Federal Emergency Management Agency (FEMA) concerning disagreements with FEMA's preliminary Flood Insurance Studies (FIS's), Flood Insurance Rate Maps (FIRM's), and Flood Boundary and Floodway Maps (FBFM's), which do not question the proposed base flood elevations (BFE's).

As stated at 44 CFR Part 67, only evidence demonstrating that the proposed BFE's are incorrect can be considered as an official appeal and evaluated under that regulation. This is a statutory requirement as expressed in Section 1363 of the Flood Disaster Protection Act of 1973, as amended. Disagreements pertaining to other mapping issues as described below are considered protests. Supporting data for protests should be presented to FEMA officials at the final consultation and coordination meeting, however, they will be reviewed if submitted during the 90-day appeal period and changes to the study and maps will be made if warranted.

The following paragraphs provide examples of various protests. A description of data required for FEMA to effect alterations to the preliminary FIRM's and/or FBFM's for the given types of protests is also provided.

3-2 Examples of Protests.

a. Flood Boundaries Incorrect on FIRM. Accuracy of FEMA's flood boundaries is directly related to the accuracy of established base flood elevations and topographic maps for the flood plain(s) in question. FEMA makes an effort to use the best topographic data available when delineating flood boundaries. Revisions of these boundaries are not an appealable item under Part 67 of the regulations. However, if topographic mapping is submitted which demonstrates changes in topography or shows greater detail than that used in the FIS or FIRM, then FEMA will use that data to adjust flood boundaries where BFE's have been proposed. Data submitted must be certified by a registered professional engineer (RPE) or licensed land surveyor (LLS). Mapping prepared by an authoritative source, such as the U.S. Army Corps of Engineers (COE), U.S. Geological Survey (USGS), U.S. Bureau of Reclamation, or a state department of highways and transportation, is acceptable as long as the sources and date of the mapping are indicated.

b. Approximate Study (Zone A) Flood Boundaries. These areas are determined by approximate methods using the best data available for 100-year flood definition. A request for modification of Zone A flood boundaries is not considered an item of appeal under Part 67 because no regulatory BFE is associated with it. However, data which provides more detailed analysis and/or topographic detail may be provided to FEMA in order to revise Zone A

delineations. Use of an acceptable method to compute peak 100-year discharges, corresponding flood depths at selected locations or a flood profile for the stream(s) in question, and delineation of resulting flood boundaries on topographic maps should be submitted for review by FEMA in support of a request to change Zone A boundaries.

c. Request for Floodway Redelineation. The floodway designation for a stream represents a minimum condition requirement of the community for adoption in their flood plain management ordinances. The location of the floodway is suggested to the community by FEMA based on hydraulic considerations. Several different configurations which satisfy FEMA criteria may exist for a given stream and it is the responsibility of the community to select and adopt an acceptable configuration. Therefore, all appeals to the floodway delineation must be made to the community. FEMA has developed a document entitled "Conditions and Criteria for Floodway Revisions" which specifies the actions communities must undertake to revise an established floodway. Copies of this document are available at the FEMA address cited in Paragraph 1-5.

d. Corporate Limit Changes. Adjustment to community corporate boundaries will be made provided FEMA is furnished accurate base mapping during the official appeal period. However, if such data is not submitted during the appeal period, this adjustment may be postponed until more substantive revisions are required.

e. Street Locations, Street Name Corrections, Addition or Deletion of Streets. These changes will be made within identified flood plain areas if FEMA is provided with accurate mapping during the official appeal period. However, these changes may be postponed until more substantive revisions are required if such data is not submitted during the official appeal period.