SECTION 6: USING STUDIES AND MAPS

Contents

This section covers how to use the materials introduced in sections 4 and 5:

- How to find and use the data provided in a Flood Insurance Study
- How to find a site on a flood map
- How to obtain flood elevations from a profile
- How to locate a floodway on a site

6.1. USING FIS REPORTS

The majority of Flood Insurance Study (FIS) reports use the same outline and numbering system. This section highlights the report's contents, explore the report's data, tables and profiles, and describe how they are related to the FIRM and Floodway Map.

The most important reason for using a FIS and flood map is to determine whether or not a site is located in a Special Flood Hazard Area (SFHA) and/or a floodway and to determine the Base Flood Elevation (BFE).

> Important: Because the elevation determinations for riverine floodplains are typically used to establish flood elevations for construction in SFHAs and other purposes, accuracy is critical. The floodplain administrator should have another person double check his/her determination before using them in the permit application process.

6.1.1. FIS report contents

The Pontiac FIS cover has an outline map of Illinois (see Figure 6.1). Note that the location of the county and community are pinpointed on the outline map. The date of the FIS and the community identification number are also indicated on the cover.

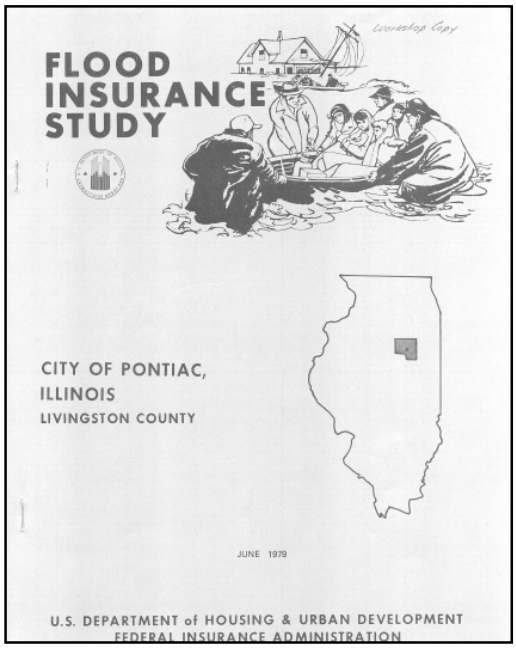

Figure 6-1: FIS Cover

A brief description of the Pontiac FIS contents is given below. It should be noted that for newer FIS reports, the *Guidelines and Specifications for Flood Hazard Mapping Partners* should be used.

Section 1 of all older FIS reports states the purpose of the FIS, authority of and acknowledgments by its authors, and coordination steps taken during the preparation of the study.

Section 2 provides background information on the community, its flood problems, which areas were studied and what flood protection measures are in effect.

Section 3 discusses the engineering methods used. Section 3.1 covers the hydrologic analysis — how much water will flow through the floodplain during peak floods. Section 3.2 describes the hydraulic analysis — how high the water will get. Development of this information was described in Section 4 of this desk reference.

Section 4 in the FIS text discusses how the flood map was prepared from flood data for floodplain management applications. Section 4.1 covers mapping the floodplain boundaries — where the water will go. If the study included a floodway determination, Section 4.2 describes the floodway study and mapping. Section 4 also includes the floodway data table. How to interpret and use these and other data is covered later in this section.

Section 5 covers data related to flood insurance, some of which a floodplain administrator will not need to use. This section can be a useful reference, as it describes the flood insurance zones identified on the map.

Completing the FIS report are three self-explanatory sections: Section 6, Other Studies, Section 7, Location of Data, and Section 8, Bibliography and References. Newer FIS reports have a section on the FIRM.

Most riverine FIS reports include flood profiles as an exhibit at the end of the document. Pontiac's FIS report has the profile for the Vermilion River on two pages, 01P and 02P.

6.1.2. Countywide FIS report contents

New studies are produced in the Countywide Format to present a unified study of flood hazards across community boundaries within a county (sample cover shown in Figure 6-2). The FIS generally follows the sample report format provided in Figure 6-3; however, several changes are made to the standard wording and tables. These typically provide references to superseded reports.

