

'Do Communities Dream of Electric Maps: FEMA's All Digital Vision'



FEMA



**ILLINOIS STATE
WATER SURVEY**
PRAIRIE RESEARCH INSTITUTE

**2012
Illinois Association for Floodplain and Stormwater
Management Conference**

March 15, 2012

Agenda

Introduction

Map Mod

Digital Products

Genesis of the tools

Advantages

Accessing the tools

Digital Tools

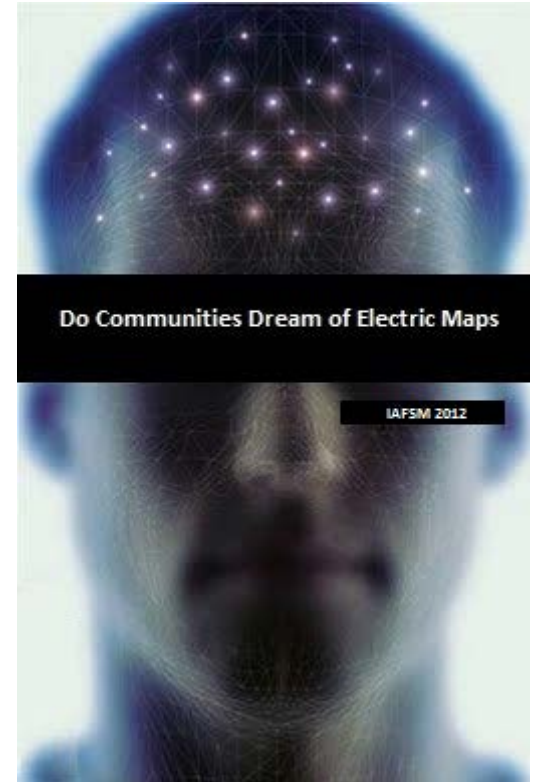
Map Service Center

FIRMette – Web/Desktop

MapViewer – Web/Desktop

National Flood Hazard Layer (NFHL)

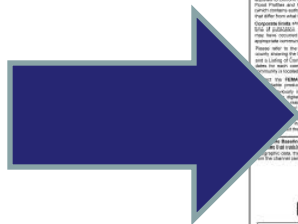
User Resources



Map Mod

~~FHBMs\FIRMs~~

- L_COMM_INFO
- L_PAN_REVIS
- L_POL_FHBM
- L_STN_START
- S_BASE_INDEX
- S_BFE
- S_FIRM_PAN
- S_FLD_HAZ_AR
- S_FLD_HAZ_LN
- S_GEN_STRUCT
- S_LABEL_LD
- S_LABEL_PT
- S_PERM_BMK
- S_PLSS_AR
- S_PLSS_LN
- S_POL_AR
- S_POL_LN
- S_QUAD_INDEX
- S_RIV_MRK
- S_TRANSPORT_LN
- S_WTR_LN
- S_XS
- STUDY_INFO



- s_wtr_ln
- s_xs
- study_info

Genesis of the Digital Tools

- **Map Mod Goal:**
 - Create Digital Data
 - Make more accessible
 - Reduce Paper distribution by 50-75%
- **Digital Vision**
 - Plan to limit paper map distribution (Oct 2009)
 - Identified user needs for accessing digital data
 - New products created - e.g., National Flood Hazard Layer
 - New tools developed - e.g., MapViewer – Web

Digital Products

- **Products Delivered:**

- CDs

- GIS CD

- Shapefile/MIF/MID

- Image CD

- FIRM Scan -- PNG/TIF

- FIS

- PDF

- **Recommendations:**

- Move the data off the CD to use

- On-site file server

- Network computer

- Locate Readme.txt

- Open With → Microsoft Picture Manager

Digital Tool Advantages

- **FREE**
- **Greater accessibility to digital map products**
 - Tools available 24 / 7
 - Able to access the most current effective data
- **Features not available on paper**
 - Geocoding/point identification
 - LOMC identification
 - Reporting
 - Measuring
 - Flexible (e.g., turn layers on and off with GIS products)

Accessing the Digital Tools

FEDERAL EMERGENCY MANAGEMENT AGENCY FEMA

Map Service Center

Product Catalog | Map Search | Quick Order | Digital Post Office | **EDDIE** | My Account | Help | Cart (1 item) | Log off

Product Search by...

