The State of Kansas
GIS Policy Board's
Data Access and Support Center (DASC)
FY2009 Annual Report

Outline:

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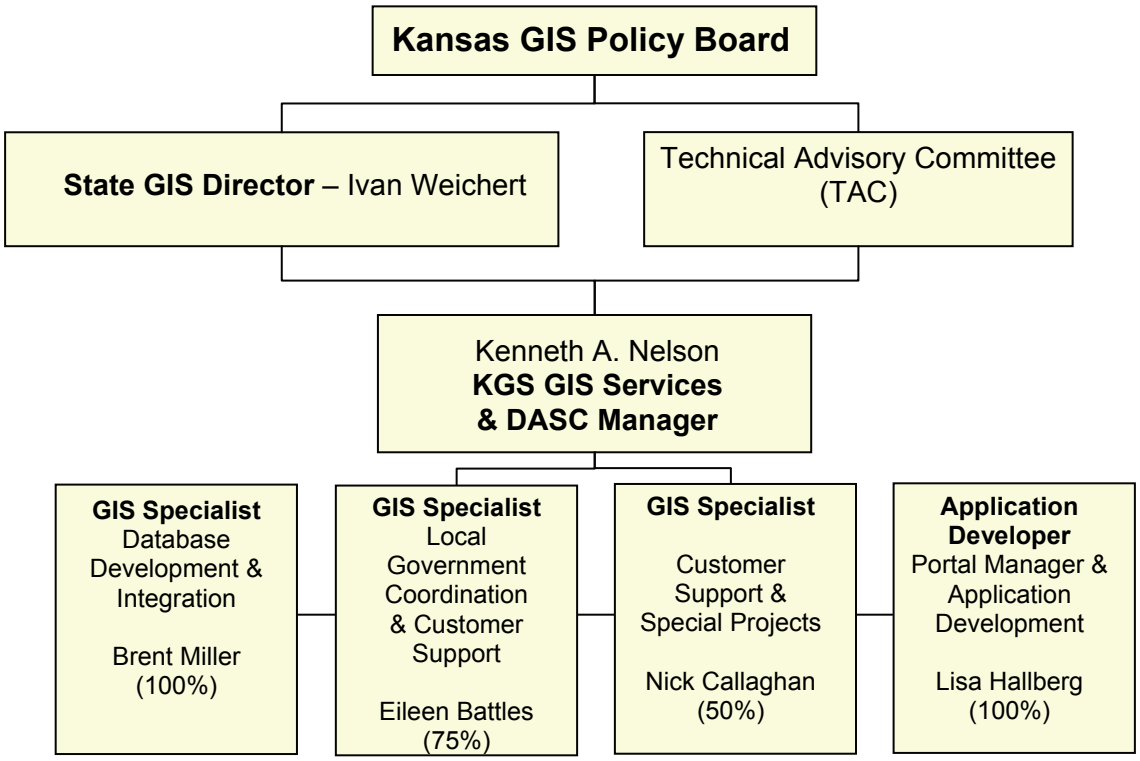
Introduction

The Data Access & Support Center (DASC) serves as the geospatial data clearinghouse for the State of Kansas. DASC was formed by the Kansas GIS Policy Board in 1991, and is located at the Kansas Geological Survey (KGS) at the University of Kansas. DASC operates under the direction of the Kansas GIS Director and Kansas GIS Policy Board, and provides a variety of services to the Kansas GIS community including:

- Database archival and distribution;
- Database quality assurance/quality control (QA/QC);
- Technical assistance;
- Geospatial metadata development assistance;
- Web application development and hosting;
- Database development;
- Cartographic development;
- Promotion of the Kansas GIS Initiative.

This report provides a detailed description of the services provided by DASC during State of Kansas Fiscal Year 2009 (July 1, 2008 - June 30, 2009).

DASC Organizational Chart



Executive Summary - Since its inception in 1991, the Data Access & Support Center (DASC) has served as the State of Kansas GIS Data Clearinghouse. Over the past several years, there has been a tremendous growth in the geospatial industry. Location-based services, in-car navigation systems, and smart-phones with GPS technology all serve as examples as to how geospatial technologies have been integrated into everyday life. Hardware and software components have become more affordable, and the cost of data acquisition and maintenance has steadily declined. Web-based GIS Server technologies have matured and user-friendly clients, such as GoogleMaps and GoogleEarth, have allowed geospatial data and technologies to permeate the Internet. Web-based GIS applications are no longer seen as 'gee-whiz' tools, but rather as enabling technologies necessary to support business processes, and the geographic data required to support these applications is in high-demand.

