

## INTRODUCTION

Any individual property owner can **appeal** proposed base flood elevations (BFEs) or **protest** other information included on the preliminary digital maps, also known as 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 Property Owners in Santa Cruz County” for more details on the process.)

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

## APPEALS

- ❑ An appeal must be based on data and documentation showing that the proposed BFEs shown on a DFIRM and/or in a Flood Insurance Study (FIS) report are scientifically or technically incorrect.
- ❑ The distinction between "scientifically incorrect" and "technically incorrect" is important because of the differences in the types and amounts of data that a community or private appellant must submit to demonstrate one versus the other.
- ❑ Definitions of those terms are provided later in this document. First, however, it is appropriate to discuss the meaning of the word "correct" as it applies to the BFEs.
- ❑ The BFEs presented on the maps and in the accompanying reports are the result of engineering methodologies and computer models that were used by the study/project team, which was composed of experts from FEMA, the Santa Cruz Flood Control District, and their contractors.
- ❑ Because numerous methodologies and models have been developed for estimating flood discharges and flood elevations under a variety of conditions, the study/project team used their professional judgment in selecting methodologies and models that were appropriate for particular flooding sources.
- ❑ In general, because the methodologies are the result of attempts to reduce complex physical processes to mathematical models, the methodologies include simplifying assumptions.
- ❑ As is usual for FEMA flood studies/mapping projects, methodologies were used for Santa Cruz County with data developed specifically for the study/mapping project and specifically for the study areas. Therefore, the results of the methodologies are affected by the amount of data collected and the precision of any measurements made.

- ❑ Because of the judgments and assumptions that were made and the limits imposed by cost considerations, the "correctness" of the BFEs is often a matter of degree, rather than absolute.
- ❑ For that reason, appellants who contend that the BFEs are incorrect because better methodologies could have been used, better assumptions could have been made, or better data could have been used must provide alternative analyses that incorporate such methodologies, assumptions, or data and that quantify their effect on the BFEs .
- ❑ If such analyses are provided, FEMA will review the alternative analyses and determine whether they are superior to those used for the study/mapping project.
- ❑ The data that must be submitted in support of the various types of appeals are discussed in the subsections that follow.

### Scientifically Incorrect Elevations

- ❑ The BFEs are said to be **scientifically incorrect** if the methodology/model(s) used in the determination of 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 that is based on the BFEs being scientifically incorrect must prove that the use of a different methodology/model or different assumptions would produce more accurate results (i.e., BFEs that are more correct than the BFEs presented on the preliminary DFIRM and FIS report).
- ❑ To show that an inappropriate or incorrect hydraulic methodology has been used, an appellant must submit the following data:
  - New hydraulic analysis based on the alternative methodology/model and the flood discharge values used in the hydraulic analysis performed by the study/project team;
  - 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 DFIRM for the flooding source in question); and
  - Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the study/mapping project).

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.

### Technically Incorrect Elevations

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

- The methodology/model was not applied correctly.
- The methodology/model was based on insufficient or poor-quality data.
- The application of the methodology/model included indisputable mathematical or measurement errors.
- The methodology/model did not account for the effects of physical changes that have occurred in the floodplain.

### ***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 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 DFIRM for the flooding source in question); and
- Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the flooding source in question).

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.

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 the study/project team, in which the methodology used by the study/project team 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 DFIRM for the flooding source in question); and
- ❑ Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the flooding source in question).

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.

***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 the study/project team 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 DFIRM for the flooding source in question); and
- ❑ Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the flooding source in question).

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.

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

- Data believed to be better than those used in the hydraulic analysis performed by the study/project team;
- Documentation for the source of the new data;
- Explanation for the improvement resulting from use of the new data;
- New hydraulic analysis based on the new data and the flood discharge values used in the hydraulic analysis performed by the study/project team; and
- 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 DFIRM for the flooding source in question); and
- Revised regulatory floodway boundary delineations (if a regulatory floodway was computed for the flooding source in question).

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.

***Appeals Based on Contention That Analysis Contains Indisputable Errors***

- To show that a mathematical error was made, an appellant must identify the error.
- The calculations provided to FEMA must indicate an overall change in the BFEs—base flood elevation.
- To show that a measurement error (e.g., an incorrect surveyed elevation used in the study/mapping project) was made, appellants must identify the error and provide the correct measurement.
- Any new survey data provided must be certified by a Registered Professional Engineer or Licensed Land Surveyor.
- Again, FEMA will perform any required calculations and make the necessary changes to the affected DFIRM panel(s) and/or the affected FIS report materials (i.e., Flood Profiles, data tables).



## **APPEALS AND PROTESTS** Required Support Data & Documentation

### ***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.

### **Certification Requirements for Technical 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—that is, 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.

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## **PROTESTS**

Protests will generally involve changes to one or more of the following:

- Road names and configurations.
- Corporate limits; and/or
- Floodplain boundary delineations;

The various types of protests and the data and documentation that must be submitted to support them are discussed below.