Address Map Panel ID

1) Select a Product:
Flood Maps

2) Enter an Address:
Street:
City:
State: Zip:

Search by Street Address

Announcements

FEMA Digital Vision

On October 1, 2009, as part of FEMA's Digital Vision initiative, the FEMA MSC discontinued general distribution of paper mapping products. This affects Flood Insurance Rate Maps, Flood Hazard Boundary Maps, Flood Boundary and Floodway Maps, and Flood Insurance Study reports. Customers can continue to view these products free of charge and/or purchase them in digital formats. For more information, click [here](#) to visit our Digital Vision page.

FIRMette - Desktop 3.1 Upgrade

Update. The Map Service Center now has version 3.1 of the FIRMette - Desktop viewer available for download. This new version includes additional features that allow users to search for map panels by address or coordinates, search for and download Letter of Map Changes (LOMCs) for a panel, and print full-size Flood Insurance Rate Maps. You

New to the FEMA Map Service Center?

- Homeowners/Renters
- Real Estate/Flood Determination Agents
- Insurance Agents
- Engineers/Surveyors
- Federal/Exempt Customers

What are you looking for?

- Flood Maps
- FIRMettes
- DFIRM Databases
- MapViewer - Web
- Documents, Publications & Forms

More Information

- Product Availability
- How do I find the flood map for my area?
- What is a FIRMette?
- How do I find a LOMC?
- Definitions of FEMA Flood Zone Designations
- Product Information
- Price List
- How to Order
- Need Assistance?

NFHL

National Flood Hazard Layer ([learn more](#))

View the NFHL Online using MapViewer - Web

Order NFHL GIS Datasets by state on DVD

Use Web Map Service in your own GIS application

Use Web Map Service in Google Earth™

Got Comments?

FIRMette Tutorial

Learn how to create FIRMettes. They're free!

Click [here](#) to learn how to create a FIRMette.

San Bernardino County, California Letter of Map Revision Available

Case Number: 07-09-1957P
Effective date: November 19, 2007

City of Grand Forks, North Dakota Letter of Map Revision Available

Case Number: 07-08-0331P
Effective date: August 2, 2007

- Most tools are accessible from MSC Web site home page (<http://msc.fema.gov>)
 - FIRMettes
 - EDDie
 - NFHL and Google Earth™
- Downloadable fact sheets and user resources are also available




EDDie

- **Available to government agencies** (Community officials at local, county and state levels)
- **Permits finding and downloading of MSC products significantly faster**
 - Bypasses the shopping cart and checkout process on the MSC Web site
- **Intuitively designed for ease of use**
 - View products at either the county or community level
 - Search using map panel ID or LOMC case number
 - Various filters: FIRMs, world files, LOMC types
 - Historic products available



EDDie (cont.)



FEMA

Map Service Center

Express Document Delivery

Log off

[Home](#)

Search by Item Id

Search by Region Show FIPS/CID codes

DELAWARE

SUSSEX COUNTY

All Communities

Flood Insurance Rate Maps (FIRM)

DFIRM Databases

Flood Insurance Studies (FIS)

Letters Of Map Change (LOMC)

Historic Map Options

Include Latest Available Maps Only more info

World File Options

Don't Include World Files more info

Flood Insurance Rate Maps (FIRM) 1 - 20 of 97 | [Next 20](#) | [Last Page](#)

