

The background of the slide is a photograph of the Earth as seen from the Moon's surface. The Earth is a bright blue and white sphere in the upper center, partially obscured by the text. The foreground shows the grey, cratered surface of the Moon.

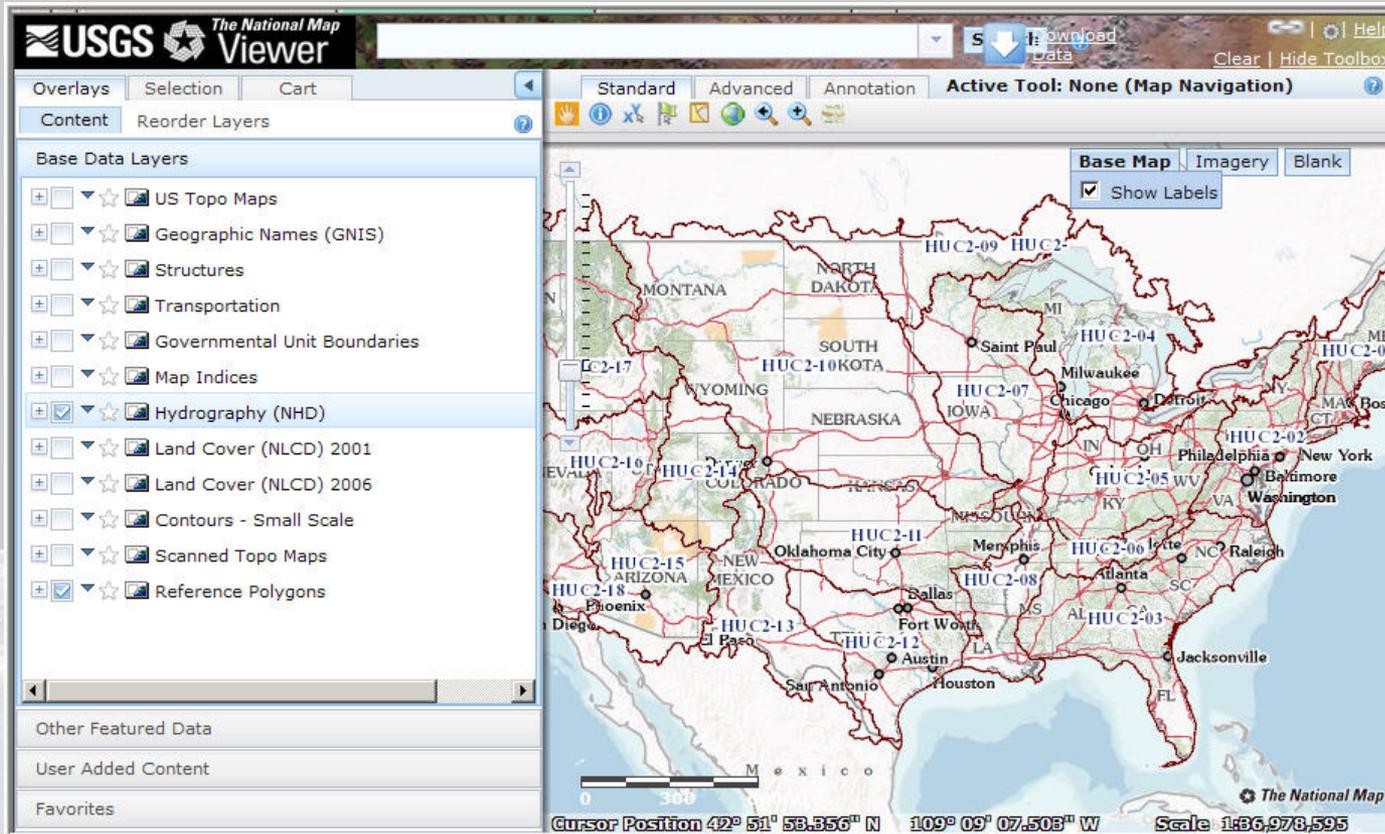
# **Indiana GIS Local Resolution NHD Update**

