

State of Arkansas

Cadastral Spatial Data Infrastructure Business Plan



Prepared by:

**The Arkansas Assessment Coordination Department and
The Arkansas Geographic Information Office**

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State of Arkansas Cadastral NSDI Business Plan

Program Overview

The County Assessor Mapping Program (CAMP) is a statewide initiative to implement digital cadastral mapping in all 75 Assessor offices in Arkansas. In 2002, the Arkansas Assessment Coordination Department (AACD) and the Arkansas Geographic Information Office (AGIO) formed a partnership to begin this task. The program is available to any county. Participating counties purchase a state specific computer and geographic information system software, and they are reimbursed by the state for those expenses. The state also provides training and technical support needed to complete mapping ownership records at no fee to the participating counties. The program is subsidized by the Arkansas Reappraisal Trust Fund established to aid counties in real appraisal of real estate property. The only requirement from the county is that they provide an employee from their office for training and data creation. The program was initiated in November of 2002. Since its inception 73 counties have joined the program. Sixty-eight of these counties have received training and are currently building their digital cadastre data. Prior to the implementation of this program in 2002 less than three counties were conducting digital cadastral data development, none were standardized and none of these documented metadata. At present 95% of Arkansas counties are developing digital cadastral data in a consistent and standardized manner. The program participant status is reported each month at the following web site http://www.gis.state.ar.us/Programs/Programs_current/CAMP/status.htm

A parallel activity has been the development of a statewide digital cadastral data standard. This standard when fully adopted will represent a statewide implementation of the Federal Geographic Data Committee Cadastral Core. The state standard has gone through the official promulgation process in Arkansas and is now an Official State Regulation. The standard has been published at <http://www.nationalcad.org> and http://www.gis.state.ar.us/Documents/Standards_index.htm

The existing program has already demonstrated outstanding success. In less than a three year period the state went from three counties with GIS in house to 73 of 75 counties developing standardized cadastral data. Through the strong leadership of the AGIO and the AACD and under the leadership of the County Assessors the program has demonstrated success in many areas of the state.

Managing Agency and Contact Information

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Participants

The County Assessor Mapper is the individual designated by the County Assessor with the primary responsibility to discover and map real estate property in their respective county. The Mapper serves as the local creator and maintainer of the Cadastral NSDI in Arkansas. They receive and interpret the legal deed document reflecting a parcel split transaction and update the map accordingly. They also receive and incorporate subdivision plats reflecting multiple splits in the existing parcel database. The Mapper acts as a service provider for appraisers by providing maps and data that support the appraisal work in the field.

The County Assessor is the elected official at the county level in Arkansas with the primary responsibility for taxation assessment on real estate property. This responsibility requires the Assessor Office to maintain the production database storing cadastral data for assessment purposes. The production databases in each county are maintained on a daily basis. These custodians are governed by Arkansas Law with statewide oversight designated to the Arkansas Assessment Coordination Department. The Assessor prepares files and submits a reappraisal plan to the Arkansas Assessment Coordination Department, and is responsible for executing the reappraisal plan.

The Arkansas Assessment Coordination Department under legislative authority provides oversight on the real estate appraisal and assessment work carried out by the County Assessor. The oversight authority includes four components; 1) the administrative management of the Arkansas Real Estate Reappraisal Trust Fund; 2) receipt of the county reappraisal management plan, 3) reimbursement of county reappraisal expenditures from the reappraisal trust fund; 4) audit and ratio studies to validate that reappraisal values are consistent with local market values. The Department provides leadership on professional development for County Assessors and their staff.

The Arkansas Geographic Information Office under legislative authority provides coordination and support of statewide geospatial initiatives. The Office employs one full time cadastral GIS specialist dedicated to the program. The office is responsible for administration and maintenance of GeoStor the state GIS data clearinghouse.

Parcel Data Inventory

1. Digital parcel attribute data

Arkansas County Assessors are required by state law to implement and maintain a Computer Assisted Mass Appraisal (CAMA) system. These databases contain the requisite attribute data necessary to publish the Cadastral NSDI in Arkansas.