The growth in the availability and accessibility of geospatial technologies has highlighted the need for current and accurate data. Recognizing this fact, DASC continued to expand its role as an area-integrator and key contributor to the development and maintenance of strategic statewide data layers. During FY09, DASC focused its efforts on two primary data integration projects. With funding support from the United States Geological Survey (USGS), DASC continued the development and enhancement of the Kansas Road Centerline Database (KRCD) through the integration of local roads data. The initial release of the KRCD was in September, 2009 and included data from 19 county mapping programs. The integration of the local data significantly improved the quality of the statewide file. Work on the KRCD continued throughout the fiscal year, and a second release of the database, including data from over 30 counties, is planned for Fall, 2009. Through a partnership with the Kansas Legislative Research Division and the US Census Bureau, DASC led the collection and integration of voting district boundary updates in preparation for the 2010 Census. DASC was responsible for collecting voting district boundary updates from county clerks across the state, and integrating updates into the US Census Bureau's database. Through hard work and dedication of the DASC staff assigned to the project, DASC was able to get participation from all 105 Kansas counties.

Using the latest generation of GIS server technologies, and leveraging the Web 2.0 platform, DASC invested significant time and resources in the development of an extensible web services platform designed to make the Kansas Geodatabase more accessible to an ever-growing audience. In addition to the new DASC portal, under development during FY09, DASC also released a next generation mapping tool and associated web services to support the Kansas Bureau of Investigations (KBI) new Registered Offenders web site. In support of its new web services platform, DASC also made considerable strides in enhancing its IT architecture, including implementing ESRI's ArcGIS Server and ArcGIS Image Server technologies, and expanding its server and data storage capacity.

In addition to data integration and web application development activities, DASC continued perform database distribution services. DASC provides access to the Kansas Geodatabase in a variety of ways – prepackaged data made available for download from the DASC web site, web-based mapping services that can be easily integrated into desktop GIS software, and custom web mapping applications. During FY09, DASC distributed over 185,000 files, representing 5TB of data. Of these file, nearly 140,000 were downloaded from the DASC web site.

During FY09, DASC expanded its role in state and local government coordination and outreach activities. DASC staff gave presentations at GIS-related conferences and events across the state, and served on a variety of planning committees. DASC also played a key role in supporting the Homeland Security Regional GIS Projects being conducted throughout the state. DASC staff attended numerous meetings and conducted GIS data inventories with 22 counties during the fiscal year. Related to this effort, DASC also expanded its local data backup program and now serves over 80 counties across the state.

The remainder of this report provides a detailed description of DASC's objectives and accomplishments during FY09, and identifies initiatives and direction for the coming year.

Funding

DASC relies on three primary funding sources to support the variety of services it offers. These funding sources include the annual baseline funding provided by the State of Kansas Department of Administration (KDA) Division of Information Systems and Communications (DISC), in-kind support provided by the Kansas Geological Survey (KGS), and fee-for-service activities. The FY09 baseline funding provided by DISC was $246,316. The DISC funding provided salary support for the following positions: 2.25 full-time GIS specialists; one full-time web application developer; and a small percentage of the DASC Manager's salary. The baseline funding also helped cover costs of hardware and software acquisition, maintenance fees, and limited in-state and out-of-state travel. KGS provides operational support for DASC in the form of office space, telecommunications, use of KGS vehicles, and access to computer support staff and IT infrastructure.

In addition to the annual funding provided by DISC and the operational support provided by KGS, DASC also generates revenue through fee-for-service activities and grant funding opportunities. The revenue generated by these activities (usually referred to as "additional initiatives" or "secondary services") broadens the scope of the DASC program, increases our capacity to provide service, and helps cover the rising hardware and software costs of providing IT-related services. Because the additional initiatives do not follow set fiscal calendars, the most effective way to quantify the level of activity within any given state fiscal year is to calculate the total salary expenses for the entire DASC staff, not just those funded by the annual contract. The total DASC staff expenses (gross salary+fringe benefits) for FY2009 exceeded $300,000. This total staffing expense fluctuates annually depending on the amount of fee-for-service or grant-related activity. Considering the various funding sources, the total financial commitment required to fund the DASC operation during FY09 exceeded $350,000.

DASC's baseline funding support has remained stagnant for the past six fiscal years. While DASC has been successful in acquiring additional funding through fee-for-service activities, it is becoming challenging to provide a stable funding base that addresses all aspects of the program. As DASC continues to expand its services portfolio to include coordination activities, local government partnerships, database development and integration activities, and local data backup, in addition to its traditional data archival and distribution services, it will become increasingly important that the baseline funding support for the program increase to allow for effective delivery of service in all aspects of the program. DASC continues to work with the State of Kansas GIS Director on strategies for acquiring the necessary budget increase.

