

State Geospatial Data Coordination Procedure

Arkansas



FEMA

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State Geospatial Data Coordination Procedure

Arkansas

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State Geospatial Data Coordination Procedure

Purpose of the Procedure

Flood Insurance Studies search for geospatial data during Discovery tasks. If needed data are not available, studies might fund the collection of new data and would like to know about other organizations that might share in these costs. Detailed information about the role geospatial data coordination plays in studies is in the Geospatial Data Coordination portal, which is available at https://riskmapportal.msc.fema.gov/riskmap_usergroups/GeoCoord/default.aspx (password required).

Resources developed through FEMA's geospatial data coordination activities provide information about data and contacts for organizations that have geospatial data that cover large areas (like states) in which many studies are interested. Studies can avoid wasting time with dead-end searches and cold calls by starting with these proven sources of information.

One resource is this Geospatial Data Coordination Procedure. It outlines sources of geospatial data and contact information, preferences for base map data and state geospatial participation in flood insurance studies, information for the project Discovery stage, and other useful information for the State.

If you have questions about this procedure or other geospatial data coordination resources, contact the geospatial data coordination lead in your Regional Support Center (RSC):

John Barr, Geospatial Data Coordination Lead RAMPP Regional Support Center (RSC) 6 (972)829-8966

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We appreciate the help of those who reviewed this document, in particular Shelby D. Johnson, State Geographic Information Officer

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Date Procedure last discussed: February 2007

Default Flood Hazard Base Map for the State

The default base map for flood hazard maps for the State is a vector base map utilizing road centerlines-created/maintained locally by counties with accuracy checked by the Arkansas

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Geographic Information Office. These data are accessible through Arkansas's Online Geospatial Clearinghouse – GeoStor, <http://gis.arkansas.gov/>.

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The secondary choice, if road centerlines are unavailable, is for an image base map (orthophoto). The State of Arkansas has procured new Aerial Imagery for the entire State at 1m resolution in both natural color and color infrared (CIR). There are also several areas in the State where higher resolution data are available. All of these orthophotos are available through the State's Geospatial Clearinghouse – GeoStor, <http://gis.arkansas.gov/>.

Geospatial Data Coverage

Below, you will find links to statewide and federal agencies' national geospatial datasets and information about them. The list is provided to save time during Discovery activities when building a list of candidate geospatial datasets available for the study; it is not a prescription of datasets that must be used in a Flood Insurance Study.

Major State Holdings

Orthophotos

Dataset name: Arkansas_2015_1m

Data currentness: 2015

Accuracy/Scale: 1-m statewide

Ground sample resolution: 1m

Horizontal datum: WGS_1984_Web_Mercator_Auxiliary_Sphere Fee associated? No

Available for redistribution? Yes

Dataset source: AGIO, <http://gis.arkansas.gov/>

Dataset contact: Shelby Johnson, AGIO, (501)682-2767 shelby.johnson@arkansas.gov

Notes:

Transportation (roads, railroads, and airports)

Dataset name: ACF (Road Centerlines), AHTD RR, BTS Airport Runways Data
currentness: (Roads-04/11/2014) (Airports-1999) Railroads-8/2006 Accuracy/Scale:
Roads-10 meters or better; 1:12,000

Horizontal datum: NAD 83 UTM – Zone 15N, Fee associated? No

Available for redistribution? Yes

Are road names part of the dataset? Yes Are road names in TIGER format? Yes

Dataset source: AGIO, <http://gis.arkansas.gov/>

Dataset contact: Roads: Butch Clark, AGIO, at (501) 682-2943, butch.clark@arkansas.gov
Airport runways: Bruce Spear, at (202) 366-8870

Railroads: Sharon Baker, AGIO, at (501) 569-2066, sharon.baker@arkansashighways.com

Notes: Partial Coverage Available for Street Centerlines, availability will be made known

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to RSC/Contractors as counties are needed.