**Indiana State Government  
GIS Day**

**September 22, 2015**

# National Hydrography Dataset

## Surface water component of the National Map

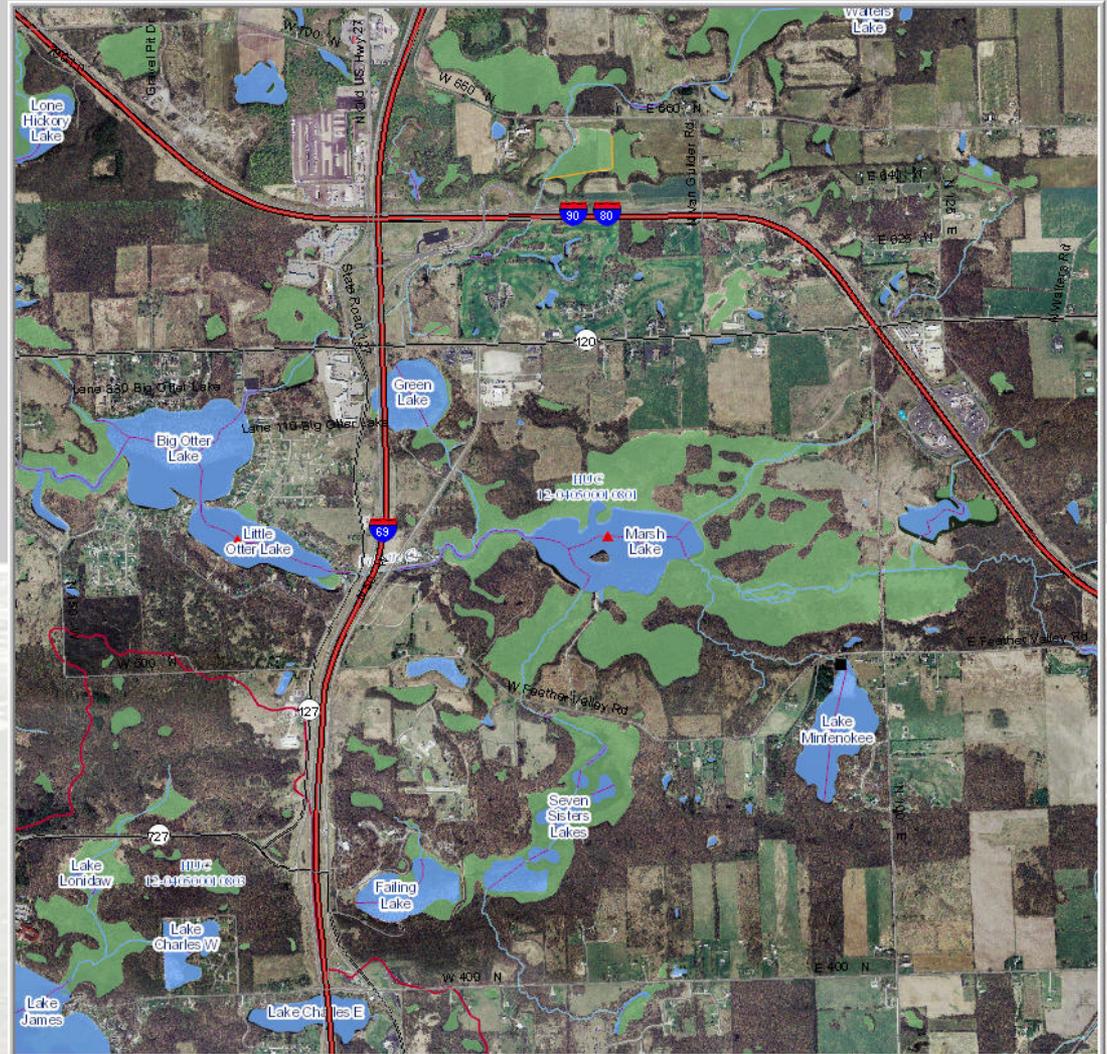


Adopted as Indiana Framework Dataset for Waters

# National Hydrography Dataset

## National Hydrograph Dataset

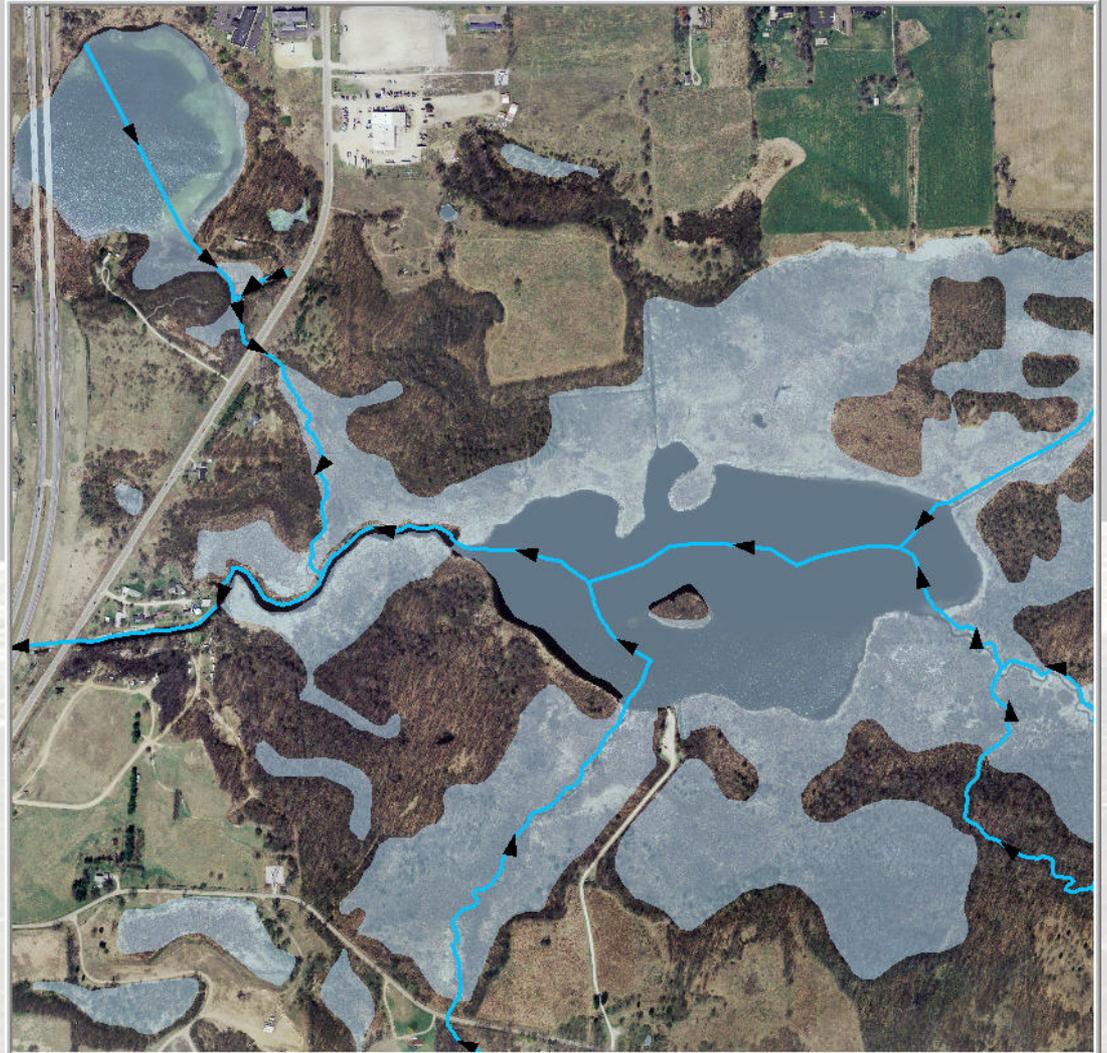
- Can be used in GIS for general mapping and analysis of surface-water systems
- Can be used in CAD as planimetric basemap data



