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 (Supersedes FIA-10, dated April 1981
 which may not be used.)

GUIDE TO FLOOD INSURANCE RATE MAPS

A guide for interested citizens,
 community officials, lending
 institutions, and insurance agents

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This guide will help you read and understand a Flood Insurance Rate Map (FIRM). The FIRM is one product of a Flood Insurance Study conducted by the Federal Emergency Management Agency to establish the extent of the flood hazard within a flood-prone community. Once published, the FIRM is an important source of flood risk data for the implementation of the National Flood Insurance Program in that community.

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ABBREVIATIONS USED IN THIS GUIDE

BFE

Base Flood Elevation

ERM

Elevation Reference Mark

ETJ

Extraterritorial Jurisdiction

FBFM

Flood Boundary and Floodway Map

FEMA

Federal Emergency Management Agency

FHBM

Flood Hazard Boundary Map

FIA

Federal Insurance Administration

FIRM

Flood Insurance Rate Map

FIS

Flood Insurance Study

FMDC

Flood Map Distribution Center

MIP

Map Initiatives Project

NFIP

National Flood Insurance Program

NGVD

National Geodetic Vertical Datum of 1929

SFHA

Special Flood Hazard Area

INTRODUCTION

The National Flood Insurance Program (NFIP) is a Federal program, established by Congress in 1968, that allows property owners to purchase federally backed flood insurance within communities that participate in the Program.

In return for this insurance protection, participating communities implement floodplain management measures to reduce flood risks to new development. Through this mechanism, the Federal Emergency Management Agency (FEMA) and participating communities are able to reduce future flood losses.

Under the NFIP, FEMA is required to develop flood risk data for use in both insurance rating and floodplain management. FEMA develops these data through Flood Insurance Studies (FISs).

In FISs, both detailed and approximate analyses are employed. Generally, detailed analyses are used to generate flood risk data only for developed or developing areas of communities. For undeveloped areas where little or no development is expected to occur, FEMA uses approximate analyses to generate flood risk data.

Using the results of an FIS, FEMA prepares a Flood Insurance Rate Map (FIRM) that depicts the Special Flood Hazard Areas (SFHAs) within the studied community. SFHAs are areas subject to inundation by a flood having a one-percent or greater probability of being equaled or exceeded during any given

year. This flood, which is referred to as the 100-year flood (or base flood), is the national standard on which the floodplain management and insurance requirements of the NFIP are based.

Within the SFHAs identified by detailed analyses, the FIRM shows base flood elevations (BFEs) and flood insurance risk zones. In addition to SFHAs, the FIRM shows areas subject to inundation during the 500-year flood and may show areas designated as a regulatory floodway. The regulatory floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the BFE more than a specified amount. Within the SFHAs identified by approximate analyses, the FIRM shows only the flood insurance zone designation.

The results of the FIS are also presented in an FIS report. This report is a technical document that provides information used mainly by community officials for floodplain management. The FIS report can be reviewed at community planning, zoning, or engineering offices.

FEMA publishes the FIRM and distributes it to a wide range of users. Private citizens, community officials, insurance agents and brokers, lending institutions, and Federal agencies use the FIRM to determine the degree of flood hazard in specific areas of the community so that actuarial premium rates can be assigned and full insurance coverage obtained for properties at risk.

The FIRM provides information that allows the map user to—

- identify Special Flood Hazard Areas subject to flooding,

- identify the location of a specific property,
- estimate the BFE at a specific site,
- determine the flood insurance zone at a specific site, and
- determine the location of the regulatory floodway (where shown).

Insurance agents and brokers use the FIRM to determine the locations of properties and the corresponding insurance zones, which determine actuarial flood insurance premium rates.

Lending institutions and Federal agencies, when they make loans or provide grants for the acquisition or construction of buildings, use the FIRM to determine the locations of properties and whether flood insurance is required.

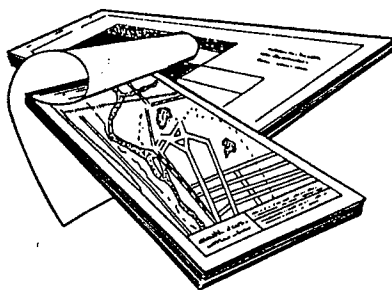
Community officials use the FIRM to administer floodplain management regulations.

This guide will help you identify and understand key features of a FIRM. It contains illustrations and a step-by-step example of how to use a FIRM.

FLOOD INSURANCE RATE MAP FORMATS

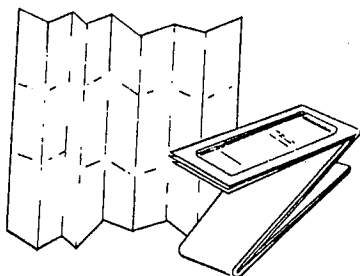
To help the map user locate a specific property or site and determine the flooding information that applies to the site, the FIRM depicts common physical features that exist within the community. These features include major highways, secondary roads, lakes, railroads, and streams and other waterways. The FIRM may consist of one or more individual panels; however, panels are printed only for those areas of the community that are subject to flooding.

The FIRM for your community will be either a Flat FIRM or a Z-Fold FIRM:



Flat FIRM—A Flat FIRM consists of a cover sheet, on which a map index and map legend appear, and one or more 11"×17" map panels that cover the flooded areas of the community.

Originally, all FIRMs were published in this format. In the mid-1970's, FEMA began publishing FIRMs in the Z-Fold format.



Z-Fold FIRM—A Z-Fold FIRM consists of one or more map panels, each of which contains a map legend. Depending on the size and shape of the community and the areas to be covered, the FIRM may consist of panels of up to five standard sizes.

When a FIRM consists of more than one panel, it will also include a separate Index. Eventually, all FIRMs will be published in this format.

A separate map, the Flood Boundary and Floodway Map (FBFM), that depicts regulatory floodways and other floodplain management information may be prepared in conjunction with the FIRM but is distributed separately, with the FIS report.

In general appearance, all Z-Fold FIRMs are alike. However, as a result of design changes that affect the type and amount of information shown on these maps, several variations now exist.

■ **Map Initiatives Project (MIP)**—As a result of a project conducted to identify the needs of FIRM users, FEMA changed

the design of the Z-Fold FIRM in several ways to better meet those needs.

The two most significant changes are that newer Z-Fold FIRMs include floodways and floodplain management information not shown on older FIRMs, and newer Z-Fold FIRMs present a simplified, or compressed, set of insurance zone designations.

■ **Countywide FIRM**—In the past, each FIRM usually covered only one community. If the mapped community was a county, flooding information was shown only for those areas within the jurisdiction of the county government, the unincorporated areas.

Therefore, on the FIRMs for most counties, no flooding information has been shown for the incorporated communities within those counties. The corporate limits of the communities have been shown in the proper location, but the areas within the limits remain blank. Separate FIRMs have been prepared for the incorporated communities.

More recently, several Z-Fold countywide FIRMs have been produced, each of which shows flooding information for the entire geographic area of a county, including the incorporated communities within the county. As a result, each countywide FIRM becomes the official source of flood risk data for several communities.

The following sections provide a complete description of the key elements of FIRM Indexes and FIRM panels. Keep in mind, however, that as a result of variations in FIRM format and design, not all of the elements described appear on every FIRM.

KEY ELEMENTS OF THE FIRM INDEX

Flat FIRMs, and Z-Fold FIRMs composed of more than one panel, are accompanied by Indexes. The FIRM Index shows the outline of the mapped community and the numbers and layout of the individual FIRM panels that cover the community. The FIRM Index also contains a title box, in which the name of the mapped community appears.

Figures 1 through 3 illustrate the following key elements of Flat FIRM Indexes and Z-Fold FIRM Indexes.

A. Community Name

Identifies the mapped community, the community type (e.g., town, city, county), and the county and state in which the community is situated. When the mapped community is a county, the words "Unincorporated Areas" appear below the county name, indicating that the incorporated communities within the county are not covered.

On countywide FIRMs, the words "And Incorporated Areas" appear as part of the community name, indicating that the entire geographic area of the county is covered, including the incorporated communities within the county.

B. Community Number

Six-digit NFIP identification number for the mapped community. The community number is often followed by a letter suffix, which is increased alphabetically each time the FIRM is revised.

Refer to the appropriate community number when you have questions concerning a Flat FIRM or non-countywide Z-Fold FIRM or when you order one of those types of maps from the Flood Map Distribution Center (see Appendix A). Community numbers also appear on countywide FIRMs. However, when you have a question about a countywide FIRM or when you order one, you should refer to the map number (see Item G).

