

# National Flood Hazard Layer (NFHL)

## New Products and Services for FEMA's Flood Hazard Map Data

### What is the NFHL?

The NFHL is a computer database that contains the flood hazard map information from FEMA's Flood Map Modernization program. These map data are from Digital Flood Insurance Rate Map (DFIRM) databases and Letters of Map Revision (LOMRs).

### How does the NFHL benefit me?

Benefits of the NFHL include:

- **Convenience:** The NFHL data provide DFIRM and LOMR data as one integrated dataset. You no longer need to obtain individual DFIRM databases or Flood Insurance Rate Map (FIRM) panels and then locate and integrate the subsequent changes caused by LOMRs. (You still must review changes identified by property descriptions, such as Letters of Map Amendment (LOMAs) and Letters of Map Revision Based on Fill (LOMR-Fs).)
- **Completeness:** An NFHL dataset includes all the digital flood hazard data that are effective and available as of the dataset release date.
- **Flexibility:** Like FEMA's DFIRM database product, the NFHL Geographic Information System (GIS) data and web map services can be integrated with other map data, providing new options for using FEMA flood hazard information.

### Are NFHL data available for all of the U.S.?

No. As of January 2008, the NFHL included coverage for approximately a third of the U.S. population and 13 percent of the land area. By 2010, FEMA anticipates having coverage for 92 percent of the population and 65 percent of the land area.

If you need information for areas not covered by the NFHL, other FEMA flood hazard map products and services provide coverage for larger areas of the Nation. These products include FIRMs, FIRM Scans (digital images of the FIRMs), FIRMettes (portions of FIRM Scans) created with the FIRMette-Web or FIRMette-Desktop tools, and DFIRM databases.

### Where can I obtain NFHL flood hazard map products and services?

The NFHL and other flood hazard map products and services are available through the FEMA Map Service Center (MSC) at <http://msc.fema.gov>.

### What NFHL products and services are available?

The NFHL data are available in the following forms.

- **Mapviewer-Web:** Use Mapviewer-Web to view maps, look up attribute information, and create custom maps and reports from NFHL data over the web (see Figure 1). In the spring of 2008, the map viewer also will display locations affected by LOMAs and LOMR-Fs, and will provide access to determination documents. To use Mapviewer-Web you need a web browser (such as Microsoft Internet Explorer<sup>1</sup> or Mozilla Firefox<sup>1</sup>) and an Internet connection.

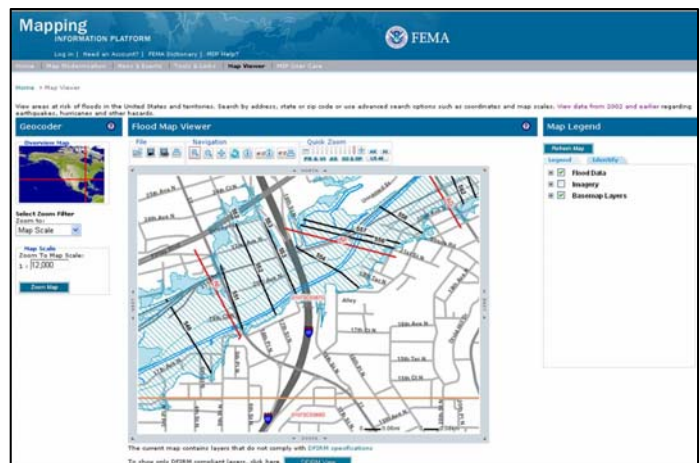


Figure 1. The Mapviewer-Web allows users to view maps, look up attribute information, and create custom maps and reports.

- **Utility files for viewing the NFHL data in Google Earth™<sup>1</sup>:** FEMA offers utility files (called "kmz" files) for viewing NFHL data in Google Earth (see Figure 2). This capability is simple to use and allows the viewing of basic map overlays. It does not provide access to all NFHL data or reports. To use this capability you need a high-speed Internet connection, Google Earth installed on your computer, and the kmz files.

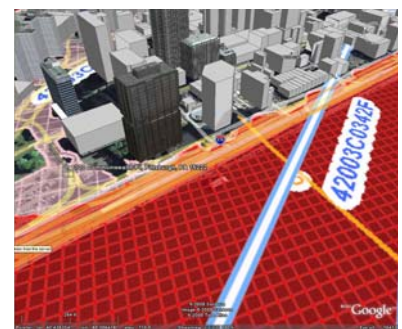


Figure 2. Flood hazard map layers created from NFHL data overlaid on imagery and 3-d buildings using Google Earth.

<sup>1</sup> Names of products are provided for descriptive purposes only and do not represent an endorsement by the United States Government.