# National Hydrography Dataset

## National Hydrography Dataset

- Enables the modeling of water flow in GIS applications



# Improving the NHD for Indiana

## Update NHD to “Local-resolution”

- Based upon best available digital orthophotography and elevation data ( $\geq 2005$ , most 2011-13)
- Updates of physical features (existence, location)
- Data at scale of 1:2,400 or better
- Streams added to 6-acre drainage basin area
- Inconsistencies between quads removed
- Naming of features improved
- Network topology improved



# Compare High Res vs. Local Res

**IndianaMap NHD Swipe Map** A story map [f](#) [t](#) [w](#) [e](#)

NHD Swipe Map illustrates the difference between Indiana's original USGS 1:24,000 High-Resolution National Hydrography Data Set (NHD), and Indiana's new USGS 1:2,400 Local-Resolution NHD. Click on the Vertical line and slide it left-right to expose Indiana's new Local-Resolution streams and ditches. \*\* Click on the Bookmarks 1 - 9 to zoom to US House Congressional Districts. Click on #10 to go back to statewide view. Enter an address in the search box in the upper right corner and click on the magnifier to zoom to an area of interest. \*\*NOTE: Indiana's Local-resolution NHD mapping project is still in progress, so not all areas in Indiana have been mapped. All mapping will be completed by the end of 2015.

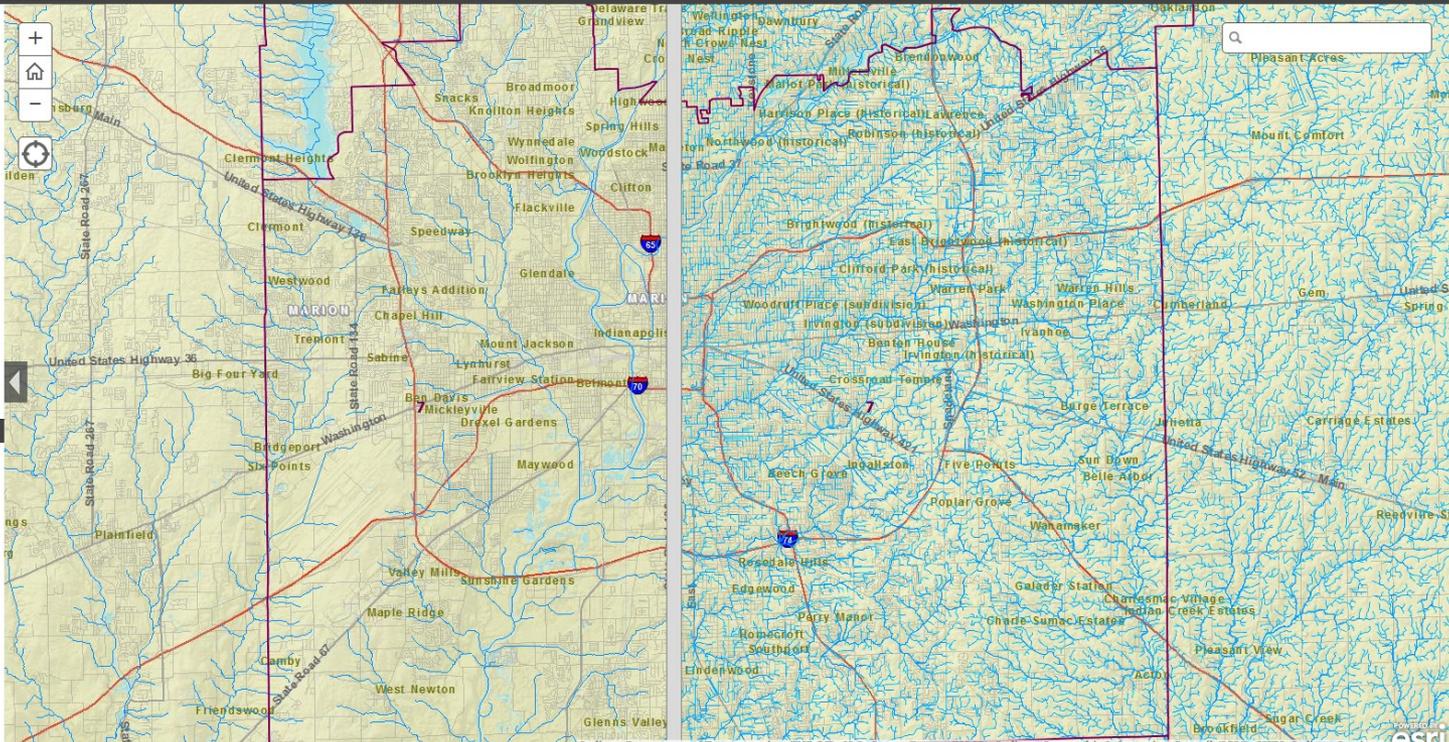
1 2 3 4 5 6 7 8 9 10

**Seventh Congressional District**

District\_N: 7  
DIST\_NAME: Seventh Congressional District  
Representa: André Carson  
Party: Democrat  
Web\_Site: <http://carson.house.gov/>  
Address: 425 Cannon House Office Building  
City/Zip: Washington, DC 20515  
Phone: (202) 225-4011  
Fax: (202) 225-5633  
Address\_1: 300 East Fall Creek Pkwy North Drive, Suite 300  
City/Zip\_1: Indianapolis, IN 46205  
Phone\_1: (317)-283-6516  
Fax\_1: (317)-283-6567

**Legend**

<b>Congress_113th_Dis</b>	<b>Water_Bodies_Stre</b>
113th Congressional Districts	Streams (Local-Resolution NHD)
	
<b>Water_Bodies_Stre</b>	
Streams (NHD)	
	