2. Digital parcel mapping

A running inventory of the County Assessor Mapper is maintained by the Arkansas Geographic Information Office and the report is located at:

http://www.gis.state.ar.us/Programs/Programs_current/CAMP/status.htm

3. Availability of supporting data that meets stated standards

a. digital orthophotography – The Arkansas Geographic Information Office administers the Arkansas Digital Ortho Program. The objective of this program is to provide base level digital orthoimagery on a statewide basis every five years. Data produced under the program is available reflecting ground conditions in the following vintages: 1994-1997, 2000 - 2002 and most recently for 2006. The data is provided directly to the County Assessor by the Arkansas Geographic Information Office. The Arkansas Geographic Information Office is the state steward for this data.

c. geodetic control – This data is provided by the National Geodetic Survey and published through GeoStor. The data is provided to each county by the Arkansas Geographic Information Office. The National Geodetic Survey is the steward for this data.

d. corners of common control – At this time the State has not developed a formal strategy for pursuing the development of coordinate data for corners of common control. This effort would be led by the State Land Surveyor's Office which does not have the necessary funding to compile the data. The State Land Surveyor's Office is the state steward for this data.

e. hydrography – This US Geological Survey provides the National Hydro Dataset (NHD) to the Arkansas Geographic Information Office. The present vintage of the data is based upon the 1:24000 NHD. Specific plans for Principle Stewardship in the state and upgrades for scale and accuracy are contained elsewhere in the State's Strategic Plan for implementing the NSDI. The Arkansas Department of Environmental Quality is the state steward for this data.

f. transportation – This data is produced through the Arkansas Road Centerline File Program. The data is based upon 1:12,000 scale digital orthoimagery and augmentation by Global Positioning System data collection. The data is maintained locally by the counties and updates are provided to the Arkansas Geographic Information Office and in turn the County Assessor Office. Data through this program is complete and being maintained by 42 counties and an additional 31 counties are in production through grants provided by the Arkansas Road Centerline File Grant Program, administered by the Arkansas Geographic Information Office. The counties in the state are the front line stewards. The Arkansas Geographic Information Office acts as a statewide integrator for this data and serves as the state steward.

g. soils – This data is produced by the Natural Resource Conservation Service and is completed for sixty-nine counties. This data is the NRCS publication data. That data is provided to the Arkansas Geographic Information Office and the Assessment Coordination Department adds one attribute to the soils data to reflect the valuation multiplier assigned by the Department based upon a productivity index. This multiplier is used by the County Assessor to assess value for rural agriculture and timber land. This data represents the production soils data for tax assessment. The data is then loaded in

GeoStor for consumption by users. The six counties that do not have SSURGO certified soils are:

Sevier
Montgomery
Pike
Grant
Nevada
Drew

The Natural Resource Conservation Service is the steward for the publication soils data. The Arkansas Assessment Coordination Department is the steward for the production soils data used by the counties in tax assessment.

4. Integration of parcel data across jurisdictional Boundaries

The Arkansas Assessment Coordination Department and Arkansas Geographic Information Office are pursuing a joint strategy for parcel data integration. The process will work as follows: The County Assessors will submit complete copies of the Computer Assisted Mass Appraisal (CAMA) database which includes the Parcel Identification Number (PIN) and a complete copy of the cadastral geodatabase that includes the PIN. These submissions will occur twice each year in response to the Assessment Coordination Department's audit of each county reappraisal. The Assessment Coordination Department will forward the CAMA and geodatabase to the Arkansas Geographic Information Office. The Arkansas Geographic Information Office will join the CAMA data to the geodatabase and export to the State Cadastral standard. The outcome will be seamlessly merged into a statewide version and published in GeoStor.

5. Publication and availability of parcel data

All cadastral data in the standard are published via GeoStor twice each year. The data is available to users for download through the GeoStor metadata search interface and is also available as a web feature service. See <http://www.geostor.arkansas.gov> At this time 15 counties with parcel centroid point feature cadastral data are available for consumption by the public. This service is provided by the Arkansas Geographic Information Office at no fee to producers or consumers.

Training and Education

Training plan including description of

a) provider agency

Training for the County Assessor Mapping Program is based on a multi-tiered strategy leveraging the resources of the Assessment Coordination Department, the Arkansas Geographic Information Office and the County Assessor Association.

b) how training will be brought to the counties

The Assessment Coordination Department funds the training. These classes are taught by contract trainers and personnel from the Arkansas Geographic Information Office. The Arkansas Geographic Information Office follows this training with additional technical support and follow up training in the form of organized meetings and events for the

Mappers in the counties. The Office also continues a constant effort on a daily basis through phone, teleconference and net meetings via the Internet to individual offices to provide support on specific technical problems encountered. The formal events have been partially funded by Federal Geographic Data Committee Cooperative Agreement Grant funding and the Mid-America GIS Symposium. Counties continue to report that additional training is needed largely due to worker turn-over. The Assessment Coordination Department has acquired additional personnel to provide additional GIS support and this capability is growing to serve the cadastral mapping community.

c) subjects to be covered

The courses taught include: Introduction to ArcMap, Introduction to Cadastral Mapping, The FGDC Cadastral Core Content Standard, Introduction to CAMP program with specific curriculum covering Phase I and Phase II of the program. Informal support covers the gambit of GIS technical issues and occurs on a daily basis. This cadastral mapping support service is supplied by the Arkansas Geographic Information Office with additional support added by the Assessment Coordination Department.