C. Listing of Communities (Countywide FIRMs Only)

Identifies all communities covered by the FIRM, their NFIP identification numbers, the panel or panels on which each community is shown, and the Initial Identification Date (see "Key Elements of the FIRM Panel," Item 31) and Post-FIRM Date for each community.

The Post-FIRM Date for a community is the effective date of the first FIRM published for that community. When a countywide FIRM becomes effective, it supersedes all previous versions of FEMA flood hazard maps for the communities it covers.

D. List of Printed Panels (Z-Fold FIRMs Only)

Identifies those panels, out of the total number shown in the body of the Index, that are printed. The layout of a multiple-panel FIRM allows for map coverage of the entire community. However, when a panel covers an area of the community that falls entirely within one flood insurance zone, that panel is not printed and an explanatory note is added to the body of the Index (see Item L).

E. List of Community-Panel Numbers (Non-countywide Z-Fold FIRMs Only)

Indicates the total number of panels in

the layout of the FIRM, including both printed and unprinted panels. Each panel is identified by a ten-digit community-panel number, which is composed of the six-digit NFIP identification number for the mapped community (see Item B) and a four-digit panel number.

F. Key to Map (Flat FIRMs Only)

Map legend that identifies the symbols that appear on the map and provides information about the map. The legend does not appear on individual Flat FIRM panels. For Z-Fold FIRMs, a similar legend is shown on each FIRM Panel. You may therefore refer to the section entitled "Key Elements of the Z-Fold FIRM Panel" for an explanation of the information that appears in the Key to Map (see Figure 7, "Panel Legend").

G. Map Number (Countywide FIRMs Only)

Identifies the FIRM. Because a countywide FIRM covers more than one community, the map number cannot be based on the six-digit NFIP community identification number (see Item B) for either the county or any of its incorporated communities. Instead the map number is composed of a two-digit state code; a three-digit county code; the letter "C," which indicates that the FIRM has been prepared in the countywide format; and four zeros.

H. Panel Limit Line

Shows the extent of the area covered by the panel.

I. Corporate Limit or County Boundary Line

Identifies the jurisdictional limits within which the mapped community has regulatory authority over development.

In some states, an incorporated

community may exercise extraterritorial jurisdiction (ETJ) over land use in areas beyond its corporate limits. Where appropriate, ETJ limits are shown and labeled on the Index.

J. North Arrow

Orients the map and helps map users determine property locations.

K. Effective or Revised Date (Z-Fold FIRMs Only)

The effective date of the FIRM. This date appears below the words "Effective Date:" or "Map Revised:". "Map Revised:" indicates that one or more panels of the FIRM have been revised at least once.

L. Panel-Not-Printed Note

Identifies panels included in the FIRM layout that are not printed and explains why they are not printed. The note is preceded by an asterisk or other reference symbol, which also appears next to the appropriate panel number, community-panel number, or map number (see Item P).

M. Inset Note

Identifies areas of the mapped community for which panels have not been created. Such areas are usually small and do not warrant the creation of a panel. These areas are shown as insets (i.e., small, separate maps) on printed panels. The note identifies the panel on which the inset is shown.

N. Flood Prone Street Index (Newer Z-Fold FIRMs Only)

Lists the streets within the mapped community that are partially or completely within the SFHA and the panel or panels on which each street is shown. Also listed for each street are grid coordinates that allow the map user to

locate the street on the panel (see "Key Elements of the FIRM Panel," Item 33). For multiple-panel FIRMs, the Flood Prone Street Index is shown either on the Index or, when the number of flood-prone streets is large, on a separate panel. When the FIRM consists of only one panel, the Flood Prone Street Index is shown on that panel.

O. Flood Prone Area Overview (Newer Z-Fold FIRMs Only)

Provides a generalized depiction of the SFHAs shown on the individual FIRM panels. Because the delineations of SFHAs on the Index are generalized, they are intended only to help the map user find the appropriate FIRM panel; they are not to be used in place of the more detailed delineations shown on the FIRM panels.

P. Panel Number/Community-Panel Number/Map Number

A panel number appears within each panel shown on a Flat FIRM Index; a community-panel number appears within each panel shown on a non-countywide Z-Fold FIRM Index; and a map number appears within each panel shown on a countywide Z-Fold FIRM Index. Each of these three elements serves the same purpose on an Index: it identifies the FIRM panel that covers the indicated portion of the mapped community.

On Z-Fold FIRM indexes, the community-panel number or map number shown for each panel is followed by a letter suffix, which is increased alphabetically each time that panel is revised.

Figure 1
Key Elements of a Flat FIRM Index

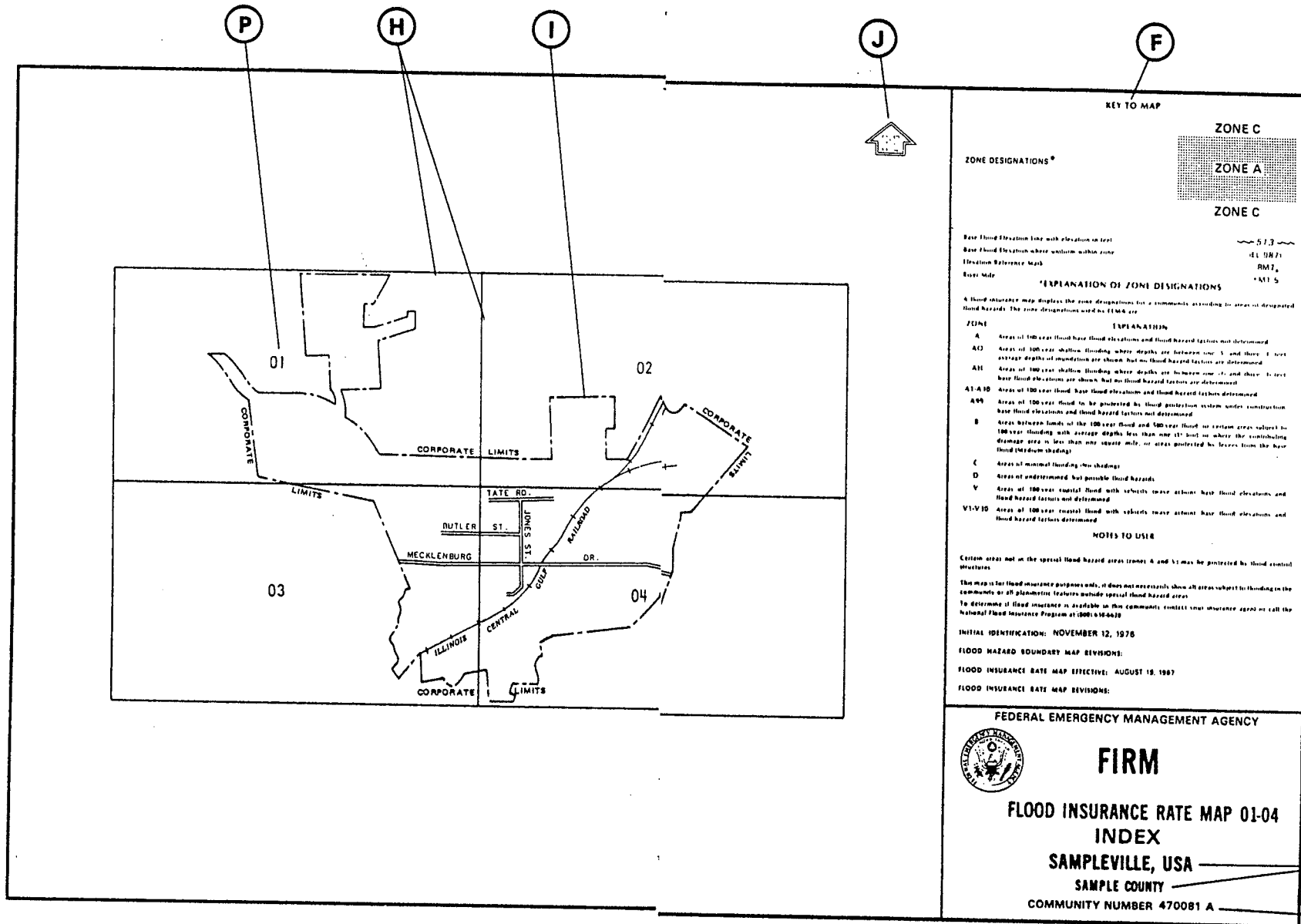
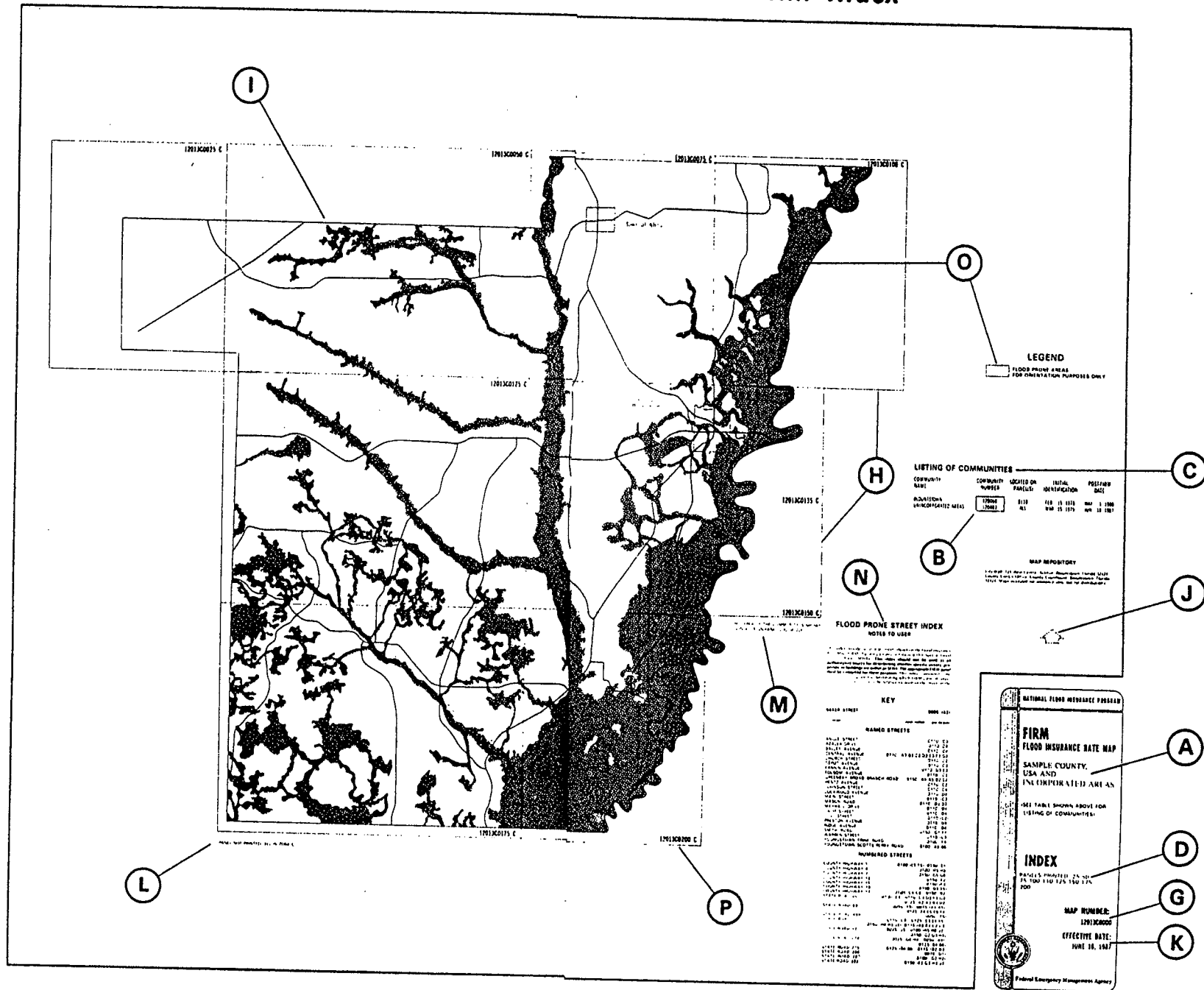