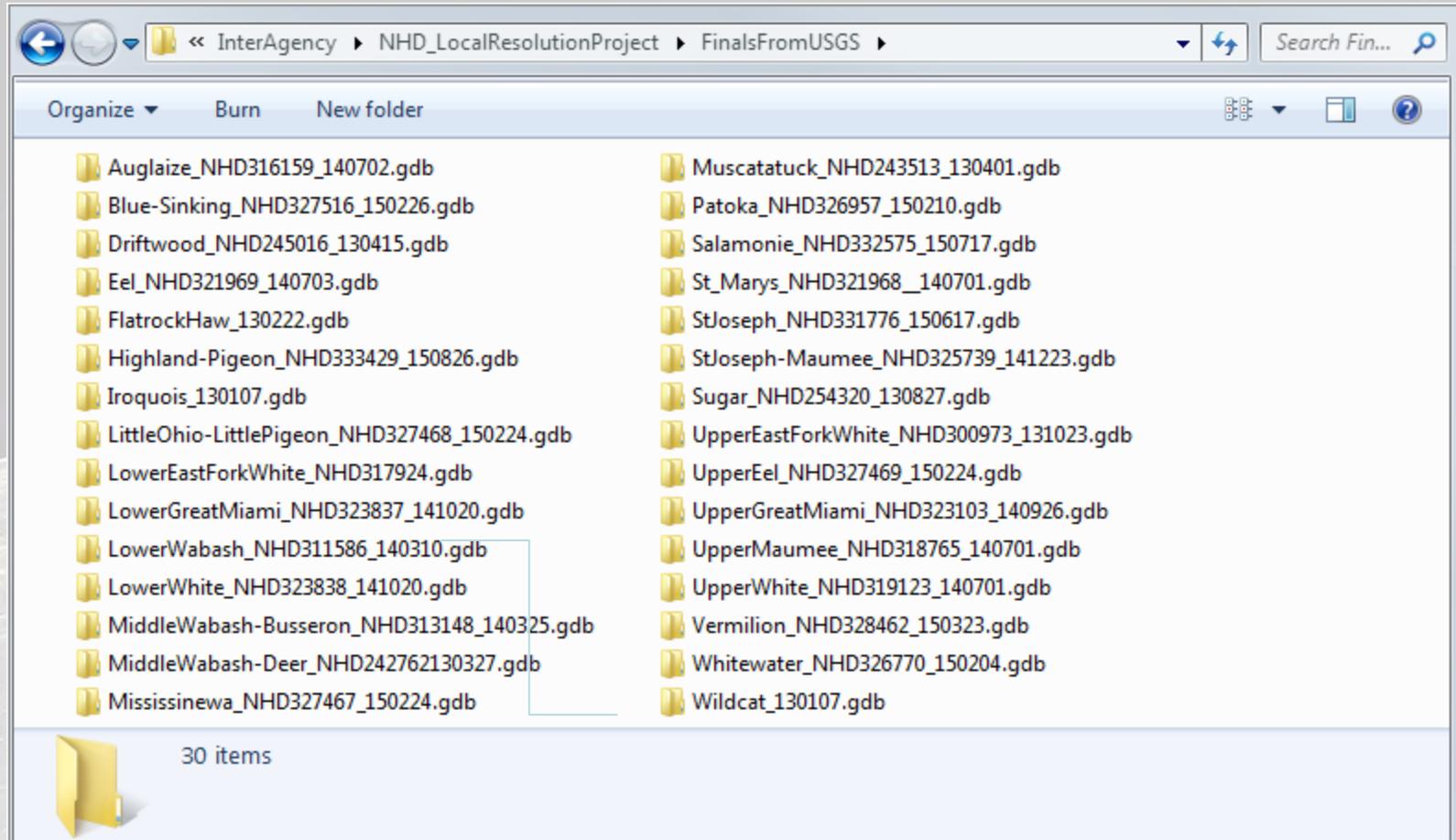


Indiana Department of Transportation (INDOT), U.S. Census Bureau (USCB), Indiana Geographic Information Council (IGC), UITS, Indiana Spatial...