- **Web map service (WMS):** Use WMS map layers to create custom map images from NFHL data (see Figure 3). These images can be overlaid on other map data. You also can look up attribute information from NFHL data. To use the WMS you need web-based mapping or GIS software that displays WMS images and a high-speed Internet connection. For some software, adding WMS images merely requires the entry of a URL. Other choices require you to create additional software.



Figure 3. WMS map overlay created from NFHL data.

- **NFHL GIS datasets:** Use these data to create maps and perform spatial analyses (see Figure 4). The data are organized on a State-by-State basis, made available in the ESRI™ 1 Shapefile format, and delivered on computer media. They do not include the orthophotos that accompany some DFIRM databases. To use these data you need GIS software that can read the Shapefile format. The data will be available this spring.

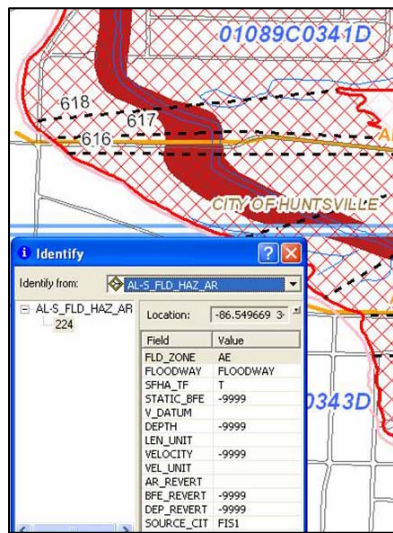


Figure 4. NFHL GIS map and attribute data viewed with GIS software.

### Which NFHL product or service is right for me?

Selecting the right product depends on the task you need to do and the capabilities available to you. If you only need to view flood hazard data, the Google Earth and Mapviewer-Web options are the most straightforward. If you need to combine flood hazard data with other information, the WMS (for visual comparisons) and NFHL GIS data (for more detailed analyses) are better choices, although they require more effort to use. Table 1 provides a summary of some options.

### How often is the NFHL database updated?

Starting in late spring 2008, the NFHL database will provide new DFIRM and LOMR data on their effective date. The Mapviewer-Web, map overlays viewable in Google Earth, and WMS images will show these updates immediately.

FEMA plans to provide new releases of the NFHL GIS data quarterly. Between these releases, the MSC makes available new FIRMs, FIRM Scans, FIRMettes, DFIRM databases, and LOMRs.

Table 1. Options for using FEMA flood hazard map products and services. NFHL products and services are highlighted in red.

		FEMA Products and Services		
		Map views	Web map service (WMS)	GIS data
I want to ..	View a flood hazard map	FIRM FIRM Scan FIRMette <b>Mapviewer-Web</b> <b>NFHL kmz files</b> <b>(Google Earth)</b>		
	Incorporate digital flood hazard maps into my software application	<i>(use digital scans of maps)</i> FIRM Scan	<i>(create custom digital maps from map layers)</i> <b>WMS map layers</b>	<i>(create custom digital maps from GIS data)</i> DFIRM database <b>NFHL GIS data</b>
	Use digital flood hazard map data in analyses			DFIRM database <b>NFHL GIS data</b>

### May I use FEMA's digital flood hazard data for official purposes?

Yes, assuming you comply with FEMA's "Use of Digital Flood Hazard Data" policy. The policy and related information are available at <http://www.fema.gov/library/viewRecord.do?id=3235>. In particular, please ensure that other maps used with the flood hazard data meet FEMA's standards for map information.<sup>2</sup>

### May I still use other FEMA flood map products and services?

Yes. FIRMs, FIRM Scans, FIRMettes, and DFIRM databases are available for your use. The NFHL products and services increase your options for using flood hazard data. All of these items are available through the MSC.

### Sources of Additional Information

National Flood Insurance Program information: See the FloodSmart web site at <http://www.floodsmart.gov>.

Flood hazard data and related maps: See the MSC web site at <http://msc.fema.gov>.

<sup>2</sup> A base map shows the location of roads and railroads, streams and lakes, boundaries, structures, and other features. When used with flood hazard data for official purposes, base maps must have a horizontal radial accuracy (Accuracy<sub>r</sub>) better than or equal to 38 feet (11.58 meters), as measured using the National Standard for Spatial Data Accuracy. (This measure is equal to maps of scales larger than or equal to 1:12,000 under the old National Map Accuracy Standard.) The base map also must provide a reasonably current representation of an area; a rule of thumb is that it be no more than 7 years old. Be sure that the flood hazard and base maps have the same horizontal and vertical datums.