Download Now	View	Add to List	Show LOMC	Panel ID	Name	Effective Date	File Size (Mb)
		<input type="button" value="Add all"/>		10005C0019J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1
				10005C0036J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1
				10005C0037J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1.3
				10005C0038J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1
				10005C0039J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1
				10005C0041J	SUSSEX CO UNINC&INC AREAS	01/06/2005	2
				10005C0043J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1
				10005C0050J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1
				10005C0055J	SUSSEX CO UNINC&INC AREAS	01/06/2005	2.6
				10005C0060J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1
				10005C0065J	SUSSEX CO UNINC&INC AREAS	01/06/2005	7.1
				10005C0070J	SUSSEX CO UNINC&INC AREAS	01/06/2005	3.6
				10005C0100J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1.3
				10005C0104J	SUSSEX CO UNINC&INC AREAS	01/06/2005	3
				10005C0112J	SUSSEX CO UNINC&INC AREAS	01/06/2005	3.2
				10005C0125J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1.8
				10005C0129J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1
				10005C0131J	SUSSEX CO UNINC&INC AREAS	01/06/2005	1

Internet

FIRMette -- Web

- Online tool for free viewing of FIRM/DFIRMs
- Enables FIRMette creation; 1.5 million created annually
- First of the online tools; debuted in 2002

The screenshot shows the FEMA Map Service Center website. At the top, there is a navigation bar with the FEMA logo and the text "Map Service Center". Below this, there is a secondary navigation bar with links: "Product Catalog | Map Search | Quick Order | Digital Post Office | Help".

The main content area is divided into several sections:

- Product Search by...:** A search form with two tabs: "Address" and "Map Panel ID". Under "Address", there are two steps: "1) Select a Product:" with a dropdown menu showing "Flood Maps", and "2) Enter an Address:" with input fields for "Street:" (containing "9764 Easton Rd"), "City:" (containing "Rittman"), and "State:" (containing "OH") and "Zip:" (containing "44207"). A "Search by Street Address" button is at the bottom.
- New to the FEMA Map Service Center?:** A list of user types: "Homeowners/Renters", "Real Estate/Flood Determination Agents", "Insurance Agents", "Engineers/Surveyors", and "Federal/Exempt Customers".
- What are you looking for?:** A list of services: "Flood Maps", "FIRMettes", "DFIRM Databases", "MapViewer - Web", and "Documents, Publications & Forms".
- More Information:** A list of links: "Product Availability", "How do I find the flood map for my area?", "What is a FIRMette?", "How do I find a LOMC?", "Definitions of FEMA Flood Zone Designations", "Product Information", "Price List", "How to Order", and "Need Assistance?".
- Announcements:** A section titled "FEMA Digital Vision" with a paragraph of text dated October 1, 2009, regarding the discontinuation of general distribution of paper mapping products.
- FIRMette - Desktop 3.1 Upgrade:** A section titled "Update" with a paragraph of text about the availability of version 3.1 of the FIRMette-Desktop viewer.
- Log On:** A login form with fields for "User ID (email address):" and "Password:", and "Log on" and "Clear" buttons. Below the form are links for "Forgot Password?", "Register", and "Why register?".
- NFHL:** A section titled "National Flood Hazard Layer" with a link to "learn more" and text about viewing the NFHL Online using MapViewer - Web.
- Order NFHL GIS Datasets by state on DV3:** A section with text about ordering datasets and a link to "View Web Map Service in your own GIS application".
- Use Web Map Service in Google Earth™:** A section with text about using the service in Google Earth and a link to "View Web Map Service in Google Earth™".
- Got Comments?:** A link to provide feedback.
- FIRMette Tutorial:** A section titled "Learn how to create FIRMettes. They're free!" with a small map image and a link to "Click here to learn how to".

FIRMette -- Web

- Identify FIRM to view
- Make a FIRMette
- Choose Paper size.
- Move to desired area
- Create FIRMette
 - Adobe PDF
- Save FIRMette

FEMA

Save your FIRMette

Back

MAP SCALE 1" = 500'

0 500 1000 FEET

METERS

NFP

PANEL 0108E

FIRM
FLOOD INSURANCE RATE MAP
WAYNE COUNTY,
OHIO
AND INCORPORATED AREAS
PANEL 108 OF 400
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS	COMMUNITY	NUMBER	PANEL	SUFFIX
WAYNE COUNTY	00070	0108	E	
WAYNE COUNTY	00070	0108	E	