<http://arcg.is/1HHmzQa>

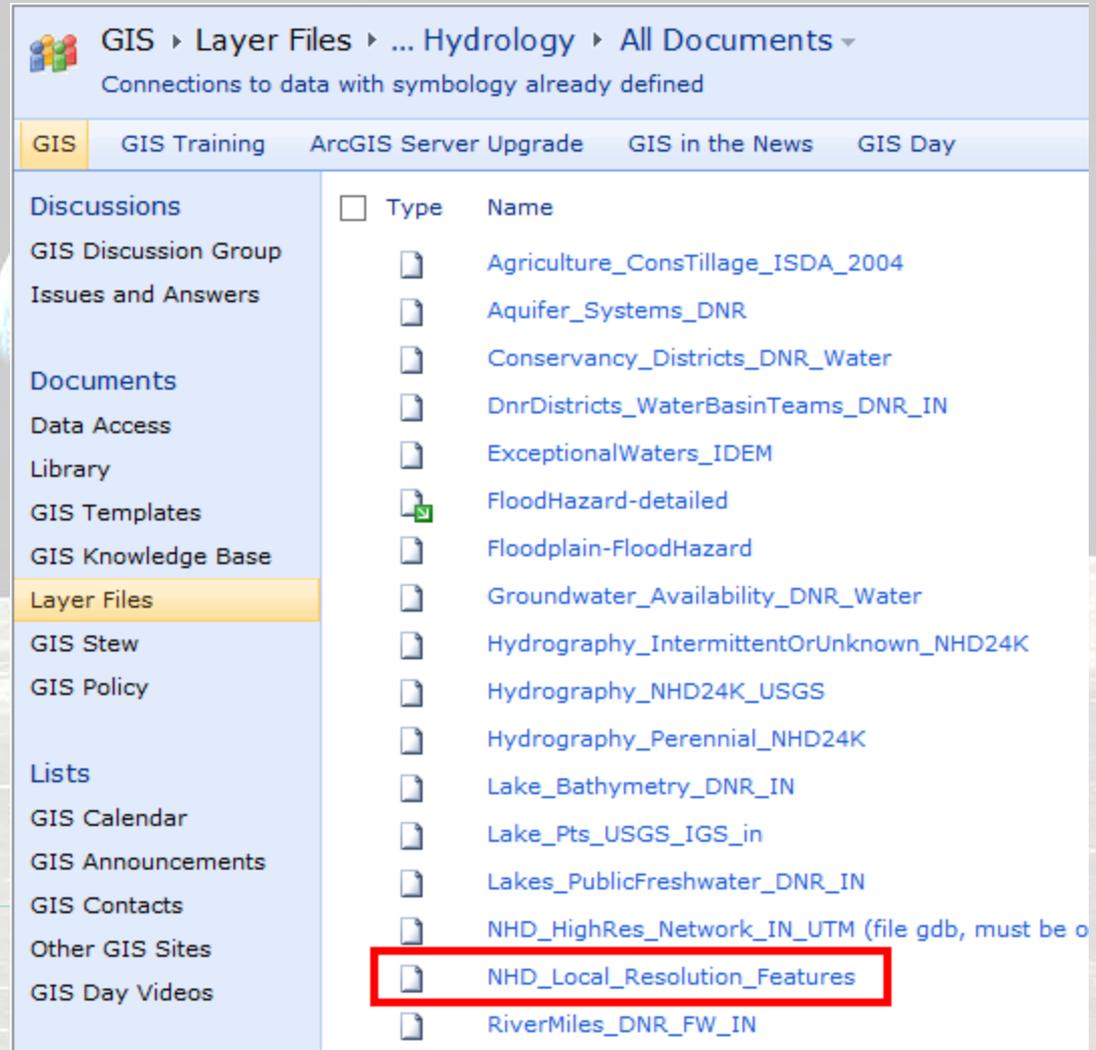
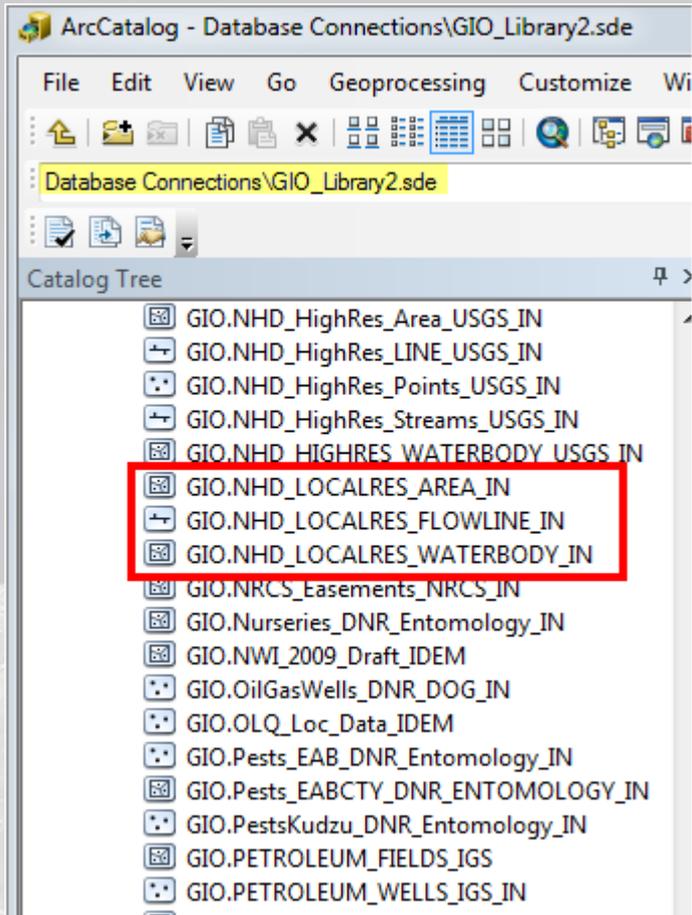
# State Personnel on the State Backbone Network

Full Geodatabases by Subbasin, can use for modeling



\\dnrgis\$\InterAgency\NHD\_LocalResolutionProject\FinalsFromUSGS

# State Personnel on the State Backbone Network Areas, Flowlines, and Waterbodies, Features Only



Myshare.in.gov/gis > Direct Connect Layer Files > Hydrology

# Finding NHD Data on the Web



USGS Home  
Contact USGS  
Search USGS

## Hydrography

- Home
- News
- Get Data
- Stewardship
- User Resources
- Tools
- Applications
- Contact Us
- Watershed Boundary Dataset
- Hydrography Seminar Series
- Report Data Issue

## Get NHD Data

The National Hydrography Dataset (NHD) is stored in a geodatabase implementation of the NHD model. This provides great flexibility and efficiency to allow the data to work well in analysis using a geographic information system (GIS). To maximize the capability of the NHD, users should download the data in a file-based or personal geodatabase known as NHDinGEO. For those using the NHD to create simple maps, a shapefile version known as NHDinSHAPE also is available.

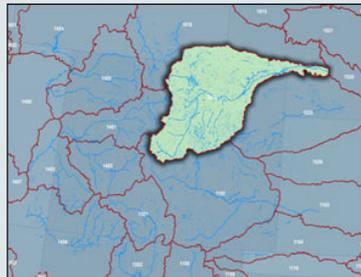
### National Snapshot of NHD

A national snapshot of the entire High Resolution NHD from February 2015 is now available in a file geodatabase. Anyone is welcome to give it a try and give us feedback. It is a large download (10 GB), and we advise using ftp client software, which allows you to resume a transfer in case of a failure. Examples of such software include WinSCP, CyberDuck, and FileZilla. (The use of firm, trade, or brand names is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey. The names mentioned in this document may be trademarks or registered trademarks of their respective trademark owners. Use appropriate caution when downloading and installing software from the Internet.) This file geodatabase includes just

#### Quick Links for data download:



1. [GO to the NHD Viewer](#) | [Help](#)



2. [GO to Pre-staged Subregions](#)