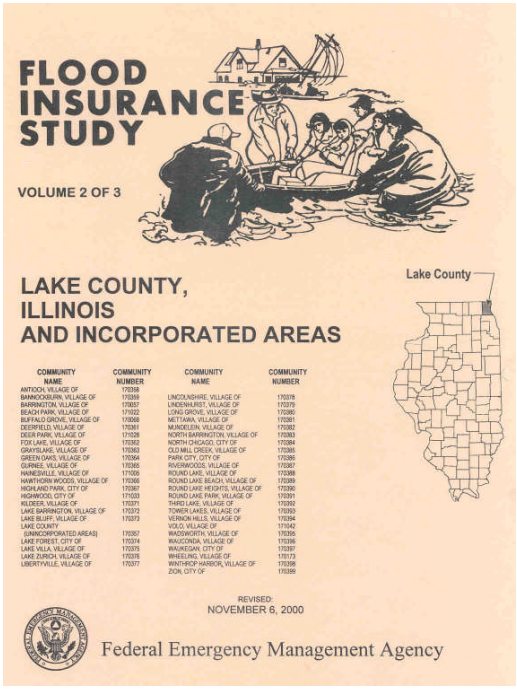

Figure 6-2: Countywide FIS Cover

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Figure 6-3: Sample FIS table of contents taken from: *Guidelines and Specifications for Flood Hazard Mapping Partners* [April 2003]

6.1.3. Flood discharges

Turn to Table 1, *Summary of Discharges*, in the Pontiac FIS report Section 3 on page 7. An excerpt from that table is shown below (Figure 6-4*)*.

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. Miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
VERMILION RIVER					
At the Pontiac, Illinois gage	568	9,900	14,200	16,000	20,000
At the downstream Pontiac corporate limits	586	10,400	14,800	16,500	20,900
At Lowell, Illinois	1,230	22,500	33,000	37,400	47,500

Figure 6-4: Pontiac, Illinois, FIS Table 1 - Summary of Discharges

Table 1 summarizes the peak amount of water discharge for various flood frequencies at locations within the study area. The hydrologic study procedures for arriving at these amounts were discussed in Section 4 of this desk reference. The sizes of the drainage areas (watersheds) contributing to the water runoff producing the floods are also shown in the table.

The 100-year flood discharge for the Vermilion River at the Pontiac gage is 16,000 cubic feet per second (cfs). This means that during the peak of the base or 100-year flood 16,000 cubic feet of water will pass this point each second.

Those administering the local ordinance may never have a need for these data. They are, however, important in making subsequent calculations of flood elevations as part of the hydraulic engineering study.

6.1.4. Floodway data table

The floodway data table in Section 4 of the FIS report presents data from the hydraulic analysis (Table 2, page 11 in the report). The first part of this table is reproduced below (Figure 6-5).

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION		
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	WITH FLOODWAY (NGVD)	WITHOUT FLOODWAY (NGVD)	DIFFERENCE (FT.)
Vermilion River							
A	4,435	343	4,820	3.4	634.5	634.4	0.1
B	8,310	260	3,001	5.5	636.3	636.3	0.0
C	8,485	425	2,998	5.5	636.6	636.6	0.0
D	9,810	417	2,892	5.7	637.8	637.7	0.1
E	10,055	237	2,871	5.7	638.3	638.3	0.0
F	10,225	190	2,490	6.6	638.7	638.7	0.0
G	10,525	498	5,688	2.9	639.4	639.3	0.1
H	12,155	356	5,168	3.1	640.1	640.0	0.1
I	12,610	182	3,581	4.5	640.1	640.1	0.0
J	12,900	633	6,056	2.6	640.7	640.6	0.1

Figure 6-5: Pontiac, Illinois, FIS Table 2 - Floodway Data

To interpret the floodway data table, follow these steps:

All numbers in the table are calculated at each floodplain cross section. The first two columns under “Flooding Source” identify the cross sections used in the FIS and their distance from some reference point, usually the mouth of a river or the point where a stream reaches a river or other stream. The footnotes at the bottom of the floodway data table identify this reference point.

In Pontiac’s case, the starting point is the corporate limits at Airport Road, downstream from cross section A. The locations of the cross sections are shown on Pontiac’s Floodway Map (cross section A is not shown on the excerpt in Section 23). Cross section B of the Vermilion River (see the Floodway Map on page 23-5) is 8,310 feet above (or upstream) of Airport Road. Cross

section B can be found on the Floodway Map. It is the line that crosses the Vermilion River at Route 66 and has the letter "B" in a hexagon at each end.