Figure 3 Key Elements of a Countywide Z-Fold FIRM Index



KEY ELEMENTS OF THE FIRM PANEL

A FIRM may consist of one or more panels. The number of panels depends on the size of the mapped community and the scale at which the FIRM is prepared. Each panel depicts the flood hazards within the portion of the community covered by that panel. Each panel includes a title box that contains the name of the community, the map panel number, and other information. Each Z-Fold FIRM panel also includes a legend that provides information about the map.

Figures 4 through 8 illustrate the following key elements of Flat FIRM panels and Z-Fold FIRM panels.

1. Community Name

Identifies the mapped community, the community type (e.g., town, city, county), and the county and state in which the community is situated. When the mapped community is a county, the words "Unincorporated Areas" appear below the county name, indicating that the incorporated communities within the county are not covered.

On countywide FIRMs, the words "And Incorporated Areas" appear as part of the community name, indicating that the entire geographic area of the county is covered, including the incorporated communities within the county.

2. Community Number

Six-digit NFIP community identification number for the mapped community.

3. Panel Number

Identifies the panel. On Flat FIRMs, the panel number matches a panel number shown on the Index (see "Key Elements of the FIRM Index," Item P).

On non-countywide Z-Fold FIRMs, the panel number also appears in four-digit form as the last part of the community-panel number (see Item 4). On countywide Z-Fold FIRMs, the panel number also appears in four-digit form as the last part of the map number (see Item 5).

4. Community-Panel Number (Non-countywide Z-Fold FIRMs Only)

Corresponds to a community-panel number shown on the FIRM Index and identifies the panel (see "Key Elements of the FIRM Index," Item P). The community-panel number may be followed by a letter suffix, which is increased alphabetically each time the panel is revised.

5. Map Number (Countywide FIRMs Only)

Corresponds to a map number shown on the FIRM Index and identifies the panel (see "Key Elements of the FIRM Index," Item P). The map number shown on each panel is composed of the same state code, county code, and letter "C" that appear in the title box of the Index, but includes the appropriate four-digit panel number instead of the four zeros shown in the Index title box (see "Key Elements of the FIRM Index," Item G).

The map number may be followed by a letter suffix, which is increased alphabetically each time the panel is revised.

6. List of Communities (Countywide FIRMs Only)

Identifies the communities for which flooding information appears on the panel. The appropriate NFIP identification number, panel number, and letter suffix are shown for each community in the list.

7. Corporate Limit or County Boundary Line

Identifies the jurisdictional limits (within which the mapped community has regulatory authority over development) of the portion of the community that appears on the panel. (Portions of more than one mapped community may appear on a countywide FIRM panel.)

In some states, an incorporated community may exercise extraterritorial jurisdiction (ETJ) over land use in areas beyond its corporate limits. Where appropriate, ETJ limits are shown and labeled on FIRM panels.

8. North Arrow

Orients the map and helps map users determine property locations.

9. Map Scale

Allows the map user to relate distances measured on the map to actual distances on the ground and thereby determine the locations of individual properties.

The scales most commonly used for FIRMs are 1"=500', 1"=1000', and 1"=2000'. The scale at which an individual FIRM panel is prepared depends on the type and amount of flooding expected to occur in the portion of the community covered by that panel. Because flooding and development conditions can vary within a community, a single FIRM may include panels prepared at different scales. Therefore,

the scale shown on a panel applies only to that panel and not to the FIRM as a whole.

10. Effective or Revised Date

The effective date of the FIRM. On Flat FIRM panels, the date appears below the words "Effective Date" or "Revised." On Z-Fold FIRM panels, the date appears below the words "Effective Date:" or "Map Revised:".

When revisions are made to a Flat FIRM, the entire FIRM is reprinted, regardless of the number of panels it comprises or the extent of the revision. A revision to one panel necessitates reprinting the entire FIRM. Therefore, "Revised" on a Flat FIRM panel means that the FIRM has been revised and reprinted at least once.

When revisions are made to a Z-Fold FIRM, only those panels affected by the revision are reprinted. Therefore, "Map Revised" appears only on those panels that have been revised and reprinted. When one or more panels of a Z-Fold FIRM are revised, the FIRM Index is revised to show the new suffix for each of those panels (see "Key Elements of the FIRM Index," Item P).

Refer to the FIRM revisions chronology in the panel legend for a list of any revisions made to the FIRM (see Item 25).

11. Zone Label

Identifies the flood insurance zone designation for a specific area of the mapped community.

12. Flood Hazard Area Designation

Dark and light tints that identify areas of greater and lesser flood hazard, respectively. On Flat FIRMs and older Z-Fold FIRMs, the dark-tinted areas are designated as Zone A, AO, AH, A1-A30, A99, V, or V1-V30; light-tinted areas are

designated as Zone B; and areas where no tints are shown are designated as Zone C or Zone D.

On newer Z-Fold FIRMs, the dark-tinted areas are designated as Zone A, AE, AH, AO, A99, V, or VE; light-tinted areas are designated as Zone X; and areas where no tints are shown are designated as Zone X or Zone D.