3. [GO to NHD Extracts by State](#)

NHD Website:  
download full  
data model (file  
geodatabase  
format) or  
shapefiles

<http://nhd.usgs.gov/data.html>

# Finding NHD Data on the Web

## USGS The National Map Hydrography Viewer

<http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd#>

The screenshot displays the USGS The National Map Hydrography Viewer interface. The top navigation bar includes the USGS logo, the text "The National Map Hydrography", a search bar, and a "Download Data" button highlighted with a red box. Below the navigation bar, there are tabs for "Standard", "Advanced", "Annotation", and "Active Tools". The main map area shows a map of the United States with various hydrography layers overlaid, including the "NHD Base" layer. The map is divided into Hydrologic Units (HUCs) and shows major rivers like the Colorado River, Missouri River, and Mississippi River. The bottom of the interface features a scale bar (0 to 600 miles) and coordinates: 19° 57' 32.610" N, 74° 34' 01.644" W. The USGS logo and contact information are also visible at the bottom right.

# Finding NHD Data on the Web

## USGS The National Map Hydrography Viewer

USGS TNM 2.0 Viewer - Windows Internet Explorer

http://viewer.nationalmap.gov/viewer/

USGS Available Data

The following themes and products are available in various formats for download in the reference area polygon you selected. Check one or more and click 'Next.' Products will be added to the Cart on the left side of the screen.

Selected item type: **NHD Subbasins**  
Selected item name: **HUC: 05120201**

Theme	Format
<input type="checkbox"/> <a href="#">US Topo</a>	Bulk download not available. Select smaller area.
<input type="checkbox"/> <a href="#">Historical Topo Maps</a>	Bulk download not available. Select smaller area.
<input type="checkbox"/> <a href="#">Structures</a>	File GDB 9.3.1
<input type="checkbox"/> <a href="#">Transportation</a>	File GDB 9.3.1
<input type="checkbox"/> <a href="#">Boundaries</a>	File GDB 9.3.1
<input type="checkbox"/> <a href="#">Geographic Names</a>	Text
<input type="checkbox"/> <a href="#">USGS Map Indices</a>	File GDB 9.2
<input type="checkbox"/> <a href="#">Hydrography</a>	File GDB 9.3.1 File GDB 9.3.1 Personal GDB 9.3.1 Shapefile
<input type="checkbox"/> <a href="#">Land Cover</a>	
<input type="checkbox"/> <a href="#">Elevation</a>	
<input type="checkbox"/> <a href="#">Orthoimagery</a>	GeoTIFF

If a checkbox is disabled, the area you selected is too large. Click theme names to see theme descriptions.

USGS Available Data

This page lists themes providing more than one product. If a selected theme is not listed, it only has one product. Use the checkboxes to select the products you want under each theme. Click Land Cover, Elevation, and Orthoimagery products to preview their footprints on the map.

Hydrography (2 products)					
Product	Date	Type	Resolu	Size	Metadata
<input type="checkbox"/> Dynamic Extract	Best Available	Dynamic	High		
<input type="checkbox"/> Dynamic Extract with Flow Table	Best Available	Dynamic	High		

Source for the full data model, with flow/direction/topology

# Finding NHD Data on the Web

## ArcGIS Online Sites

The screenshot displays the ArcGIS Online web interface. The browser address bar shows the URL: [www.arcgis.com/home/webmap/viewer.html?useExisting=1](http://www.arcgis.com/home/webmap/viewer.html?useExisting=1). The page title is "ArcGIS - My Map". The interface includes a search bar at the top right with the text "Find address or place". Below the search bar, there are navigation and utility icons: Details, Add, Basemap, Save, Print, Measure, and Bookmarks. A red box highlights the "Search for Layers" panel on the left side of the map. This panel contains the following information:

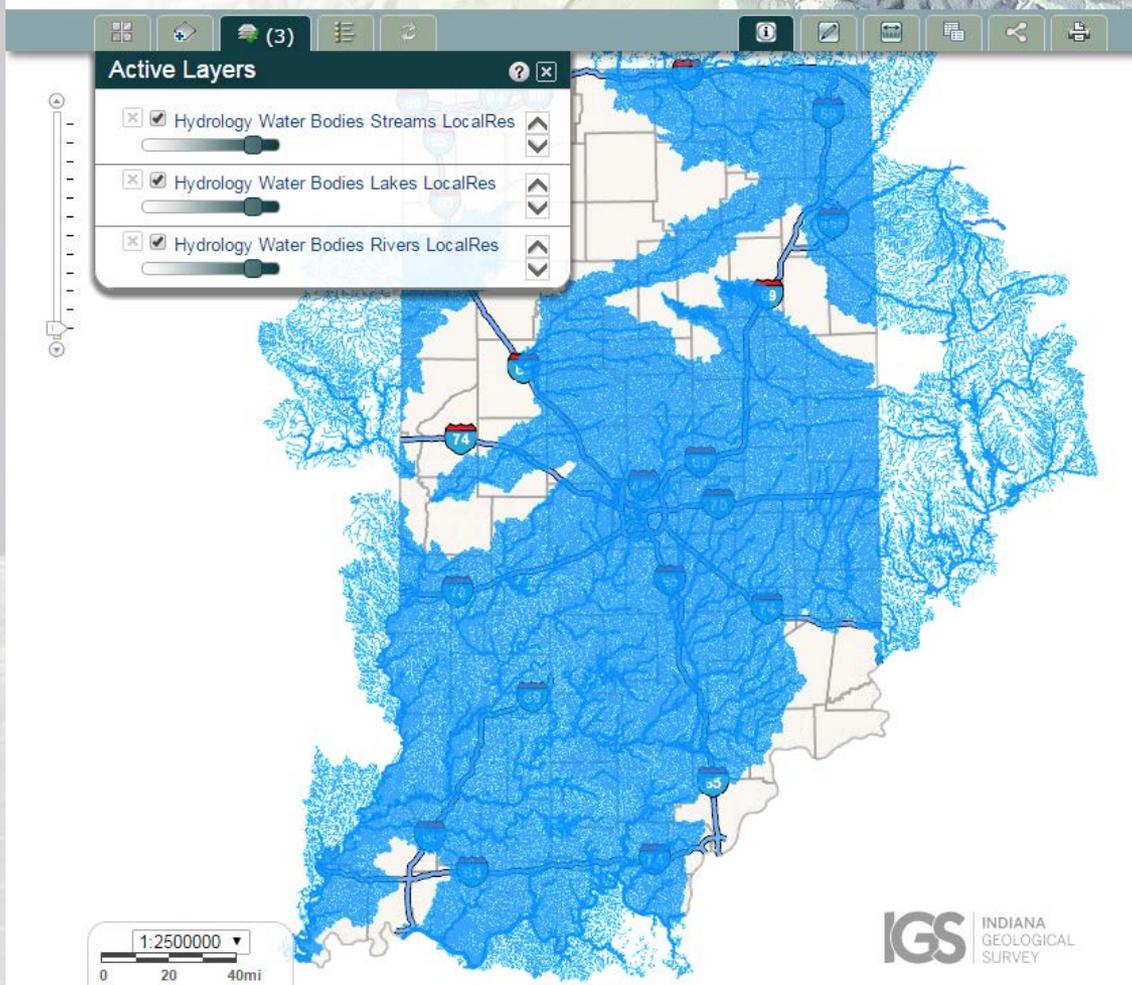
- Search term: "IndianaMap localres" with a "GO" button.
- Source: "ArcGIS Online" (selected in a dropdown menu).
- Filter:  "Within map area".
- Results: "3 Results Found".
- Three search results are listed, each with a thumbnail icon, the layer name, and the creator "by hillric":
  - Water\_Bodies\_Lakes\_LocalRes
  - Water\_Bodies\_Rivers\_LocalRes
  - Water\_Bodies\_Streams\_LocalRes