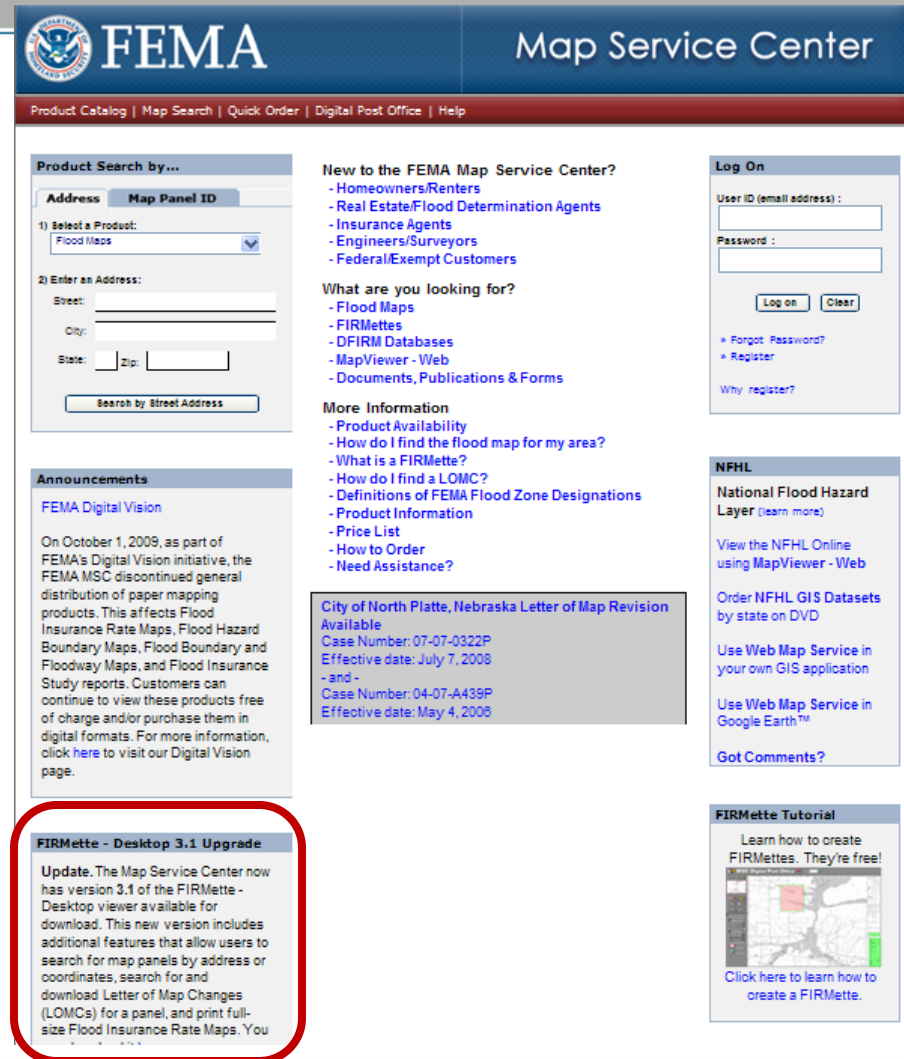
MAP NUMBER
39169C0108E
MAP REVISED
AUGUST 18, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRM On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps, check the FEMA Flood Map Store at www.msc.fema.gov

FIRMette -- Desktop

- Tool downloadable from MSC website.
- Same functionality as web version
- Not reliant on web connection