13. Floodway Designation (Newer Z-Fold FIRMs Only)

Identifies floodway areas. The floodway is the channel of a river or other watercourse plus any adjacent floodplain areas that must be kept free of encroachments so that the 100-year flood discharge can be conveyed without increasing the elevation of the 100-year flood more than a specified amount.

14. Stream Line

Identifies the location of a watercourse. Small streams are usually shown by a single line that represents the approximate location of the stream centerline. Larger streams are often shown by a double line that represents the approximate location of the streambanks.

15. BFE Line and BFE Label

Indicate the water-surface elevation of the base flood referenced to the National Geodetic Vertical Datum of 1929 (NGVD)—or another datum, if specified—within SFHAs. The wavy BFE line is used in areas where the BFE varies, such as riverine floodplains. The BFE label, or tag, appears in SFHAs where the BFE is uniform across a large area, such as lacustrine (lake) or coastal floodplains. The BFE is usually expressed in feet but is expressed in meters for some communities.

16. Zone Division Line

Divides zones in SFHAs and divides areas with different whole-foot BFEs in coastal SFHAs.

17. Floodplain Boundaries

Shows the limits of the 100-year and 500-year floodplains.

18. Floodway Boundary (Newer Z-Fold FIRMs Only)

Shows the limits of the floodway (see Item 13).

19. Elevation Reference Mark (ERM)

Identifies a point where a ground elevation has been established by survey. Descriptions of the ERMs, including their elevations (referenced to NGVD), are provided. ERM elevations are usually expressed in feet but are expressed in meters for some communities.

Descriptions of the ERMs shown on a Flat FIRM are provided on the last panel of the FIRM. Descriptions of the ERMs shown on older Z-Fold FIRMs are usually provided on the panel on which the ERMs appear. Occasionally, when there is no room to include the descriptions on that panel, they are shown on another panel, and an explanatory note is added to the panel on which the descriptions would have otherwise been shown. Descriptions of the ERMs that appear on newer Z-Fold FIRMs are provided in the separately printed FIS report.

20. River Mile Marker

Indicates distance in miles from a reference point on a river or other major watercourse. A standard reference point could be a river mouth, community corporate limit, or a major physical feature, such as a bridge or dam. River miles are established only for selected streams and therefore do not always appear on FIRMs.

21. Coastal Barrier Symbol

Identifies undeveloped coastal barriers within the Coastal Barrier Resources System established by Section 4 of the Coastal Barrier Resources Act (Pub. L. 97-348). As required by the Act, no new flood insurance coverage may be provided after October 1, 1983, for new or substantially improved structures on any barrier within the Coastal Barrier Resources System. The coastal barrier symbol appears on a FIRM only when the mapped community includes such barriers.

22. Flood Insurance Zone Designations

The zone designations that appear on the FIRM. Each designation indicates the magnitude of the flood hazard within a specific area. On Flat FIRMs and older Z-Fold FIRMs, Zones A, AO, AH, A1-A30, A99, V, and V1-V30 identify SFHAs; Zones B and C identify areas of lesser flood hazard; and Zone D identifies areas where the magnitude of the flood hazard has not been determined.

On newer Z-Fold FIRMs, Zones A, AE, AH, AO, A99, V, and VE identify SFHAs; Zone X identifies areas of lesser flood hazard; and Zone D identifies areas where the magnitude of the flood hazard has not been determined.

23. Notes to User

Provide additional information about the FIRM.

24. First FIRM Effective Date (Non-countywide FIRMs Only)

The date on which a FIRM first became effective for the community. As of that date, the FIRM superseded all previous versions of FEMA flood hazard maps for the mapped community, i.e., FHBMs.

On the FIRM effective date, the mapped community (if participating in the NFIP)

is converted to the Regular Phase of the NFIP. This date is not necessarily the date of the latest version of the FIRM, however (see Item 25).

25. FIRM Revisions Chronology

On Flat FIRMs, lists the effective dates of revised versions of the FIRM, if any, and briefly describes the reasons for the revisions. On a Z-Fold FIRM panel, lists the effective dates of revised versions of that panel, if any, and briefly describes the reasons for the revision. A more comprehensive revisions chronology may be found in the FIS report.

26. Area-Not-Included Label

Identifies areas in or adjacent to the mapped community that are not within the jurisdiction of that community and are therefore not mapped.

27. Panel Locator Diagram (Newer Z-Fold FIRMs Only)

Shows the area covered by the panel in relation to the outline of the mapped community. The panel locator diagram helps map users to find the panel that covers a specific portion of the community.

28. Cross Section Symbol (Newer Z-Fold FIRMs Only)

Identifies the locations of floodplain cross sections used in the computation of BFEs.

29. Countywide FIRM Effective Date (Countywide FIRMs Only)

The date on which the countywide FIRM first became effective. Individual non-countywide FIRMs may have been in effect for one or more of the communities in the county before the countywide FIRM was published. If so, the initial FIRM effective dates for each community may be shown as Post-FIRM