At the bottom of the search panel, there is a blue button that says "DONE ADDING LAYERS". The main map area shows a geographic view of the United States, centered on Indiana, with various cities and states labeled. The Esri logo and "POWERED BY esri" are visible in the bottom right corner of the map area.

# Finding NHD Data on the Web

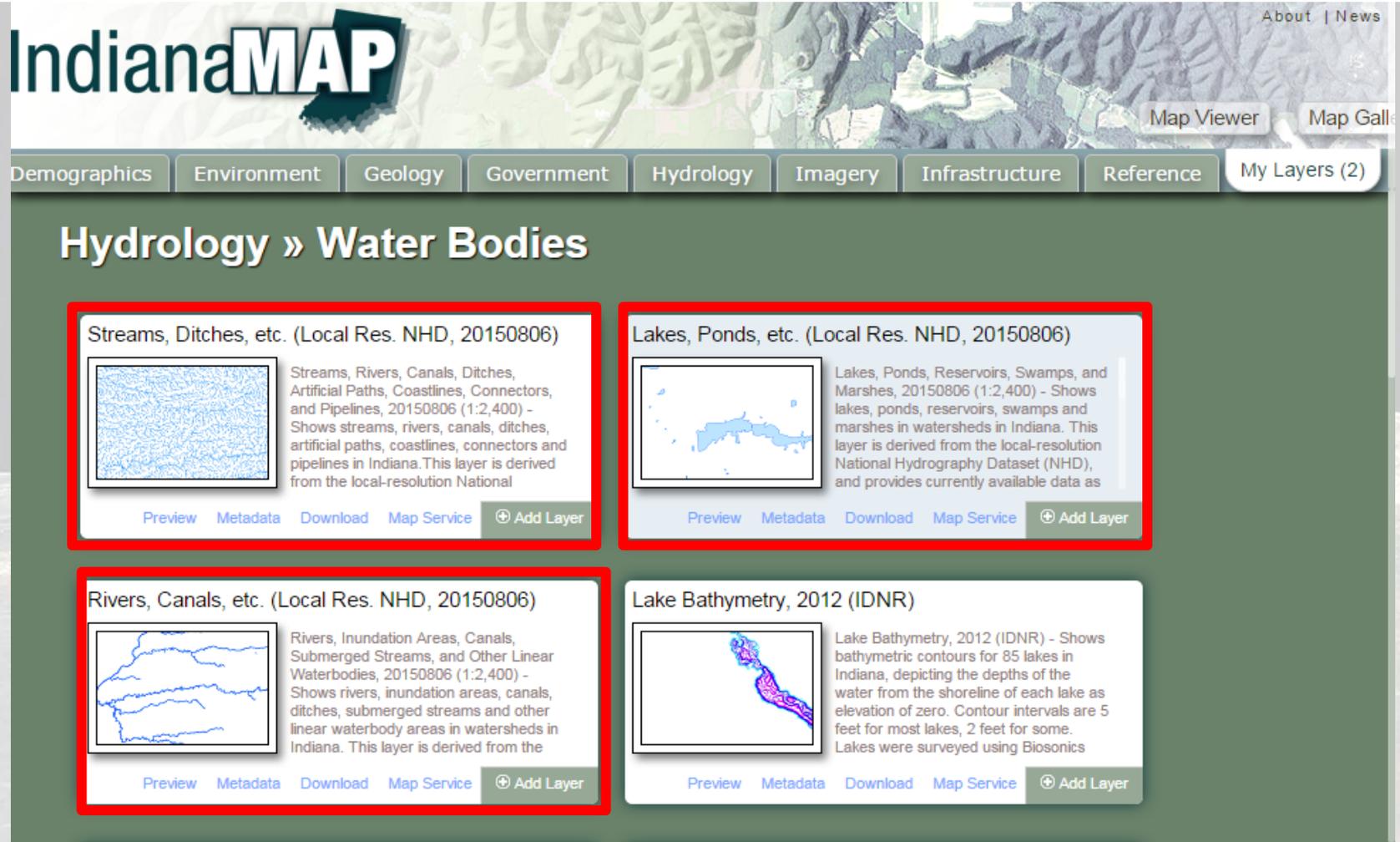
IndianaMAP

<http://maps.indiana.edu/index.html>



# Finding NHD Data on the Web

<http://imaps.indiana.edu/layerGallery.html?category=WaterBodies>



The screenshot shows the IndianaMAP website interface. At the top, there is a navigation bar with categories: Demographics, Environment, Geology, Government, Hydrology, Imagery, Infrastructure, Reference, and My Layers (2). The main heading is "Hydrology » Water Bodies". Below this, there are four data layer cards, each with a thumbnail, description, and action buttons (Preview, Metadata, Download, Map Service, Add Layer).