The screenshot shows the FEMA Map Service Center website. At the top, there is a navigation bar with the FEMA logo and the text 'Map Service Center'. Below this, there is a 'Product Search by...' section with tabs for 'Address' and 'Map Panel ID'. The 'Address' tab is selected, and it contains a form with fields for 'Street', 'City', 'State', and 'Zip', along with a 'Search by Street Address' button. To the right of the search form, there is a 'New to the FEMA Map Service Center?' section with a list of links: 'Homeowners/Renters', 'Real Estate/Flood Determination Agents', 'Insurance Agents', 'Engineers/Surveyors', and 'Federal/Exempt Customers'. Below this is a 'What are you looking for?' section with links: 'Flood Maps', 'FIRMettes', 'DFIRM Databases', 'MapViewer - Web', and 'Documents, Publications & Forms'. Further down is a 'More Information' section with links: 'Product Availability', 'How do I find the flood map for my area?', 'What is a FIRMette?', 'How do I find a LOMC?', 'Definitions of FEMA Flood Zone Designations', 'Product Information', 'Price List', 'How to Order', and 'Need Assistance?'. A highlighted box contains information about 'City of North Platte, Nebraska Letter of Map Revision Available' with case numbers and effective dates. Below the search form is an 'Announcements' section with the heading 'FEMA Digital Vision' and a paragraph of text. At the bottom, there is a 'FIRMette - Desktop 3.1 Upgrade' section with a red border, containing an 'Update' paragraph. On the right side of the page, there is a 'Log On' section with fields for 'User ID (email address)' and 'Password', and buttons for 'Log on' and 'Clear'. Below this are links for 'Forgot Password?', 'Register', and 'Why register?'. Further down is an 'NFHL' section with the heading 'National Flood Hazard Layer' and links for 'View the NFHL Online using MapViewer - Web', 'Order NFHL GIS Datasets by state on DVD', 'Use Web Map Service in your own GIS application', 'Use Web Map Service in Google Earth™', and 'Got Comments?'. At the bottom right is a 'FIRMette Tutorial' section with the heading 'Learn how to create FIRMettes. They're free!' and a link to 'Click here to learn how to create a FIRMette.' with a small map image.

MapViewer -- Web

- Web App – Standard DFIRM layers
- Ability to Query Attributes: Identify a Zone Type/specific LOMCs
- Generate/Print Reports

FEMA Map Service Center

Product Search by... Address Map Panel ID

New to the FEMA Map Service Center?
- Homeowners/Renters
- Real Estate/Flood Determination Agents

Log On
User ID (email address):

Flood Map Viewer

File Navigation Quick Zoom

Map Legend

Click "+" button to see a list of map layers that can be displayed.
Click on a check box to add or remove a layer.
Click "Refresh Map" button to update the map.

Legend Identify

LOMA and LOMR-F (incomplete data before 2001 locations approximate)

CASENUMBER 99-05-5558A
CID 390574
COMMUNITYNAME WAYNE COUNTY *
DATEENDED 10/13/1999
DATEENDEDSTR
DETERMINATIONTYPE
LAT 40.98822
LON -81.78237
OBJECTID 125223
PDFHYPERLINKID **Retrieve Amendment Document (final)**

PROJECTCATEGORY LOMA
PROJECTNAME 2580 EASTERN ROAD
STATUS Completed
AREA 0
LEN 0

Political Jurisdictions
 DFIRM Panels

FIRMettes. They're free!

Click here to learn how to create a FIRMette.

MapView -- Desktop

- Add DFIRM Database
- Ability to Query Attributes:
Identify a Zone
Type/specific LOMCs
- Generate/Print Reports:
SCREEN CAP
- Add comments and points in
a GIS shapefile

The screenshot displays the FEMA Map Service Center website. At the top, the FEMA logo and 'Map Service Center' are visible. Below the header, there are several update notices and navigation elements:

- FIRMette - Desktop 3.1 Upgrade:** An update notice stating that the Map Service Center now has version 3.1 of the FIRMette - Desktop viewer available for download. It lists additional features like searching for map panels by address or coordinates, downloading Letter of Map Changes (LOMCs), and printing full-size Flood Insurance Rate Maps. A 'learn more' link is provided.
- MapView - Desktop 2.0:** A notice (highlighted with a red border) stating that FEMA has updated its MapViewer Desktop tool for viewing GIS flood data. It mentions significant improvements to v. 1.0, including support for internet-based data and improved geocoding. A 'learn more' link is provided.
- FIRMette Tutorial:** A section titled 'Learn how to create FIRMettes. They're free!' with a 'Click here to learn how to create a FIRMette.' link.
- Navigation:** A vertical sidebar on the right contains a search bar and a list of links: 'rd', 'e', 'Feb', 'isets', 'ipe in', 'rtion', 'ipe in'.
- Footer:** A dark red bar contains links for 'FEMA.gov', 'Accessibility', 'Privacy Policy', 'FAQ', 'Site Help', 'Site Index', and 'Contact Us'. Below this, contact information for the FEMA Map Service Center is provided, along with a note about Adobe Acrobat Reader.
- MapViewer - Desktop 2.0 (bottom):** Another instance of the 'MapView - Desktop 2.0' notice (highlighted with a red border) is shown at the bottom of the page.
- MapViewer Desktop Logo:** A blue square logo with a white map icon and the text 'MapViewer Desktop' is located in the bottom right corner.

National Flood Hazard Layer (NFHL)

■ Background

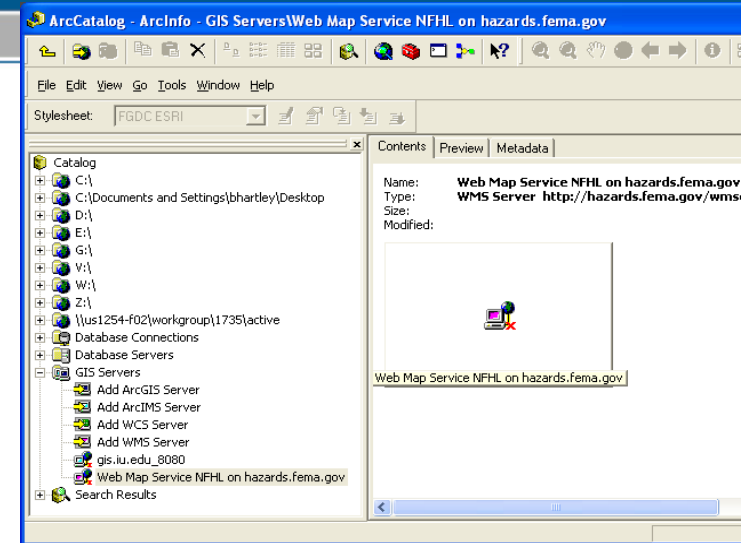
- Spatial database of flood hazard information from FEMA's Map Modernization & Risk MAP programs

■ Benefits

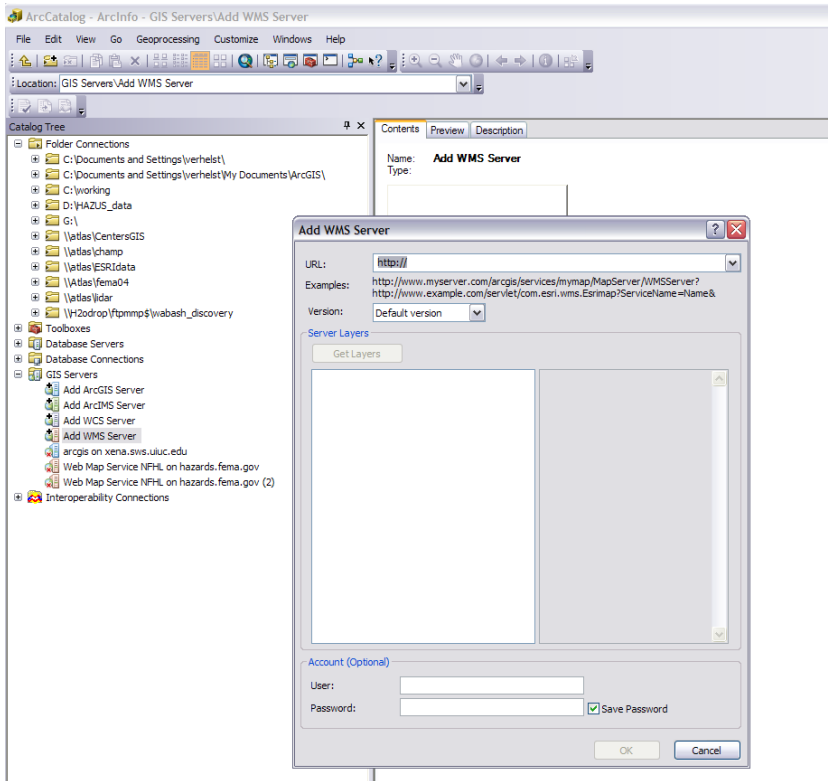
- Convenience: One integrated dataset
- Completeness: Includes all effective and available digital data as of the dataset release date including LOMRs
- Scalable: Integrate the NFHL with other map data