Cross section C is 8,485 feet above the reference point. It is on the other side of Route 66. It is (8,485 – 8,310 = 175) 175 feet upstream from cross section B.

Remember that a floodway's width usually is not symmetrical; it varies with the topography at each cross section. The next three columns ("Floodway") provide data at each cross section. At cross section B, on the Vermilion River, the floodway is 260 feet wide. That means from the floodway boundary on one side of the stream of this cross section to the floodway boundary on the other side of the stream is 260 feet. This is useful for double-checking the width of the floodway portrayed on the FIRM or Floodway Map.

Figure 6-6 is a representation of the description of cross section B given in the Floodway Data Table.

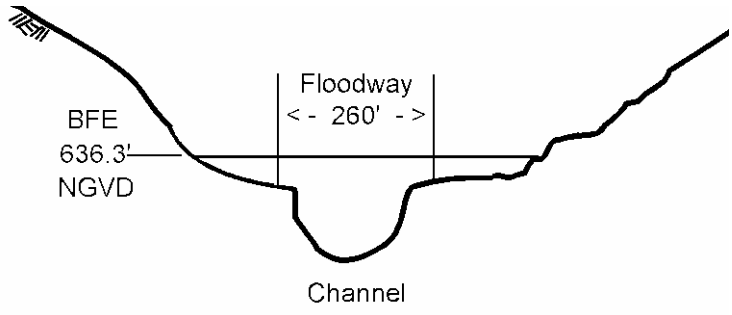


Figure 6-6: Representation of cross section B of the Vermilion River

The area of the floodway here is 3,001 square feet. This is the cross sectional area of the floodway below the elevation of the base flood at this location. The average or mean velocity of the base flood in the floodway is 5.5 feet per second.

Similar data are provided at each of the other cross sections. Looking down the mean velocity column, one can see that velocity is highest at cross section F and lowest at cross section N. Looking at the flood profile for the Vermilion River, one can see that the river is steepest at cross section F (as it pours over the railroad bridge) so it will be fastest here. The river is very flat at cross section N where the velocity is lowest.

Of the last three columns under "Base Flood Water Surface Elevation," the floodplain administrator should be concerned only with the second one, "Without floodway." This states the regulatory flood elevation, which is calculated before the fringe is filled ("with floodway"). The other columns tell engineers what happened to the water surface elevation when the floodway

study was run through the computer model. Notice that, in accordance with Illinois State standards, there is no increase of more than 0.1 foot at any cross section.

In newer Flood Insurance Studies, there are four columns under "Base Flood Water Surface Elevation." The first one is entitled "Regulatory." If the Floodway Data Table exists, then the numbers in the "Regulatory" column should be used for regulatory flood elevations.

6.1.5. Relating report data to maps and profiles

Section 4 described the data that are developed and used in preparing an FIS for a community. Each set of data is used for calculations needed to produce additional data for the FIS.

The data contained in the FIS report are consistent with those found on the accompanying profiles and FIRM. For example, the base flood water surface elevations at each identified cross section can be found in the floodway data table, read from the flood profiles and interpolated from the FIRM. Within the limits of map accuracy, the floodplain administrator should obtain the same answer regardless which source was used.

In the same way, the distances between cross sections, or their distance from some reference, can be found using any or all of the above data sources. Again, the answers should be about the same.

The elevations of the computed profiles contained in the FIS report are used with ground elevation data to determine the limits of the various zones shown on the FIRM. Again, flood elevations can be determined at any location along the studied stream using either the flood profiles or the FIRM. All the data fit one another. If obvious mistakes are found, please advise the FEMA Regional Office.

Note: Due to the limited detail and large scale of the base maps used for most FIRMs, the study contractor must interpolate between contour lines when mapping the floodplain boundaries. This is why discrepancies may be found when actual ground elevations are surveyed: the maps are just the best available graphic representations of the BFEs.

Here's the order of precedence for identifying the BFE at a particular location:

- The most accurate BFEs are found in the Floodway Data Table for a riverine floodplain and the Summary of Stillwater Elevations table for a lake. These BFEs are listed to 0.1 foot. However, the Floodway Data Table is only good for sites on or next to a cross section.
- The next most accurate source of elevation data is the profile. This is a plot of the cross section data but, at the cross sections, it is not as accurate as the numbers in the Floodway Data Table.
- The least accurate source of elevation data for a riverine floodplain is the FIRM. BFEs are rounded to the nearest whole foot. However, the FIRM is the only source of base flood elevations for AO and AH Zones.