Hydrography (rivers, streams, lakes, and shorelines)

Dataset name: High Resolution: National Hydrography Dataset

Data currentness: 2/1/2015

Accuracy/Scale: 1:24,000/1:12,000

Horizontal datum: NAD 83 UTM – Zone 15N Fee associated? No

Available for redistribution? Yes

Are hydrography names part of the dataset? Yes, where available Dataset source: AGIO, <http://gis.arkansas.gov/>

Dataset contact: Shelby Johnson, AGIO, at (501) 682-2767, shelby.johnson@arkansas.gov

Notes: The National Hydrography Dataset also is available through USGS;

see <http://nhd.usgs.gov>.

Political boundaries (county, municipal)

Dataset name: County Boundary, City Limit

Data currentness: county-10/2014; cities-10/2016

Accuracy/Scale: 1:12,000

Horizontal datum: NAD 83 UTM – Zone 15N Fee associated? No

Available for redistribution? Yes

Dataset source: AGIO, <http://gis.arkansas.gov/>

Dataset contact: Mapping Section, Arkansas State Highway and Transportation Department, at (501) 569-2205,

Notes: Extracted from Arkansas Highway and Transportation Department county mapping files

Publicly owned lands (national, state, and local parks, forests, etc)

Dataset name: Public Land Boundaries (AHTD), Wildlife Management Areas 2005 (AGFC)

Data currentness: public land-2015; wildlife management-on-going updates

Accuracy/Scale: Best Available (varies)

Horizontal datum: NAD 83 UTM – Zone 15N Fee associated? No

Available for redistribution? Yes

Dataset source: AGIO, <http://gis.arkansas.gov/>

Dataset contact: Public Land Boundaries - Sharon Baker, State Highway Department, at (501) 569-2066, sharon.baker@arkansashighways.com

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Wildlife Management Areas – Tracy Moy, Arkansas Game & Fish Commission,

(501) 223-6336, tjmoy@agfc.state.ar.us

Public land survey system (PLSS) (township and section lines)

Dataset name: PLSS 24k Township Range, Public Land Survey - Sections

Data currentness: Township Range – 2014; Sections 10/2014

Accuracy/Scale: 1:24,000

Horizontal datum: NAD 83 UTM – Zone 15N Fee associated? No

Available for redistribution? Yes

Dataset source: AGIO, <http://gis.arkansas.gov/>

Dataset contact: Rachel Hanley, Arkansas State Highway and Transportation Department at (501) 569-2206

Cadastral (parcels)

Dataset name: Parcel Polygon and Centroid

Data currentness: Polygons – 07/03/2014; Centroids- 10/17/2016 Accuracy/Scale: Under construction

Horizontal datum: NAD 83 UTM – Zone 15N Fee associated? No

Available for redistribution? Yes

Dataset source: AGIO, <http://gis.arkansas.gov/>

Dataset contact: Shelby Johnson, AGIO, at (501) 682-2767, shelby.johnson@arkansas.gov

Terrain (elevation)

Dataset name: 2006 Five Meter Resolution DEM, raw x,y,z ASCII files, 5 meter post spacing

Data currentness: 2006

Accuracy/Scale: 5 meter horizontal/7.6 meter vertical accuracy at 95% confidence Vertical datum: NAVD 88

Fee associated? No

Available for redistribution? Yes

Dataset source: AGIO, <http://gis.arkansas.gov/>

Dataset contact: Shelby Johnson, AGIO, at (501) 682-2767, shelby.johnson@arkansas.gov

Notes: See additional information under AGIO Statement Regarding 2006 Elevation Data

below. Not suitable for detailed hydrologic analysis. A LiDAR data inventory for the state is currently being assembled.

Data Distribution Process for State Data

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All GIS data for FEMA’s Risk MAP Program will be obtained through the AGIO. The AGIO serves as the State GIS Coordinating entity and any datasets that will be used will come through this office and/or the State’s Spatial Data Clearinghouse GeoStor, which is maintained by the AGIO. Data available through the AGIO can be used without licensing considerations or fees.

Arkansas GIS Gateway: <http://www.gis.state.ar.us/> GeoStor: <http://gis.arkansas.gov/>

Useful Risk MAP Discovery Data Sources

Preliminary information on Discovery data sources is provided in this document to reduce the level of effort needed on each subsequent Discovery data collection effort. Coordination with local community sponsors for additional local data still remains an integral part of Discovery and local data should be used where appropriate.