Figure 4
Key Elements of a Flat FIRM Panel

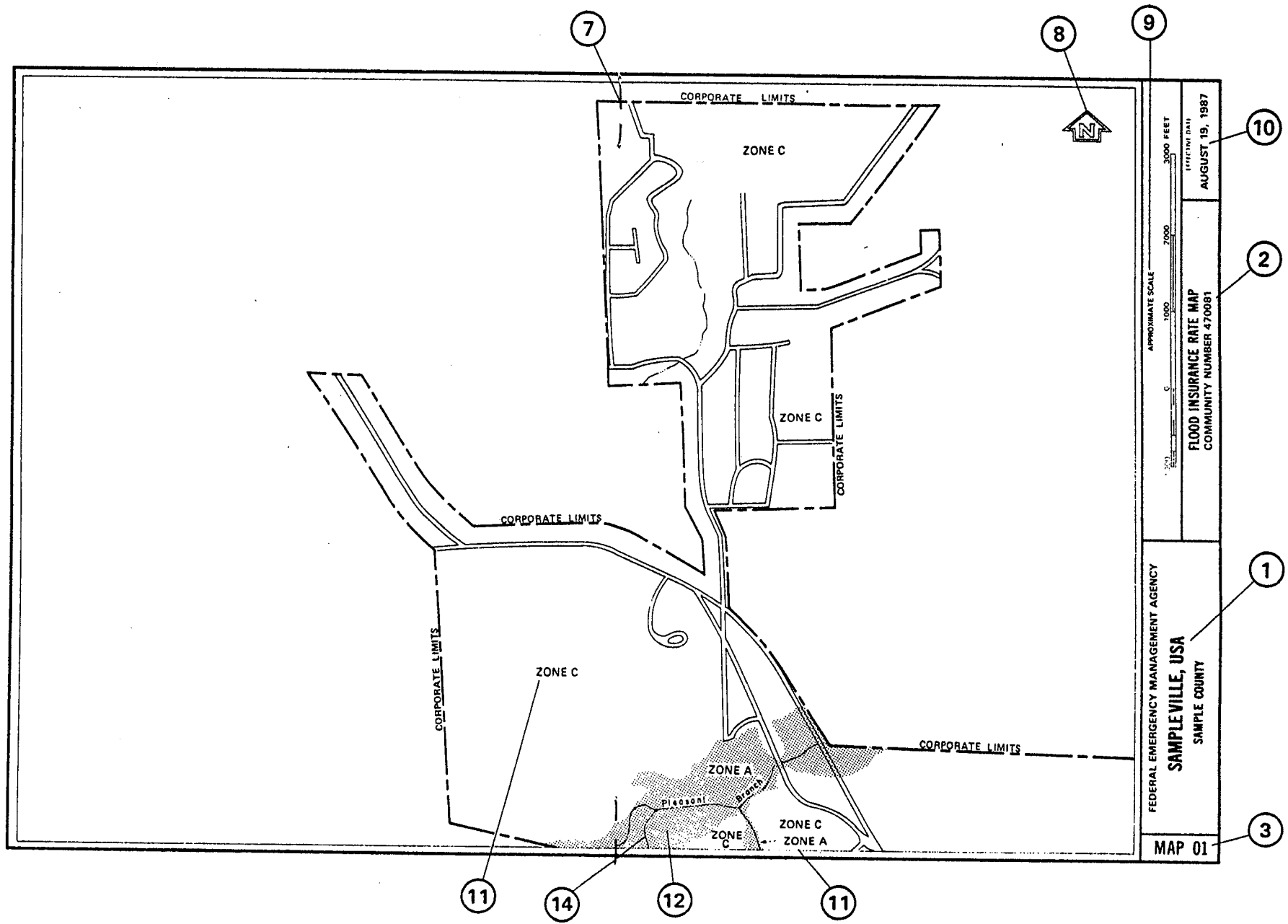
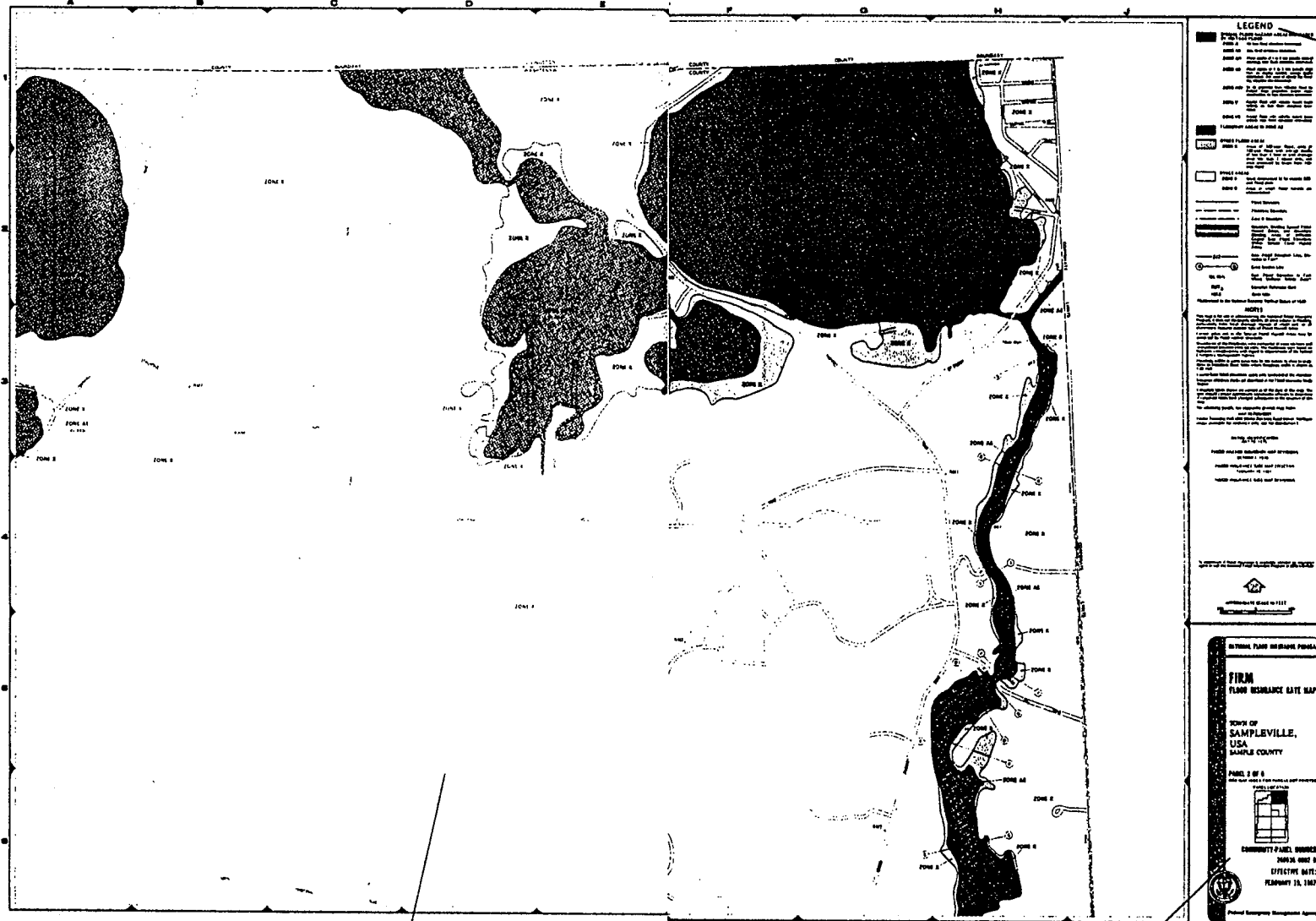


Figure 5
Key Elements of a Z-Fold FIRM Panel

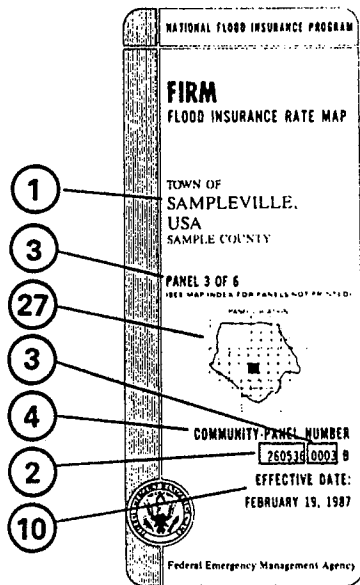


Legend
(See Figure 7)

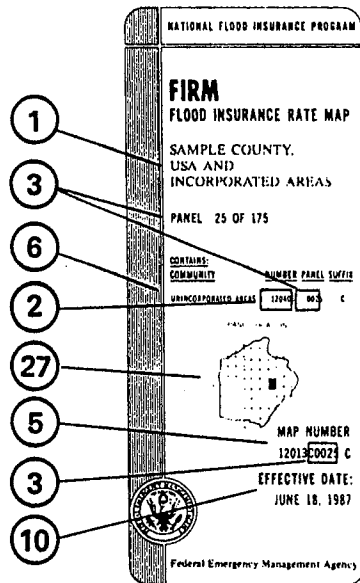
Body of Map
(See Figure 8)

Title Box
(See Figure 6)