BFEs take precedence if there is a dispute between the BFE and the boundaries of the SFHA shown on the maps. A local floodplain administrator can make decisions based on the most accurate source of data.

> It must be noted that banks (and others who must read the FIRM to determine if flood insurance is required) must go by the map. They cannot make on-site interpretations based on data other than the FIRM. However, they may recommend that the property owner submit a letter of map revision or map amendment so the map can be officially changed to reflect the more accurate data (see Section 7).

Again, only FEMA can amend or correct the maps. Discrepancies should be brought to FEMA's attention through a request for a map change, such as a Letter of Map Amendment (LOMA) (see Section 7).

Reading and using flood profiles, the last set of data contained in a Flood Insurance Study report, is covered later in this section.

6.2. USING FLOOD MAPS

6.2.1. Locating a site

How easily a site can be located on an NFIP map will depend on the floodplain administrator's familiarity with properties in the community and with the scale of the flood maps.

To locate a site, follow these steps. Remember to check the north arrow. The top of the map is not always north.

The steps for a site in Pontiac are shown in italics. The general location of the sites are shown on the Pontiac Street Map. Site G is on the northwest corner of River and Vermilion Streets.

1. If the community has more than one map panel, use the map index to determine which panel to use. Use map landmarks —highways, streets, or streams —to find the site on the index.

   Pontiac has no separate Map Index because all of its floodplains fit on one panel. An example of a Map Index is in Figure 5-1.

2. Find the map panel for the area containing the site. Be sure the map panel is the most recent one — compare its suffix letter with the suffix letter for that panel on the current map index. Remember, in many communities, panels will have different effective dates due to revisions that do not affect the whole community.

   If there is an asterisk on the panel number, either no flood hazard has been identified in that area or it is entirely one flood zone and the panel was not printed.

3. Locate the site as accurately as possible. Use a detailed street or road map as well as the tax appraiser's plat map to identify the property boundaries, if necessary.

   Site G is on the northwest corner of River and Vermilion Streets. Looking at the FIRM, all properties north of River Street are in the SFHA, Zone A8. Therefore, site G is in the floodplain.

4. For situations near the floodplain boundary, one may have to obtain the distance on the ground between the site and one or more identifiable points, such as the centerline of a road or street, a bridge, or some other feature on the map. Locate these points on the flood map.

   Site H is on Vermilion Street, four houses south of River Street. Each lot in this area is 60' wide and the River Street right of way is 50' wide. The lot of interest is the fourth one in, so it is three lots (180 feet)and half of the right of way width (25 feet), giving a total distance of 205 feet when measured from the center of River Street.

5. Convert the distances to the map scale and plot the site on the map.

Pontiac's FIRM has a scale of 1 inch = 600 feet. This means the "60" scale on the engineer's scale should be used.

Measure 205 feet along Vermilion Street south from the River Street right of way center line. In this example, Site H is outside of the SFHA for the Vermilion River.

Now try this exercise using the Pontiac street map (page 23-7) and FIRM (page 23-3). The street map's scale is 1 inch = 1,000 feet. Use the "10" scale.

Site F is on Washington street which has been extended into the floodplain since the FIRM was prepared. Site F is on the north side of the street, where the "o" in "Washington" is on the street map on page 23-7. Using the "10" scale, how far is Site F west of Route 116 (Ladd Street)? (Answer in Section 25.2.6).

Using the "60" scale, measure this distance on the FIRM from Route 116. That will locate Site F on the FIRM. Is it in or out of the floodplain? (Answer in Section 25.2.6).

Note: *On the street map on page 23-7 and on some FIRMs, streets are shown as single lines (see Figure 5-10). In these cases, the line represents the centerline of the street. Therefore, ground measurements should be taken from the center of the street.*

The floodplain administrator may be called on by a bank or lender to determine if a property is in or out of the SFHA. Communities should be aware that lenders are legally responsible for determining if a flood insurance policy is required for a loan.

Under the National Flood Insurance Reform Act, if someone other than a lender provides map information to decide if a flood insurance policy is required for a loan, the information must be guaranteed. This information is usually provided on FEMA's Standard Flood Hazard Determination Form which can be downloaded from FEMA's website. If asked to sign such a form, the floodplain administrator is guaranteeing the accuracy of the determination so they may assume some liability for their action.