NFHL GIS Data

- Three Digital Formats:
 - kmz file (Google Earth)
 - ESRI Shapefile Format
 - Web Mapping Service (WMS)
- Updated Monthly
- Organized on State-by-State basis
- Spatial analysis & custom maps
- Order a DVD copy from Map Service Center website
<http://msc.fema.gov>



NFHL Web Map Service



- Connect to WMS server, able to add in layers or all layers
- Layers appear using same symbolization on NFHL Web Viewer
- Tips
 - Layers have a scale range set – do not display above/below certain scales
 - Layers will not draw if ArcMap window is maximized

- Can turn layers on/off, query for attributes

Digital Product Matrix

DIGITAL FLOOD HAZARD PRODUCT OR TOOL	WHO CAN USE THIS PRODUCT	WHAT IS IT? WHAT DOES IT DO?	AVAILABLE COVERAGE	WHAT DO I NEED TO USE IT?	SUITABLE FOR...	LEARN MORE
Digital Flood Hazard Maps						
FIRM Scans	NFP Community Officials, Technical Collaborators, Investment Professionals, Property Owners with Access, Primary/Secondary Educators, Media and Congressional Staff	Image data that provides a picture of an entire FIRM or FHBM	Everywhere FEMA has mapped flood hazards	Software, such as FIRMette - Desktop (or F - MIT), that lets you view and print TIFF or PNG-formatted image files	Viewing flood hazard maps, printing your own flood maps for an area of interest.	http://msc.fema.gov . Follow the link "Product Information," and then "NFP Flood Maps."
Digital Flood Insurance Rate Map (DFIRM) database	Technical Collaborators, Primary/Secondary Educators, Media and Congressional Staff	The initial flood hazard GIS data for a community or county	Only where FEMA has modernized maps	Software, such as MapViewer - Desktop or GIS or other mapping software	Creating custom maps, viewing attribute data, and incorporating flood hazard data into custom software applications	http://msc.fema.gov . Follow the link "Product Information," and then "DFIRM databases."
National Flood Hazard Layer (NFHL) GIS data	Technical Collaborators, Primary/Secondary Educators, Media and Congressional Staff	Flood hazard GIS data for a state	Only where FEMA has modernized maps. Includes changes from Letters of Map Revisions (LOMRs)	Software, such as MapViewer - Desktop or GIS or other mapping software	Creating custom maps, viewing attribute data, and incorporating flood hazard data into custom software applications	A user guide is available at http://www.fema.gov/library/viewRecord.do?id=3291
NFHL Web Map Service	Technical Collaborators, Investment Professionals, Primary/Secondary Educators, Media and Congressional Staff	Web service that makes map overlays and lets users view attribute data from the NFHL	Only where FEMA has modernized maps. Includes changes from LOMRs and locations of Letters of Map Amendment (LOMAs) and Letters of Map Revisions Based on Fill (LOMR-Fs)	Internet connection and GIS or other mapping software that lets you use a web map service	Creating custom maps, viewing attribute data, and incorporating flood hazard data into custom software applications	A user guide is available at http://www.fema.gov/library/viewRecord.do?id=3292
FEMA-Provided Tools For Digital Flood Hazard Maps						
FIRMette - Desktop (or F-MIT)	NFP Community Officials, Technical Collaborators, Investment Professionals, Property Owners with Access, Primary/Secondary Educators, Media and Congressional Staff	Desktop software to create a map from a portion of a FIRM scan	Works with FIRM Scan data on your computer	Firm Scan data copied to your desktop and ability to view and print PDF files	Viewing flood hazard maps and printing an area of interest	Download the software under "FIRMette - Desktop (F-MIT)" at http://msc.fema.gov . The software includes a tutorial