Panel Title Box

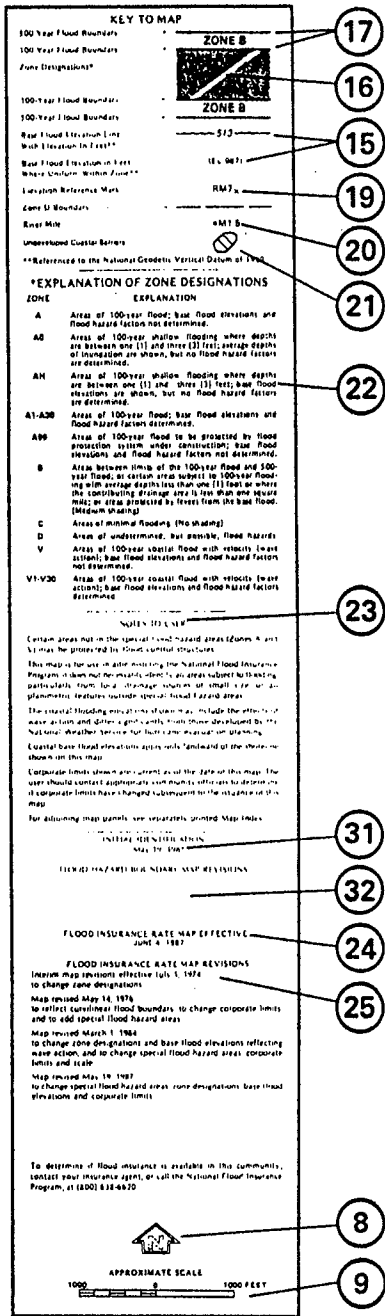


Non-Countywide

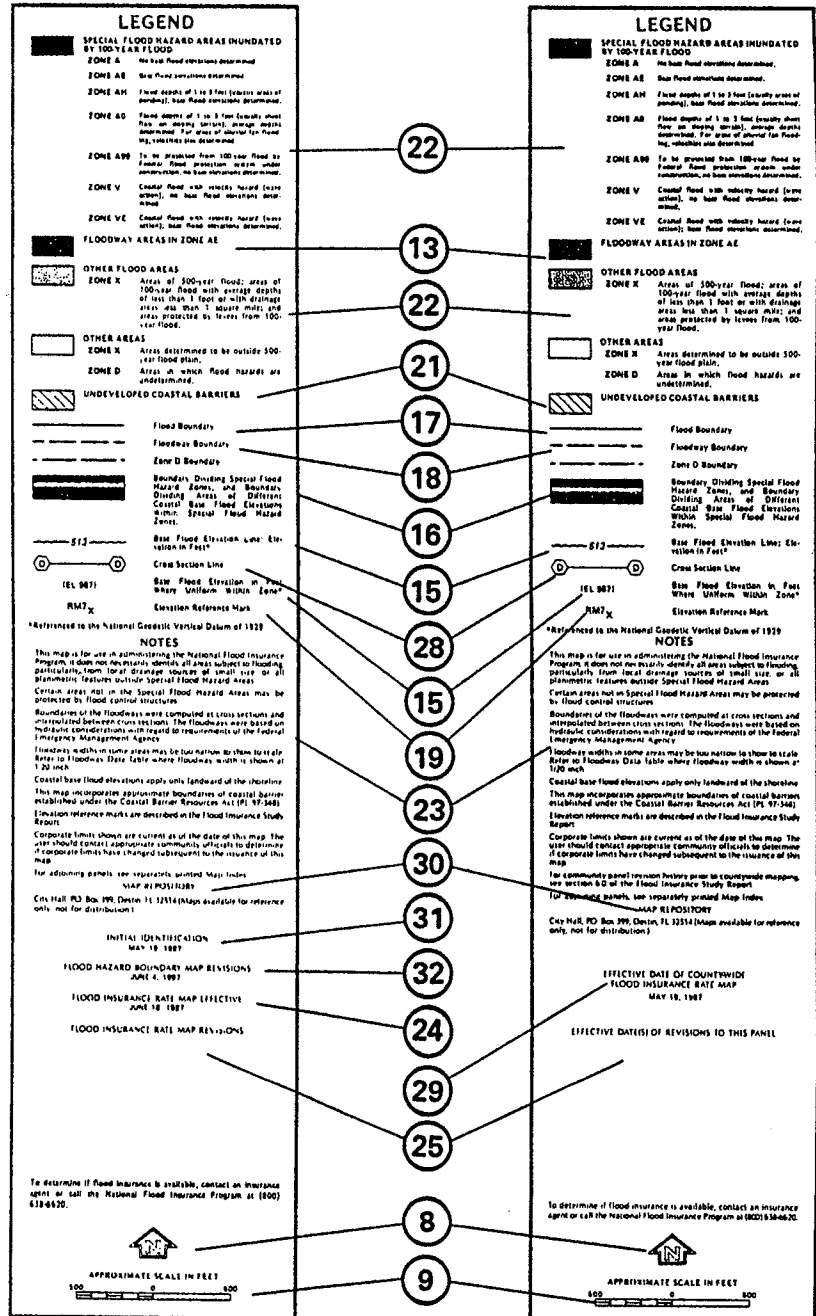


Countywide

Panel Legend



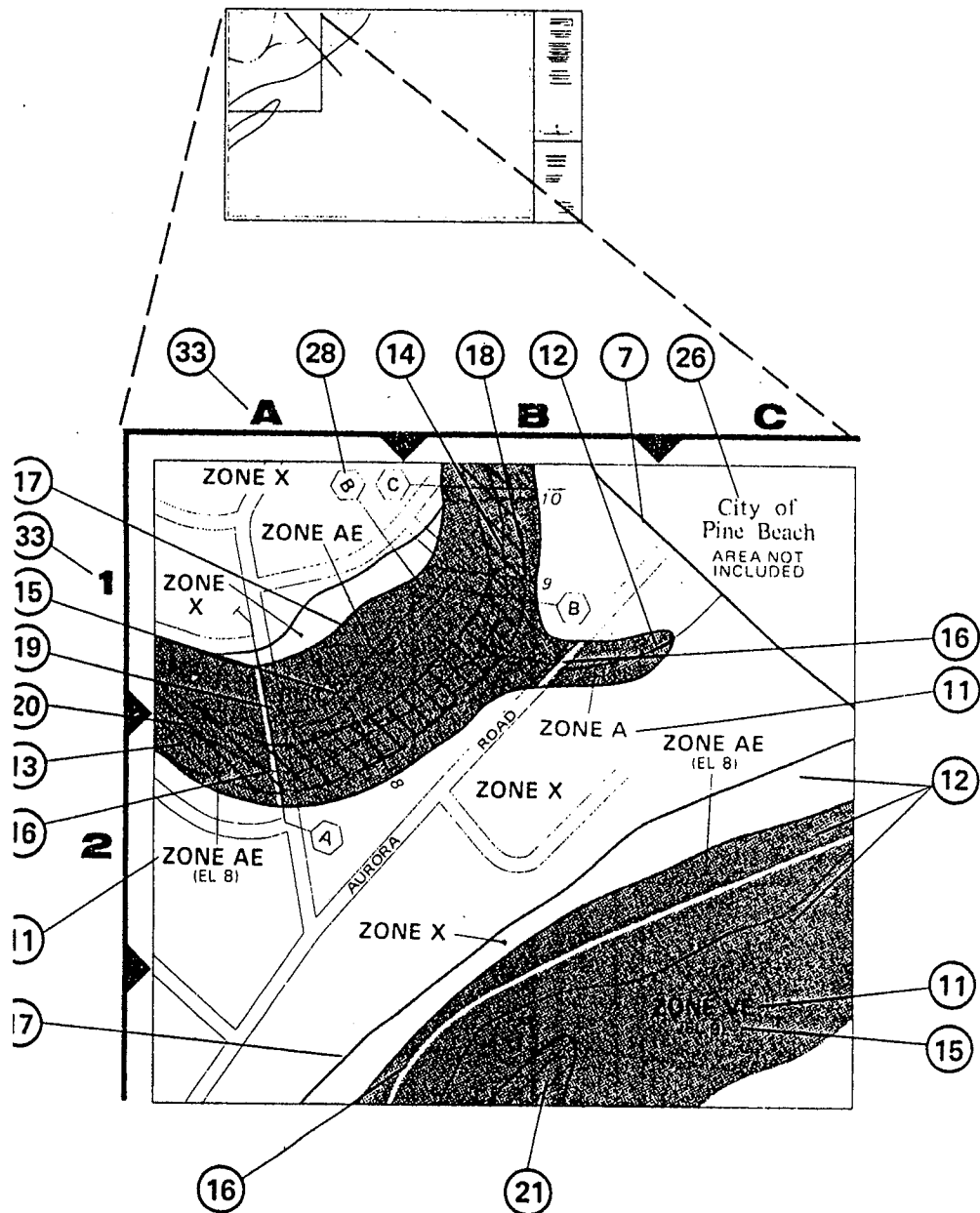
Non-countywide



Non-countywide

Countywide

Figure 8
Body of Map



Dates in the Listing of Communities that appears on the FIRM Index (see "Key Elements of the FIRM Index," Item C).

30. Map Repository Address (Newer Z-Fold FIRMs Only)

The official community repository in which reference copies of the FIRM and FIS report are stored and made available for community residents and other interested parties to review.

31. Initial Identification Date (Non-countywide FIRMs Only)

The date on which the flood hazards within the mapped community were first identified (usually the date that the first FHM for the community became effective).

32. FHM Revisions Chronology (Non-countywide FIRMs Only)

Lists the effective dates of revised versions of the FHM, if any.

33. Alpha-numeric Grid (Newer Z-Fold FIRMs Only)

Basis of coordinate system established for the Flood Prone Street Index (see "Key Elements of the FIRM Index," Item N).

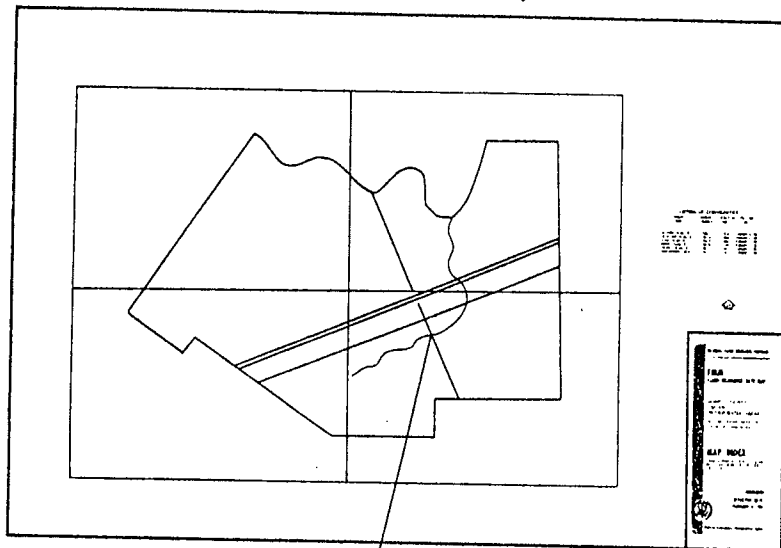
USING THE FIRM TO DETERMINE THE ZONE DESIGNATION AND BASE FLOOD ELEVATION FOR A SPECIFIC PROPERTY

The main purpose of the FIRM is to provide the information needed by insurance agents, lending institutions, community officials, and private citizens to determine—

- whether a specific property is within the SFHA (or floodway, where shown),
- the flood insurance zone designation that applies to the property, and
- the BFE at the property.