Status of Phases

Phase 1 - Parcel Data Initial Collection and Conversion

Arkansas has developed a strong program based upon a shoe string approach and open participation. The initial conversion work at the county level is generated through a Phased approach.

The first phase involves acquiring hardware, software, spatial data, and training for the counties to place a point on structures/properties (utilizing digital orthophotography created through the Arkansas Digital Ortho Program) that are listed within the counties' computer assisted mass appraisal (CAMA) system and associate the proper parcel identification number (from the CAMA) to the point.

The second phase involves the counties mapping a "graphical" representation of the digital cadastre (as defined by Arkansas State Land Information Board AR Code). The digital cadastre polygon is then populated with the proper parcel identification number utilizing the points created during Phase One.

The short coming with the conversion approach outlined above is that counties lack additional resources to hire or issue conversion contracts to accelerate the conversion work. Counties with fewer resources have mappers assigned as part-time and often these positions respond to additional duties in the Assessor Office. The lack of a full time dedicated mapper is a need the state is attempting to solve. At this time however no solution exists without additional resources. The state is researching the possibility of subsidizing this position through the reappraisal process. Contract conversion firms are excellent solutions to conversion but the County needs to have in-house personnel to maintain the parcel data once conversion is completed.

Phase 2 - Publication

The publication format, attributes and publishing cycle for parcel data in Arkansas is based upon the FGDC Cadastral Data Core Content Standard. The publishing cycle has been at least once yearly when conversion is completed. Up to this point new additions are based on an ad hoc cycle. Those counties that have aggressively pursued conversion are published as often as they submit an update to the Arkansas Geographic Information Office. Beginning in 2007 this will be shifted to twice yearly coincident with the counties submission of CAMA data to the Arkansas Assessment Coordination Department.

Cadastral NSDI Reference Document

The Arkansas cadastral data development activity is guided by State Law with the specific sections copied below:

- AR Code 15-21-502 (6) - "Digital cadastre" means the storage and manipulation of computerized representations of parcel maps and linked parcel databases.
- AR Code 15-21-504 (2) (B) - The digital cadastre manages and provides access to cadastral information. Digital cadastre does not represent legal property boundary descriptions, nor is it suitable for boundary determination of the individual parcels included in the cadastre.

The State also adopted a statewide standard for cadastral data based upon the FGDC cadastral core content standard.

Phase 3 - Integration Identification

At present, staff from the Arkansas Geographic Information Office receives data from the counties, run basic quality control checks and then verify the publication attributes conform to the standard. Once each county file is determined conformant with the standard the data is integrated into the statewide publication dataset and then uploaded into GeoStor the state's GIS data clearinghouse. In the future the county files will be submitted to the Assessment Coordination Department along with the CAMA data. Their staff will then forward it to the Arkansas Geographic Information Office for quality control, integration and inclusion in the clearinghouse.

Contract Management

Contract management within the state is handled under a Memorandum of Understanding between the Arkansas Assessment Coordination Department, Arkansas Geographic Information Office and each participating county. This MOU is used to facilitate geospatial technology transfer in support of Arkansas assessors.

<http://www.gis.state.ar.us/Downloads/CAMP/Resources/Forms/MOU.pdf>

Hardware and Software

Hardware and software procurement is handled by each participating county and reimbursed by the Assessment Coordination Department. The state set the hardware and software guidelines for participating counties.

Hardware:

http://www.gis.state.ar.us/Downloads/CAMP/Resources/Forms/Dell_Quote_108427468.html

Software: ESRI ArcView current version

Funding Strategy

See reference to Arkansas MOU above. The county mapper position is funded by the County Assessor, hardware, software and training is funded by the Assessment Coordination Department. Additional training, technical support, supporting data, and the publication of web accessible cadastral data are funded by the Arkansas Geographic Information Office. The state is researching the feasibility of additional funding from the state to counties for more personnel. In the meantime both state agencies and the individual counties are opportunistic about pursuing additional outside funding resources and taking advantage of those when feasible. The statewide consistency with the data, technical, and business processes make Arkansas an outstanding candidate for completing a statewide cadastral database. This situation makes for a low risk, high return opportunity for federal, non-profit and private funding investments to accelerate and complete cadastral data throughout Arkansas.

County Contribution

See reference to Arkansas MOU.

Strategic Planning

Each county files a county wide reappraisal plan with the Arkansas Assessment Coordination Department. In the future, revisions to the plans will incorporate how the county intends to convert the parcel data into a digital product, through either in-house conversion or contract conversion by reappraisal firms or conversion contractors. These plans will also include how maintenance of that data will be handled, either in-house or outside contractor. The publication cycle will be coincident with the schedule set by the Assessment Coordination Department for submission twice each year to the state.