The *National Discovery Data Coordination Procedure* document contains information on data resources available from other Federal agencies (OFAs), including those that FEMA maintains at the national level, and should be used in conjunction with this *State Geospatial Data Coordination Procedure* document. In addition, FEMA and its contractors have created a geospatial Discovery Data Repository to host data that are not readily accessible through direct sources such as Web sites or subscription services and/or are not updated on a frequent basis. Instructions on accessing the Discovery Data Repository are given in the *National Discovery Data Coordination Procedure* document.

Table 1 identifies data resources that are available at the regional and State levels, and also if there are no data available other than the national datasets. Resources in this table have been identified as appropriate for Discovery projects and may not represent the best data sources for FIRM production (please see the Major State Holdings section of this document for geospatial data that meet FIRM production requirements).

Table 1. Discovery Data Sources

Data	Data Source	Location
Watershed boundaries	Arkansas NRCS	http://gis.arkansas.gov/ Shelby Johnson, AGIO, at (501) 682-2767, shelby.johnson@arkansas.gov
	National	See <i>National Discovery Data Coordination Procedure</i>
Jurisdictional boundaries	Arkansas GIS Office	http://gis.arkansas.gov/ Shelby Johnson, AGIO, at (501) 682-2767, shelby.johnson@arkansas.gov
	National	See <i>National Discovery Data Coordination Procedure</i>
Tribal land boundaries	National	There are no Federal tribal lands in the State of Arkansas

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Data	Data Source	Location
State lands	Arkansas GIS Office	http://gis.arkansas.gov/
Federal lands	National	See <i>National Discovery Data Coordination Procedure</i>
Major roads	Arkansas Department of Transportation	http://www.arkansashighways.com/ Greg Nation Survey Division Head greg.nation@arkansashighways.com (501) 569-2406
	Arkansas GIS Office	http://gis.arkansas.gov/
	National	See <i>National Discovery Data Coordination Procedure</i>
Streams	Arkansas GIS Office	http://gis.arkansas.gov/
	National	See <i>National Discovery Data Coordination Procedure</i>
Coastal Barrier Resource Areas	N/A	N/A
Coordinated Needs Management Strategy	National	See <i>National Discovery Data Coordination Procedure</i>
Topographic/bathymetric data	Arkansas GIS Office	http://gis.arkansas.gov/
	National	See <i>National Discovery Data Coordination Procedure</i>
AAL data from Hazus	National	See <i>National Discovery Data Coordination Procedure</i>
Coverage areas for known community and Tribal risk assessment data	Local	Local
Status of Hazard Mitigation Plans	National	See <i>National Discovery Data Coordination Procedure</i>
Flood control structure data	Arkansas GIS Office	http://gis.arkansas.gov/
	National	See <i>National Discovery Data Coordination Procedure</i>
Locations of stream gages	Arkansas GIS Office	http://gis.arkansas.gov/
	National	See <i>National Discovery Data Coordination Procedure</i>

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Data	Data Source	Location
Proposed discussion areas, problem areas, areas of proposed mitigation projects	Local	Local
Land use and soil information	Arkansas GIS Office National	http://gis.arkansas.gov/ <i>See National Discovery Data Coordination Procedure</i>
Reference points to locate areas with flooding issues	Local	Local
Hydraulic structures	Arkansas Department of Transportation National	http://www.arkansashighways.com/ <i>See National Discovery Data Coordination Procedure</i>
Coastal structures, including flood protection structures, shoreline structures, manmade embankments, surge conveyance pathways, and shoreline change data	N/A	N/A
Local structure and topographic data from the existing hazard mitigation plans	Local	Local
Historic inundation areas and high water marks	Regional	Discovery Data Repository
Clusters or locations of Individual Assistance/Public Assistance grants and locations of grant projects completed, planned, or underway	National	<i>See National Discovery Data Coordination Procedure</i>
Locations of projects and structures completed or planned for FEMA Hazard Mitigation Assistance grant programs or mitigation funds from other agencies or entities, such as the Small Business Administration	National	<i>See National Discovery Data Coordination Procedure</i>
Other information on FEMA grants	Local	Local
Any data deficiencies identified in hazard mitigation plans	Local	Local