6.2.2. Determining mileage (stationing)

In order to identify the BFE at a development site, the stream mileage — or stationing — for the site must be determined. The stationing of a site will allow us to read the flood profiles.

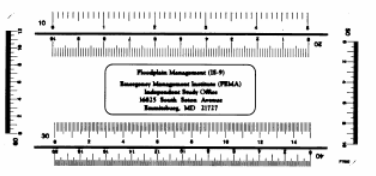
1. Locate the site on the Floodway Map or the newer version of the FIRM that shows cross sections. Identify which labeled cross sections are nearest to the site, both upstream and downstream.

   The site of interest, Site E, is on Oakwood Drive, 500 feet west of the dam that is just west of Route 116. Follow the steps in the previous discussion to locate this site on the Pontiac Floodway Map. It is between cross sections C and D.

2. Check the map scale used for the panel. The scale is in the map legend or key.

   For both Pontiac flood maps, the map scale is 1 inch = 600 feet.

3. Use an engineer's scale to measure the distance from the site to the nearest cross section, *following all bends and curves*. Measure the distances to both cross sections to check accuracy and use proportional lengths if distances do not agree.



   Cross section D is the dam, so Site E is 500 feet west (downstream) of cross section D. This site is 750 feet upstream (east) of cross section C.

4. If the X axis on the profile is in feet, convert these distances to miles by dividing by 5,280. When converting to miles, we lose a little accuracy.

This approach will also work by measuring from another point that shows up on the profile, such as a bridge or confluence with another stream.

6.2.3. Base Flood Elevations from maps

BFEs are shown on the FIRMs as whole numbers. For A1-30 and AE Zones for lake floodplains, use the BFE printed in parentheses below the flood zone designation. *No interpolation is necessary.* The same holds true for AH Zones with whole number base flood elevations (see Figure 5-14).

For other numbered A Zones and AE Zones, read the BFE from the nearest wavy "base flood elevation line." Refer to the map legend or key if the line markings are uncertain.

For our Site E example, the BFE from the FIRM is between 637 and 638 feet. For our Site G example, the site is right at the "639" wavy line along Vermilion Street. However, there's another "639" wavy line one block west. Since water flows downhill, at least one of those lines is not accurate to 0.1 foot.

There are no base flood elevations in AO Zones with base flood depths. Instead, the equivalent flood protection level is the number of feet shown in parentheses after the "Zone AO." This is not an elevation above sea level, it is the depth of flooding measured above ground level.

6.2.4. Locating the floodway boundary

If the site is at a surveyed cross section, floodway width data from the floodway data table may be used as a more accurate measure than field and map measurements. Remember that the width listed in the table is the distance from the floodway boundary on one side of the stream to the floodway boundary on the other side of the stream.

If the floodway width measured on the map at that site is at a cross section, the map should be used because it is the floodway officially adopted by the community. If there is a significant difference between the map width at the site and the closest cross section width in the Floodway Data Table, contact IDNR/OWR or the FEMA Regional Office for an interpretation.

Most sites won't fall conveniently on a cross section, so here are the steps using the map:

1. Locate the site on the map and select the correct engineer's scale for the map scale.

   Locate Site J on the east side of Main Street, south of Grove Street. The correct scale for Pontiac's 1" = 600' map is the "60" scale.

2. Using the engineer's scale, measure the distance from the floodway boundary to a nearby feature on the ground. For streets, use either the right of way or the center of the street, just use the same approach on the map and on the ground.

   The floodway boundary at Main Street is approximately 110 feet south of the center of Grove Street (see Figure 6-7).

3. Run the same measurement on the ground to locate the floodway boundary at the site.
4. If any portion of the building site, proposed grading, fill, bridge, or other obstruction is determined to be within the floodway, then the floodway provisions of the ordinance also apply.