The following example illustrates a step-by-step procedure by which map users can establish the location of a property on the FIRM and make the necessary determinations.

Figure 9— Z-Fold FIRM Index for Sampleville



General Area
of Property

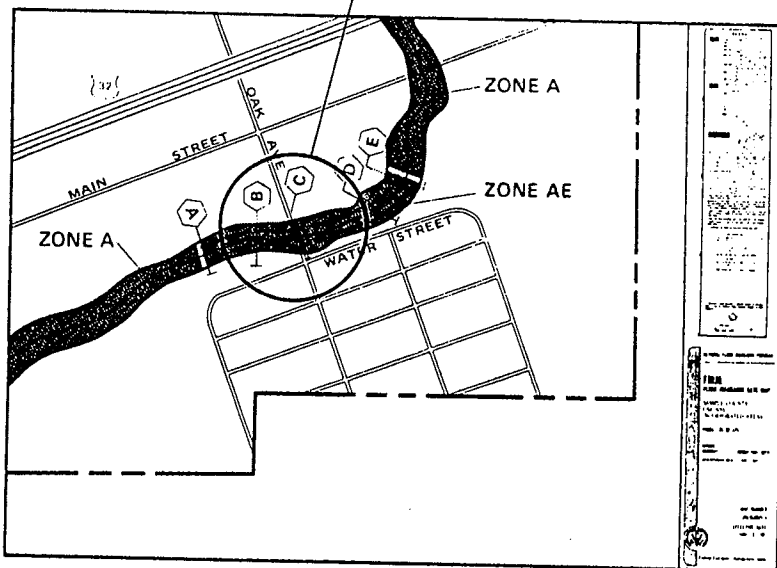


Figure 10—Z-Fold FIRM Panel 0004 for Sampleville

Community Example: City of Sampleville, U.S.A.

You are considering buying a piece of property on Water Street in the City of Sampleville, Sample County, U.S.A., and you want to know whether this property is in an SFHA or a floodway. You also want to determine the flood insurance zone designation and BFE that apply to the property. To obtain that information you should follow the steps outlined in this section. (Refer to Appendix A for information about how you can obtain a copy of the FIRM for a specific community.)

Step 1. Identify the Correct FIRM Panel
To identify the FIRM panel that covers the property in question, you should refer to the Index for the Sampleville FIRM (Figure 9). In reviewing the Index, you find the FIRM was prepared in the Z-Fold format and that it is composed of four panels. The Index title box indicates all four panels (Numbers 1, 2, 3, and 4) are printed. According to the north arrow on the Index, the FIRM is oriented so that north is straight up.

You know the property is on Water Street, which lies in the southeastern portion of the city, south of Interstate 32.

Although Water Street itself is not shown on the Index, you can determine from the north arrow and the major roads shown on the Index that Water Street is on FIRM Panel 4 of 4.

You can then check the title boxes of the individual FIRM panels to find Panel 4 of 4 (Figure 10).

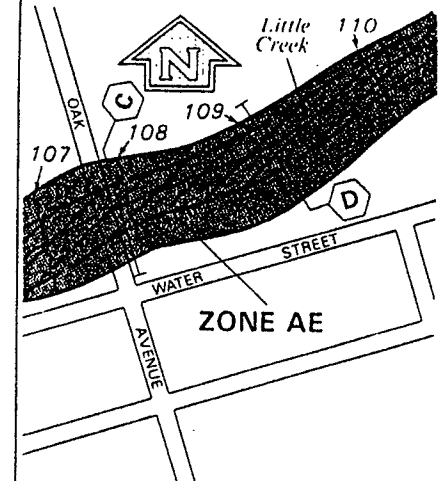


Figure 11

Step 2. Determine the General Location of the Property

Each FIRM panel shows more roads and physical landmarks than the FIRM Index does. This information enables you to find the property in question. You know the property is near the intersection of Oak Avenue and Water Street, and you can find that general area on the panel (Figure 11).

Only major roads and the roads in or near flood-prone areas are shown on the FIRM. Therefore, in determining the general location of the property, you may find it helpful to refer to another map, such as a city map, highway department map, or U.S. Geological Survey quadrangle, that shows additional roads and physical landmarks within the community.

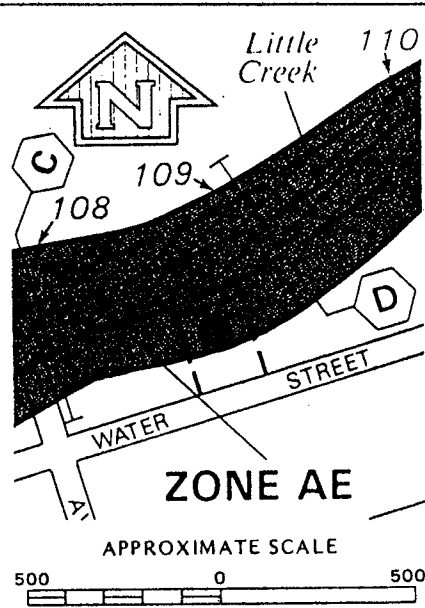


Figure 12

Step 3. Determine the Specific Location of the Property

To determine the specific property location, you will have to use the map scale. In addition, you may want to refer to a plat map, city tax assessor's map, or property description such as that usually provided in a deed.

You know the property lies on the north side of Water Street, east of the Oak Avenue-Water Street intersection. From the exact dimensions of the property provided on a tax assessor's map or plat map or in a legal description, you can determine the specific location of the property and building on the FIRM by converting the known dimensions to inches using the map scale and measuring on the FIRM panel. For example, at the map scale shown for Figure 12 (1 inch=500 feet), 250 feet on the ground equals ½ inch on the FIRM,

and 50 feet on the ground equals ⅓ inch on the FIRM.

You know the property line nearest Oak Avenue is 375 feet east of the centerline of Oak Avenue. At a map scale of 1 inch=500 feet, 375 feet equals ¾ inch on the FIRM. You know that the property is 156 feet wide and 188 feet deep; on the FIRM, those dimensions become approximately ⅓ inch by ⅓ inch. You can use the same method to determine the location of the building on the property.

Step 4. Determine the Flood Insurance Zone Designation for the Property

As shown in Figure 12, the property is partially within the dark-tinted area (the SFHA) and the building on the property is within the SFHA.

You can now determine the flood insurance zone designation for the property by finding the zone label. As shown in Figure 13, the SFHA in the vicinity of the property is designated as Zone AE. (On other FIRMs, this SFHA may be designated as a numbered A zone, e.g., A1, A5, A12.) The zone designation applies to both the portion of the property within the SFHA and any building on that portion.

Occasionally, when a property or building is close to the edge of the SFHA, you may find it difficult to determine whether or not the property or building is within the SFHA. The deciding factor in such instances is the elevation of the property or building compared to the BFE (see Step 5). In general, land areas where ground elevations are below the BFE are within the SFHA. When the elevations of the lowest floor of a building and the lowest grade adjacent to the building are

below the BFE, the building is within the SFHA.

In this example, the FIRM for Sampleville shows a floodway for Little Creek. As shown in Figure 13, neither the property nor the building is within the floodway.

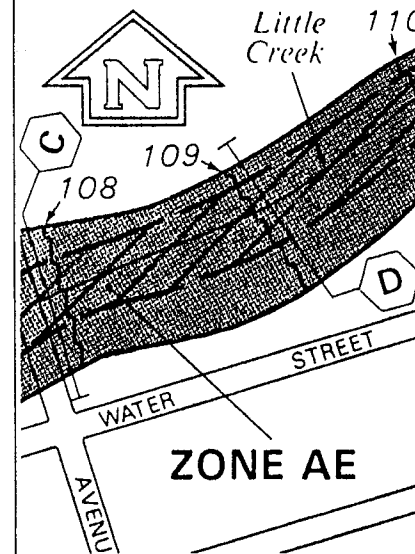


Figure 13

Step 5. Determine the BFE at the Property

To determine the BFE, start by finding the BFE lines (the numbered wavy lines) shown near the property on the FIRM. As shown in Figure 14, BFE lines 108 and 109 are near the property, and 109 is the nearer of the two. When a property is between two BFE lines, such as in Figure 14, you can determine the BFE at the property by interpolating between the two BFEs that are shown.

To interpolate, you assume the rate at which the BFE changes from 108 to

109 is constant. Therefore, for example, at the point halfway between 108 and 109, the BFE would be 108.5. In Figure 14, the property is approximately six-tenths the distance from 108 to 109; therefore, the BFE at the property would be approximately 108.6. The same principle applies regardless of whether the difference between the two known BFEs is one foot, as shown, or more than one foot.