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Data	Data Source	Location
Information from FloodSmart on market penetration	National	See <i>National Discovery Data Coordination Procedure</i>
Community Assistance Visits / Community Assistance Contacts	National	See <i>National Discovery Data Coordination Procedure</i>
Community Rating System class information	National	See <i>National Discovery Data Coordination Procedure</i>
Information from other Federal agencies	National	See <i>National Discovery Data Coordination Procedure</i>
Information from State agencies, non-profit organizations, universities, etc.	Local	Local
Current community plans, ordinances, or programs to alleviate flooding or manage stormwater	National	See <i>National Discovery Data Coordination Procedure</i>
Other known hazards with geographical boundaries (e.g., earthquake faults)	National	See <i>National Discovery Data Coordination Procedure</i>
Information on active disasters	National	See <i>National Discovery Data Coordination Procedure</i>
Campgrounds, recreational areas, emergency access routes, etc.	Arkansas Department of Emergency Management	http://www.adem.arkansas.gov/AEM/index.php Clay Bewley Central Area Coordinator 501-683-6734
	National	See <i>National Discovery Data Coordination Procedure</i>
Any other data that might be appropriate	Local	Local

Federal Nationwide Geospatial Data Holdings

Information about nationwide holdings and programs of Federal agencies is available from the Mapping Information Platform web site at

<https://hazards.fema.gov/femportal/docs/ProgFacts1.pdf>.

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Finding and Accessing Other Existing Geospatial Data

Find below information about and links to ways of searching for additional geospatial data available for the State. These capabilities can be useful for finding geospatial data other than the statewide and Federal data listed above, including those of special governments, counties and parishes, municipalities, tribes, universities, and other organizations.

Clearinghouses and Inventories for the State **Arkansas GIS Gateway:**

<http://www.gis.state.ar.us/> **GeoStor:** <http://gis.arkansas.gov/>

Contact: Shelby Johnson, AGIO, at (501) 682-2767, shelby.johnson@arkansas.gov,

3D Elevation Program

The U.S. Geological Survey (USGS) National Geospatial Program is developing the [3D Elevation Program \(3DEP\)](#) to respond to growing needs for high-quality topographic data and for a wide range of other three-dimensional (3D) representations of the Nation's natural and constructed features. The primary goal of 3DEP is to systematically collect 3D elevation data in the form of light detection and ranging (lidar) data over the conterminous United States, Hawaii, and the U.S. territories, with data acquired over an 8-year period. Interferometric synthetic aperture radar (IfSAR) data will be acquired for Alaska, where cloud cover and remote locations preclude the use of lidar in much of the State. The 3DEP initiative is based on the results of the National Enhanced Elevation Assessment that documented more than 600 business uses across 34 Federal agencies, all 50 States, selected local government and Tribal offices, and private and nonprofit organizations.

Geospatial One-Stop

Geospatial One-Stop, available at <http://www.data.gov>, provides access to geospatial data from many sources. Two parts of the site that should be investigated are the “data categories” for existing data and the “marketplace” for data that are planned or in-work and for potential partners for new data collection activities.

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Working with People

Useful State and Federal Contacts

The main contacts for the State's geospatial activities and Federal agencies' representatives in the State are available on the Mapping Information Platform web site

at <https://hazards.fema.gov/contacts/statecontacts/contacts.asp?page=AR>.

Involving the State's Geospatial Coordinator in Flood Studies

The State has strong involvement with FEMA on Discovery efforts related to identifying base map and terrain data suitable for flood mapping purposes.

Email correspondence is requested to be sent from Region VI and the RSC to the State representative to keep them up to date on Flood Mapping activities in the State of Arkansas.

State Coordination Process for Building Geospatial Partnerships

The Arkansas Geographic Information Systems Board provides basic spatial data infrastructure, coordinates geographic information activities, and creates short- and long-term strategies that will result in improved decision making, effective asset management, and reduced costs. The State GIS Board works closely with the Arkansas Geographic Information Office. Information about the Board can be found at

<http://www.gis.arkansas.gov/GISB/gisb.html>

Finding Local Geospatial Contacts

Local contacts, including those from special government districts (for example, a regional planning commission); counties, parishes, or equivalent governments; tribes, municipal governments; and other organizations (for example, local universities) also have geospatial data that can help a Flood Insurance Study. Contact information is available from the FEMA archive and web searches at government link portals such as <http://www.statelocalgov.net>.