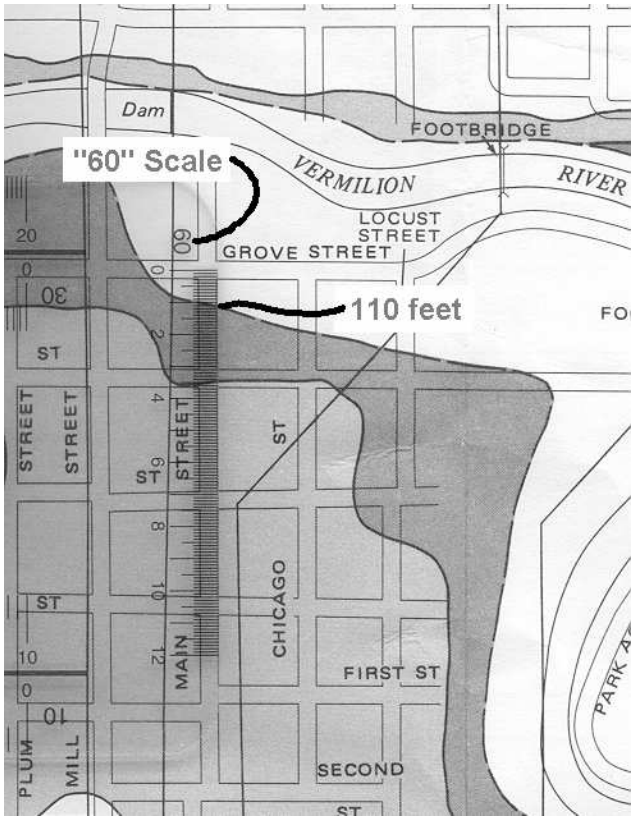


Figure 6-7: Using the map scale to locate the floodway boundary

6.3. USING PROFILES

As discussed in Section 4, a flood profile is a graph of computed flood elevations at the floodplain cross sections. It can be used to determine elevations of floods of various frequencies at any location along the studied stream.

A profile also contains other useful information, such as location data for bridges, stream beds, stream crossings, and cross sections.

6.3.1. Profile features

Four flood levels are typically shown on the flood profile fold-out sheets at the back of the FIS report: the 10-, 50-, 100- and 500-year floods (i.e., the 10%, 2%, 1% (base), and 0.2% floods).

Only the 100-year or base flood is used for compliance with NFIP standards. The 500-year is often used as the protection level for critical facilities. The others are useful for other floodplain management applications, such as septic system design and location, bridge and culvert design, and urban stormwater management.

In addition to the flood elevation lines, FIS profiles sheets contain:

- a plot of the stream bed,
- the locations of the cross sections used in the FIS and shown on the Floodway Map (a letter within a hexagon),
- the location of dams, and
- the location of bridges, roads and other stream crossings. These are usually depicted as a large "I" with the bottom of the "I" representing the elevation of the bottom or "low beam" of the crossing.

The data are plotted on a grid to facilitate their interpretation. With few exceptions, the large grid squares are one inch on each side and are divided into 10 squares in both directions. This greatly aids in making measurements.

Refer to the profile for the Vermilion River, "01P" at the back of the Pontiac FIS report. The bottom or X-axis shows the distance along the river. To be consistent with other data in the FIS report, distance is usually measured in feet upstream of the mouth of the river or its confluence with another river.

In Pontiac's case, the starting point is the downstream corporate limits at Airport Road. For this profile, each large square is 1,000 feet and each little square is 100 feet. In some profiles, the distances are measured in miles and tenths of a mile.

The left side or Y-axis shows elevation in feet NGVD. Each large square represents ten feet and each small square is 1 foot. Again, profiles in other FIS may have a different scale.

6.3.2. Determining base flood elevations

There are three ways to find the base flood elevation. Of the three described below, using the floodway data tables in the FIS report is the most accurate and using the FIRM is the least accurate.

Floodway Data Table: If the site is at or very close to a cross section, use the information in the Floodway Data Table. The Floodway Data Table is discussed in Section 6.1.4.

Site A is on the northeast corner of Green and N. First Streets. It is located on cross section I on the Flood Boundary and Floodway Map.

The Floodway Data Table is on the page "Table 2," located after page 8 in the Flood Insurance Study. It shows that the regulatory base flood elevation for cross section I is 713.2 NGVD.

Profiles: Here are the steps to determine the BFE for a site using the flood profiles in the FIS report:

1. Using the Floodway Map (or new FIRM), locate features near the site that appear on the profile, such as a bridge or cross section.

   We'll work with Site E on Oakwood Drive, 500 feet west of the dam that is just west of Route 116. It is between cross sections C and D.

2. Follow the stationing procedures described in the previous section to determine the site's distance (in stream miles) from a cross section or other feature that appears on the profile.

   Cross section D is the dam, so Site E is 500 feet west (downstream) of cross section D. This site is 750 feet upstream (east) of cross section C.