For riverine flooding sources, such as Little Creek in the example, you can also determine the BFE from the Flood Profiles in the FIS report.

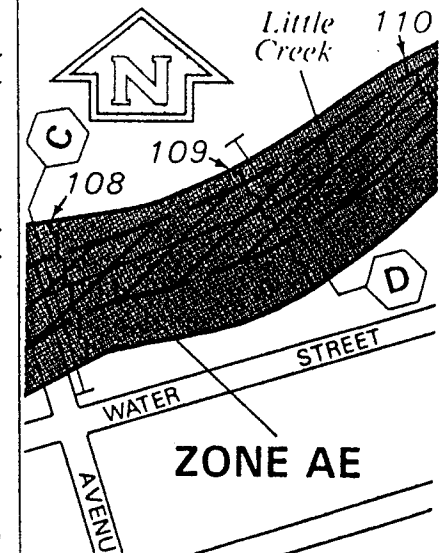


Figure 14

The example illustrated in Figure 14 is a riverine floodplain. In lacustrine (lake) and coastal floodplains, the wavy BFE line is not used. Instead, the SFHA is divided into areas within which the BFE is uniform. Each area is identified with a

whole-foot BFE label that applies to the entire area. You can determine the BFE easily, without interpolating, simply by identifying the area where your property is situated and finding the BFE label for that area.

In SFHAs designated as Zone A, no BFEs are shown. For help in determining an approximate BFE within such SFHAs, you should consult community officials, such as city engineers or city planners, or you may contact the FEMA Regional Office for your state (see Appendix C).

APPENDIX A

HOW TO OBTAIN A FIRM

Copies of effective FIRMs are made available by FEMA, and a nominal cost may be charged. To obtain a copy of the current FIRM for a specific community, you may write to the Flood Map Distribution Center (FMDC) at the following address:

Federal Emergency Management Agency
Flood Map Distribution Center
6930 (A-F) San Tomas Road
Baltimore, Maryland 21227-6227

You may also call the FMDC directly, at
1 (800) 333-1363.

Before you contact the FMDC, you should review the current FIRM on file at the local community map repository and obtain the following information:

1. Full name of the community shown on the FIRM (including city, town, village, etc.; county; and state) and
- 2a. For a **Flat FIRM** the NFIP community identification number, appearing in the title box of the FIRM Index, or
- b. For a **non-countywide Z-Fold FIRM** the community-panel number that appears in the title box of each panel covering the portion of the community in which you are interested, or
- c. For a **countywide FIRM** the map number that appears in the title box of

each panel covering the portion of the community in which you are interested. Generally, for multiple-panel FIRMs, the FMDC will provide copies of specific panels rather than a copy of the entire FIRM.

Before you order FIRM panels, you should also be aware of the following:

- The portion of the community in which you are interested may be covered by a panel that is not printed. If so, a note on the FIRM Index will explain why the panel is not printed. The most common reason a panel is not printed is that it covers an area entirely within one insurance zone (usually Zone C or Zone X).
- The area in which you are interested may not be within the community whose FIRM you are reviewing. A post office address for a property may include the name of a nearby incorporated community even though the property is actually in the unincorporated area of the surrounding county. You may therefore find it necessary to review the FIRM for the county, which is available at the county map repository.
- Also, areas recently annexed by a community may not appear on the FIRM for that community. To obtain flooding information for those areas, you should obtain the FIRM for the community from which the areas were annexed.

Once you have obtained Items 1 and 2, you can contact the FMDC and order the panels you need.

If you cannot find a copy of the current FIRM and therefore cannot identify the FIRM panel you need, you may request that the FMDC provide you with a copy of the FIRM Index. You can use the Index as described in the preceding section to identify the panel you need.

APPENDIX B

GLOSSARY

Actuarial Insurance Premiums

Premiums based on the calculated magnitudes of flood risk to which specific properties are subject.

Base Flood

The flood having a one-percent probability of being equaled or exceeded in any given year; also referred to as the 100-year flood.

Base Flood Elevation (BFE)

The height of the base flood in relation to the National Geodetic Vertical Datum of 1929 (or other datum where specified).

Effective FIRM

Latest FIRM issued by FEMA, which is in effect as of the date shown in the title box of the FIRM as "Effective Date," "Revised," or "Map Revised."

Encroachment

Construction, placement of fill, or similar alteration of topography in the floodplain that reduces the area available to convey floodwaters.

Extraterritorial Jurisdiction

Authority of a community to establish land use zones and issue building permits in areas outside its corporate limits.

Flood Boundary and Floodway Map (FBFM)

Floodplain management map issued by FEMA that depicts, based on detailed analyses, the boundaries of the 100-year and 500-year floods and the 100-year floodway.

Flood Hazard Area/Floodplain/Flood-prone Area

Land area subject to inundation by water from any flooding source.

Flood Hazard Boundary Map (FHBM)

Initial insurance map issued by FEMA that identifies, based on approximate analyses, areas of 100-year flood hazard within a community.

Flood Insurance Rate Map (FIRM)

Insurance and floodplain management map issued by FEMA that identifies, based on detailed or approximate analyses, areas of 100-year flood hazard in a community. Also shown on the FIRM are actuarial insurance rate zones. In areas studied by detailed analyses, the FIRM also shows BFEs and 500-year floodplain boundaries and, occasionally, floodway boundaries.

Flood Insurance Study (FIS)

Engineering study performed by FEMA to identify flood-prone areas, insurance risk zones, and other flood data within a community.

Floodplain Management

The operation of a program of corrective and preventive measures for reducing flood damage, including, but not limited to, emergency preparedness plans, flood control works, and floodplain management regulations.

Floodplain Management Regulations

Zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances,

and other applications of police power.

Interpolation

The process by which an unknown value that lies between two known values may be calculated; in the determination of BFEs, the map user applies this process by assuming a constant rate of change between two BFEs shown on the FIRM and estimating the BFE for an intervening point based on the distance between it and one of the two known BFEs.

Lacustrine Flood Hazard Area

Area subject to inundation by flooding from lakes or ponds.

Map Repository

Community office that stores reference copies of the FIRM and FIS report and makes those copies available for review by community residents and other interested parties.

National Flood Insurance Program (NFIP)

Federal program under which flood-prone areas are identified and flood insurance is made available to the owners of property in participating communities.

National Geodetic Vertical Datum of 1929 (NGVD)

Standard reference plain from which elevations are measured.

Regulatory Floodway

Channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the BFE more than a specified amount.

Riverine Flood Hazard Area

Area subject to inundation by flooding from streams such as rivers and creeks.

Water-Surface Elevation

The height, in relation to NGVD (or other datum where specified), of floods of various magnitudes and frequencies in coastal, lacustrine (lake), and riverine flood hazard areas.

APPENDIX C

FEMA REGIONAL OFFICES

REGION I CT, ME, MA, NH, RI, VT

J.W. McCormack Post Office and
Courthouse Building
Room 462
Boston, Massachusetts 02109

Telephone No. (617) 223-9540

REGION II NJ, NY, PR, VI

26 Federal Plaza
New York, New York 10278

Telephone No. (212) 264-8980

REGION III DE, DC, MD, PA, VA, WV

Liberty Square Building
105 South 7th Street
2nd Floor
Philadelphia, Pennsylvania 19106

Telephone No. (215) 597-9416

REGION IV AL, FL, GA, KY, MS, NC, SC, TN

Gulf Oil Building
1371 Peachtree Street, NE.
Suite 736
Atlanta, Georgia 30309

Telephone No. (404) 853-4444

REGION V IL, IN, MI, MN, OH, WI

175 West Jackson Boulevard
4th Floor
Chicago, Illinois 60604

Telephone No. (312) 408-5500

REGION VI AR, LA, NM, OK, TX

Federal Regional Center
800 North Loop 288
Room 206
Denton, Texas 76201-3698

Telephone No. (817) 898-9399

REGION VII IA, KS, MO, NE

Old Federal Office Building
911 Walnut Street
Room 300
Kansas City, Missouri 64106

Telephone No. (816) 283-7002

REGION VIII CO, MT, ND, SD, UT, WY

Denver Federal Center Building 710
Box 25267
Denver, Colorado 80225-0267

Telephone No. (303) 235-4811

REGION IX AZ, CA, HI, NV

Federal Regional Center Building
105 Presidio of San Francisco
San Francisco, California 94129

Telephone No. (415) 923-7100

REGION X AK, ID, OR, WA

Federal Regional Center 130
228th Street, SW.
Bothell, Washington 98021-9796

Telephone No. (206) 481-8800