FIRMette - Web	NFP Community Officials, Technical Collaborators, Investment Professionals, Property Owners with Access, Primary/Secondary Educators, Media and Congressional Staff	Internet software to create a map from a portion of a FIRM scan	Everywhere FEMA has mapped flood hazards	Internet connection, web browser software, and ability to view and print PDF or TIFF files	Viewing flood hazard maps and printing your own flood maps for an area of interest	FIRMette tutorial at http://msc.fema.gov
MapViewer - Desktop	Technical Collaborators, Primary/Secondary Educators, Media and Congressional Staff	Desktop software to make maps and view attribute data	Works with DFIRM database and NFHL GIS data on your computer	DFIRM databases or NFHL GIS data on CD or copied to your desktop	Viewing custom flood hazard maps and attribute data. Making comments on preliminary DFIRMs	Download the software under "MapViewer - Desktop (beta)" at http://msc.fema.gov
MapViewer - Web	Technical Collaborators, Primary/Secondary Educators, Media and Congressional Staff	Internet software to make maps and reports from the NFHL	Only where FEMA has modernized maps. Includes changes from LOMRs, and locations of LOMAs and LOMR-Fs.	Internet connection, web browser software, and ability to view and print PDF files	Creating custom maps and reports, and viewing attribute data	A user guide is available at http://www.fema.gov/library/viewRecord.do?id=3290
NFHL Google Earth™ utility (kmz) files "Stay Dry" and "FEMA NFHL"	NFP Community Officials, Technical Collaborators, Investment Professionals, Property Owners with Access, Primary/Secondary Educators, Media and Congressional Staff	Files that allow the viewing of the NFHL Web Map Service in Google Earth™	Works with the NFHL Web Map Service	kmz files, internet connection, and Google Earth™ viewer software	Quick looks at NFHL flood hazard data. Dynamic visualizations of flood data	User guides are available at http://www.fema.gov/library/viewRecord.do?id=3289 and http://www.fema.gov/library/viewRecord.do?id=3293
Flood Insurance Study (FIS) Reports						
FIS Report File	NFP Community Officials, Technical Collaborators, Investment Professionals, Property Owners with Access, Primary/Secondary Educators, Media and Congressional Staff	A book that contains information about flooding in a community. It is developed in conjunction with the FIRM.	Available for most areas. Generally, wherever FEMA has published Base Flood Elevation information	FIS report file and ability to print and view PDF files	Reading about the flood study for a community or county and related engineering data	FIS report tutorial at http://www.fema.gov/plan/prevent/fhm/_of_fsr.shtm
Stakeholder Groups						
NFP Community Officials =	Floodplain management stakeholders, NFP community Chief Executive Officers (CEOs), and Members of Tribal Communities					
Technical Collaborators =	Community emergency management officials, GIS managers and specialists, community and economic development planners, regional planners, and state and federal agencies in charge with the development or stewardship of water resources, also, University-level collaborators and Academic-sponsored Institutes.					
Investment Professionals =	Insurance and Risk Management professionals, land use developers, construction industry representatives, realtors, and lenders					
Property Owners with Access =	Individual property owners with access to internet, including small businesses					
Property Owners with No Access =	Individual property owners with limited or no access to internet					
Primary/Secondary Educators =	Educators looking for activities inside the primary and secondary school classroom					
Media and Congressional Staff =						

User Resources

■ Important URLs

- MSC: <http://msc.fema.gov>
- EDDie: <http://edd.msc.fema.gov>
- MIP: <http://www.hazards.fema.gov>

■ FEMA Map Information eXchange

- E-mail: FEMAMapSpecialist@riskmapcds.com
- Phone: 1-877-FEMA MAP (336-2627)

■ MIP Help

- E-mail: miphelp@riskmapcds.com