3. Find the feature(s) on the flood profile for that stream.

   Cross sections C and D and the dam at cross section D are readily found on profile page 01P.

4. Check the scale used for the profile and using the engineer's scale, measure the distance from the feature(s) to the site.

   The "10" scale on the engineer's scale or couning square can be useds. At this scale, each little square is 100 feet. Site E is 5 little squares downstream (left) of cross section D and 7½ little squares upstream (left) of cross section C.

   These two measurements should meet, but they are about 75 feet apart (.75 of a square). The reason for this is explained in Section 25.2.6, questions 12 and 13. Split the difference to locate the site on the profile.

5. Find the site's location on the appropriate flood profile line and read the elevation on the Y axis by draw a straight line to the left or right edge of the graph, counting squares, or using the engineer's scale. Remember to use a different scale if the scale on the Y axis is different than the scale for the X axis.

Read the BFE from the 100-year flood line, the second line from the top. For site E, it is 637.4. Note how this produces a more accurate number than interpolating between the two wavy lines on the FIRM. Instead of guessing that it is between 637 and 638, we can tell that it is 637.4.

Check the 10-, 50-, and 500- year elevations and see if: 634.5, 636.5, and 639.0 respectively are obtained.

6. A surveyor can establish the flood elevation at the site so the owner or builder will know how high the base flood elevation is predicted to be.

   A surveyor can either shoot 637.4 feet at the site or shoot any elevation and tell the owner how high the base flood is in relation to the mark.

FIRM: The third way to determine the base flood elevation is on the FIRM. The wavy lines represent approximate 100-year flood elevations. This approach should only be used to verify that a one foot or ten foot error was not made when reading the profile.

Site D is located south of College Street, between the 713 and 714 wavy elevation lines. This tells that Site D is probably less than 714, but it is not known by how much. One might think that since Site D is so close to the 714 line, that the elevation would be 713.8 or 713.9. However, by reading the profile we found that it is 713.4. Look at the profile and note that there is a drop in the 100-year flood elevation at College Street: the bridge acts as a dam so that on the upstream side, the 100-year flood elevation is ½ foot higher than on the downstream side.

Other types of floodplains: In coastal floodplains, AH Zones, and other areas where the BFE is listed in parentheses below the zone designation on the FIRM, use that elevation. There is no profile for these zones. Except for lake floodplains with stillwater elevation tables to 0.1 foot in the FIS, the FIRM is the most accurate source for BFEs.

6.3.3. Relating flood elevations to the ground

If the site is clearly outside the boundary of the base floodplain, as with RM 6, no floodplain regulations apply unless the site adjoins, or is connected to, the SFHA and surveyed ground elevations are *below* BFE.

If it cannot be determined whether the site is in or out of the floodplain, then additional information and/or investigation will be needed. In this instance, ground elevation and lowest floor elevations of any structures will be needed for the site, so the applicant will have to hire a surveyor.

If the survey finds that the site is on ground higher than the base flood elevation, the owner may want to apply for a Letter of Map Amendment or Map Revision to officially show the property is out of the SFHA (see Section 7) or flood insurance will still be required.

A field visit by the local administrator or designee and measurements on the ground may also be required. The actual site elevations are compared to the base flood elevation, read from the FIS flood profiles, for that location.

If the site elevations are above the BFE, the site is outside the floodplain and the applicant should be advised about the map amendment/revision process (see Section 7). If they are lower, it is within the floodplain and subject to the provisions of the ordinance.

It must be noted that banks (and others who must read the FIRM to determine if flood insurance is required) must go by the map. They cannot make on-site interpretations based on data other than the FIRM. However, they may recommend that the property owner submit a letter of map revision or map amendment so the map can be officially changed to reflect the more accurate data (see Section 7).

6.3.4. Relating profiles to maps

Elevation data shown on the flood profiles are directly related to the BFEs shown on the FIRM. Within the limits of map accuracy, the same elevation should be obtained whether the map or profile was used.

However, the flood profiles should always be used to determine flood elevations along rivers and streams.

If obvious mistakes or discrepancies are found between the tables, profiles, and FIRM, IDNR/OWR or the FEMA Regional Office should be notified.

From reading the FIRM in the previous section of this section, we knew that the BFE for Site E should be between 637 and 638 feet. From reading the profile in this section of this section, we determined the BFE to be 637.4 feet.

These computations show that the FIRM and the FIS report profile are consistent and provide a double check of the determination.