## IndianaMAP

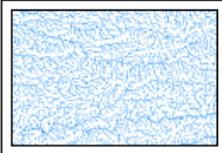
About | News

Map Viewer | Map Gallery

Demographics | Environment | Geology | Government | Hydrology | Imagery | Infrastructure | Reference | My Layers (2)

### Hydrology » Water Bodies

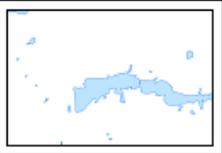
#### Streams, Ditches, etc. (Local Res. NHD, 20150806)



Streams, Rivers, Canals, Ditches, Artificial Paths, Coastlines, Connectors, and Pipelines, 20150806 (1:2,400) - Shows streams, rivers, canals, ditches, artificial paths, coastlines, connectors and pipelines in Indiana. This layer is derived from the local-resolution National

[Preview](#) [Metadata](#) [Download](#) [Map Service](#) [Add Layer](#)

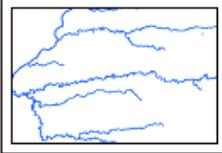
#### Lakes, Ponds, etc. (Local Res. NHD, 20150806)



Lakes, Ponds, Reservoirs, Swamps, and Marshes, 20150806 (1:2,400) - Shows lakes, ponds, reservoirs, swamps and marshes in watersheds in Indiana. This layer is derived from the local-resolution National Hydrography Dataset (NHD), and provides currently available data as

[Preview](#) [Metadata](#) [Download](#) [Map Service](#) [Add Layer](#)

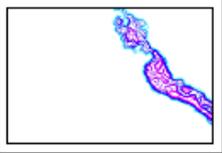
#### Rivers, Canals, etc. (Local Res. NHD, 20150806)



Rivers, Inundation Areas, Canals, Submerged Streams, and Other Linear Waterbodies, 20150806 (1:2,400) - Shows rivers, inundation areas, canals, ditches, submerged streams and other linear waterbody areas in watersheds in Indiana. This layer is derived from the

[Preview](#) [Metadata](#) [Download](#) [Map Service](#) [Add Layer](#)

#### Lake Bathymetry, 2012 (IDNR)



Lake Bathymetry, 2012 (IDNR) - Shows bathymetric contours for 85 lakes in Indiana, depicting the depths of the water from the shoreline of each lake as elevation of zero. Contour intervals are 5 feet for most lakes, 2 feet for some. Lakes were surveyed using Biosonics

[Preview](#) [Metadata](#) [Download](#) [Map Service](#) [Add Layer](#)

# Finding NHD Data on the Web

## IndianaMap Open Data

The screenshot shows a web browser window with the URL `data.indianamap.opendata.arcgis.com/datasets?q=nhd+localres&sort_by=relevance`. The search bar contains the text "nhd localres" and is highlighted with a red box. Below the search bar is a map of the United States with a blue rectangle highlighting the state of Indiana. A large blue text box is overlaid on the map with the URL <http://data.indianamap.opendata.arcgis.com/>. Below the map, the search results are displayed as "1-3 of 3 results". The first result is "Lakes (Local-Resolution NHD)" with 11 attributes and 124926 locations. The second result is "Rivers (Local-Resolution NHD)" with 10 attributes and 1643 locations. The third result is "Streams (Local-Resolution NHD)" with 12 attributes and 1613872 locations. A "My Favorites" sidebar is visible on the right side of the page.

IndianaMAP Open Data

nhd localres

<http://data.indianamap.opendata.arcgis.com/>

1-3 of 3 results

Relevance

My Favorites

click ★ on any dataset to add to your favorites

**Lakes (Local-Resolution NHD)** (from IndianaMap Hydrology Layers)  
Shared by hillric on November 17, 2014. Updated 4 months ago.  
Lakes, Ponds, Reservoirs, Swamps, and Marshes, 20140905 (1:2,400) - Shows lakes, ponds, reservoirs, swamps and marshes in watersheds in Indiana. This layer is derived from the local-resolution National Hydrography Dataset (NHD), and provides currently available data as of September 5, 2014. NHD data was originally developed...

**Rivers (Local-Resolution NHD)** (from IndianaMap Hydrology Layers)  
Shared by hillric on November 17, 2014. Updated 4 months ago.  
Rivers, Inundation Areas, Canals, Submerged Streams, and Other Linear Waterbodies, 20140905 (1:2,400) - Shows rivers, inundation areas, canals, ditches, submerged streams and other linear waterbody areas in watersheds in Indiana. This layer is derived from the local-resolution National Hydrography Dataset (NHD), and provide...

**Streams (Local-Resolution NHD)** (from IndianaMap Hydrology Layers)  
Shared by hillric on November 17, 2014. Updated 4 months ago.  
Streams, Rivers, Canals, Ditches, Artificial Paths, Coastlines, Connectors, and Pipelines, 20140905 (1:2,400) - Shows streams, rivers, canals, ditches, artificial paths, coastlines, connectors and pipelines in Indiana. This layer is derived from the local-resolution National Hydrography Dataset (NHD), and provides currently available

# IGIC Waters Workgroup

**Mike Martin, IGIC Waters Workgroup Chairperson  
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**402 W. Washington St., Rm. 280**

**Indianapolis, IN 46204**

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**317-232-4068**