The State has regional planning commissions/councils of government. Generally, cities play a larger role in GIS development than do the counties.

Local contacts for each of the counties/cities that develop and or maintain spatial data is identified to the Production and Technical Services contractor during the Discovery period.

The State maintains a statewide GIS contacts list in a Web accessible format at

<http://www.gis.state.ar.us>

The levels of government in the list are:

- a. County
- b. State

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Provide Feedback on This Procedure

When you find information in this Procedure or in other FEMA or State resources that are outdated, please tell the geospatial data coordination lead in the RSC what was wrong and the correct information (if you know it). Use the contact information for the lead listed in the section Purpose of the Procedure.

The lead will use your feedback to update this Procedure.

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Other Useful Information

AGIO Statement Regarding 2006 Elevation Data

(The following statement was provided by the Arkansas Geographic Information Office)

2006 Digital Elevation Model Product Limitations and Appropriate Use

In 2005 the Arkansas State Land Information Board (ASLIB) requested the Arkansas Geographic Information Office (AGIO) prepare for an update of the digital orthoimagery of the State. Subsequently, the AGIO entered into a contract with EarthData International to conduct a 1-m statewide orthoimagery acquisition utilizing a digital sensor (Leica ADS40) during the 2006 leaf off flying season. Due to the technology inherent in the ADS40 sensor a digital elevation model (DEM) was also obtained at the same time as the imagery, producing a 5m (5m post spacing xyz file) DEM.

The digital elevation model (DEM) being delivered as a part of the 2006 Arkansas Digital Ortho Program was generated for the purpose of increasing the horizontal accuracy of the orthoimagery product. The DEM being delivered shall meet the following specifications:

1: Vertical Accuracy shall meet or exceed 7.6 meters at a 95% confidence level
2: Horizontal Accuracy shall meet or exceed 6 meters at a 95% confidence level
3: Delivery Format shall be an ASCII point file containing xyz coordinates

Meeting this standard does ***not imply*** hydrologic integrity, and this data product is not suitable for detailed hydrologic analysis. For evaluation purposes the table below provides a comparison of the 5m product and other elevation data that are presently available in the State.

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Product	Vertical Accuracy	Horizontal Accuracy	Resolution / Post-Spacing	Source
30 meter DEM	7 meter RMSE	None published ¹	30 meter	USGS
10 meter DEM	7 meter RMSE ²	None published ¹	10 meter	USGS
5 meter DEM	3.88 meter RMSE ³	5 meter RMSE	5 meter	AGIO Arkansas Digital Ortho Program
1 meter LiDAR collect	15cm RMSE	3.08 meter RMSE	1 meter	These results are general and would be determined based upon flying height and sensor used

Users may wish to conduct additional value added processing for other purposes. Derived products such as contour intervals can be generated in numerous ways. To this end the AGIO and EarthData International will refrain from speculating what contour intervals might be achieved with additional processing. DEM users should refer to the ASPRS publication *Digital Elevation Model Technologies and Applications* to learn more about the appropriate uses of this DEM product.

The ASLIB and AGIO are providing the updated elevation data product with x, y, & z values to users. However, users should be warned that value added processing to increase accuracies, or to generate derived products, will require the addition of ground control, a revised aero-triangulation, and stereo compiled 3-Dimensional break-lines. These needs should be reviewed on a case by case basis and will require cost estimates from the private sector.

Contact Information: Shelby Johnson, GIS Program Manager, Arkansas Geographic Information Office, shelby.johnson@arkansas.gov.

¹ The USGS does not publish a horizontal accuracy for their DEMs. This information can be tracked on a Quad by Quad basis through the USGS.

² Most 10m DEMs in the State of Arkansas are interpolated from the 30m DEMs, therefore their vertical accuracy is assumed to be equal to the accuracy of the original 30m DEMs.

³ These specifications exceed all statewide DEM specifications currently available.