### 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 for the study/mapping project.
- ❑ If topographic maps or other ground elevation data that are of greater detail than those used by the study/project team 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 DFIRM panel(s).

### 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 hydrologic 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 DFIRM 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 than those performed by the study/project team or that are based on better data than those used by the study/project team.

### Changes to Corporate Limits

- ❑ The corporate limits shown on the Preliminary DFIRM were taken from community maps obtained by the study/project team from community officials.
- ❑ If a community submits a protest because changes to the corporate limits shown on the DFIRM are necessary, the community must submit an up-to-date community map to support the protest.
- ❑ FEMA may use the submitted community map to revise the corporate limits shown on the affected DFIRM panel(s) or will explain to the CEOs of the affected communities, in writing, why no changes could be made.

### Changes to Road Names and Configurations

- ❑ On the Preliminary DFIRMs, the study/project team has shown all roads that are in or adjacent to the 1-percent-annual-chance floodplain.

- ❑ If a community or individual appellant chooses to submit a protest to show new or revised information concerning the locations and names of roads in or adjacent to floodplains, the community must provide a map showing the new or revised information.

#### **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 a 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.

#### **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 DFIRM panel(s) and FIS report materials. Therefore, 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 DFIRM panel in such a way as to create mismatches with the flooding information shown for adjacent DFIRM panels. Therefore, in performing new analyses and developing revised flooding information, appellants must tie the new flood elevations, floodplain boundaries, and regulatory floodway boundaries into those shown on the DFIRM 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 by appellants, including those that show mathematical or measurement errors, must be certified by a Registered Professional Engineer or Licensed Land Surveyor, as appropriate.

- ❑ 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 for the study/mapping project.
- ❑ 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 study/mapping project. For example, if a hydraulic analysis of the regulatory floodway was performed for a riverine flooding source, a comparable analysis would have to be performed by an appellant if changes to the regulatory floodway boundaries shown on the DFIRM are requested by an appellant.
- ❑ Unless appeals are based on the use of alternative models or methodologies, the hydrologic analyses that appellants submit must be performed using the hydrologic models used by the study/project team.
- ❑ Unless appeals are based on the use of alternative models or methodologies, the hydraulic analyses that appellants submit must be performed using the hydraulic models used by the study/project team.
- ❑ Appellants may request that FEMA provide them with copies of the input and output data from the model(s) used by the study/project team or copies of other calculations or analyses performed by the study/project team. 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 DFIRM that has been developed or amended through the use of the model.
- ❑ If appeals or protests will involve changing the floodplain boundaries shown on the DFIRM, the appellant will be required to submit delineations of both the 1- and 0.2-percent-annual-chance floodplain boundaries if 1- and 0.2-percent-annual-chance floodplain boundary delineations are shown on the Preliminary DFIRM.

- ❑ If the study/mapping project 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.

### **USE OF NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)**

- ❑ 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 (NGVD29), to a new national datum, North American Vertical Datum of 1988 (NAVD88).
- ❑ When submitting an appeal or protest, the appellant must use the reference datum on the Preliminary version of the DFIRM. For the Preliminary version of the DFIRM for Santa Cruz County, NAVD88 is the datum that must be used along with the latest datum adjustments.
- ❑ For more information on NAVD, 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*.
- ❑ Interested parties may also locate these reference documents in the FEMA Information Resource Library, which is located at [www.fema.gov/library](http://www.fema.gov/library).



**APPEALS AND PROTESTS**  
Required Support Data &  
Documentation

**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 in duplicate to their local government official as follows:

<p><b>Shawnee County (Unincorporated Area)</b> Mr. Barry Beagle, Planning Director Shawnee County Planning Department 1515 NW Saline St., Suite 102 Topeka, KS 66618 785-291-5410</p>	<p><b>City of Topeka</b> Ms. Miriam Berke, Manager City of Topeka Development Services 620 SE Madison St. Topeka, KS 66603 785-368-3704</p>
<p><b>City of Auburn</b> Mr. Wayne Coop, Building Inspector 161 West 9<sup>th</sup> St. Auburn, KS 66402 785-256-2426</p>	<p><b>City of Rossville</b> Mr. Jeff Overmyer, Zoning Administrator P.O. Box 337 Rossville, KS 66533 785-584-6155</p>
<p><b>City of Silver Lake</b> Ms. Darlene Stadler, City Clerk P.O. Box 92 Silver Lake, KS 66539 785-582-4280</p>	<p><b>City of Willard</b> Ms. Laura Lord 127 Holden St. Willard, KS 66615 785-256-4614</p>

These will be reviewed and forwarded to FEMA for their consideration. Only those appeals and protests that are received by the close of business on the last day of the 90-Day Appeal Period, can be considered and reviewed.