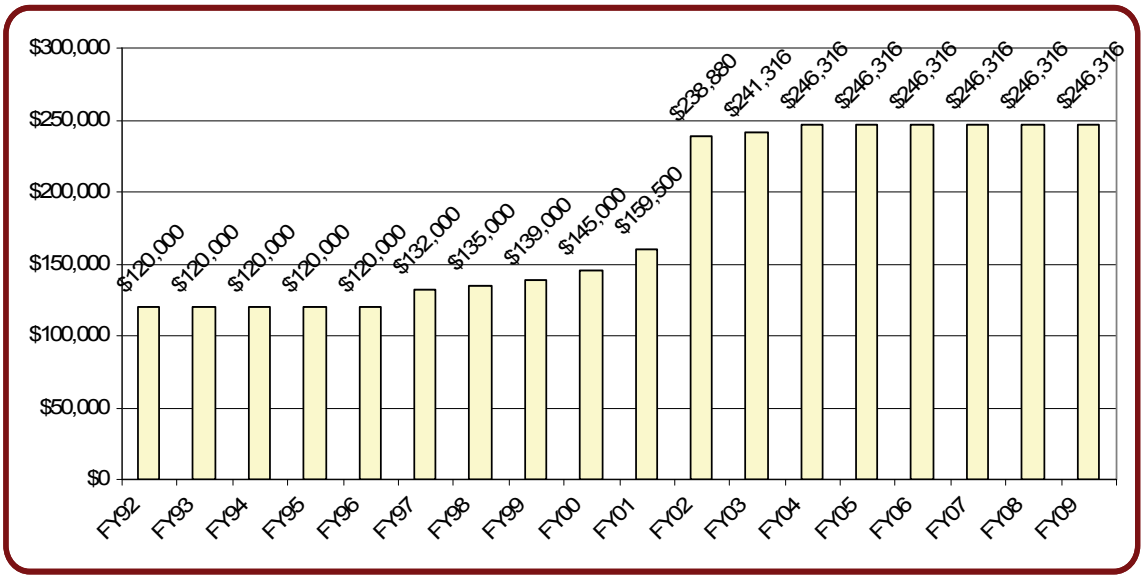


Figure 1 - DASC baseline budget from DISC

Description of Primary Services

- Review core data sets and check work of contracting agencies to assure compliance with contract specifications and Kansas database standards. Provide monthly and semi-annual database compliance reports to the Technical Advisory Committee (TAC).

- Respond to requests for basic conversion services from all federal/state/municipal tax-supported agencies/entities for the cost of media and shipping and handling. Basic conversion services shall include the processing of the Kansas Geodatabase in their native projection and tiling scheme into DASC-supported spatial data exchange formats and also include technical support for the loading and importation of the data. Respond to requests on a need/priority basis established by the DASC manager and periodically reviewed by the TAC. Maintain an accurate and complete log of all requests, work, and consultation.

- Provide basic conversion services to private sector or non-tax-supported organizations on a fee-for-service basis.

- Provide supplemental conversion services to all organizations on a fee-for-service basis as specified in the DASC fee schedule. Supplemental services shall include the alteration of native projection, tiling scheme, or topological structure. Respond to requests on a need/priority basis established by the TAC.

- Prepare, maintain, and distribute a Kansas Geodatabase catalog. Use various methods including the Kansas Geospatial Community Commons (KGCC) web site and GIS newsletters to distribute information on updates to the catalog.

- Maintain an on-line digital data library of Federal Geographic Data Committee (FGDC) compliant metadata and GIS databases. Maintain a National Spatial Data Infrastructure (NSDI) compliant clearinghouse node on the Internet; as per the agreement with the USGS NSDI program. Archive old databases as revised databases are received from custodial agencies. Publish new databases received from custodial agencies that meet Kansas quality standards.

- Work with the TAC and other appropriate groups on development, refinement and implementation of standards to facilitate data exchange and compatibility.

- Document problems, errors, deficiencies and needs of the core database using established procedures for error reporting and internal error detection. Recommend corrective action.

- Consult with the TAC on a regular basis regarding development and implementation of annual implementation plans, delivery of DASC services, coordination of agencies' database development projects and acquisition of digital data.

Database Archival and Distribution: A primary service DASC provides is the collection, testing, archival, and distribution of geospatial databases. DASC maintains records to track database deliveries (provider, description, metadata, number of files, file size, delivery date, update status), database testing and publication records, and database distribution statistics (number of files, file size by database, total file size, customer, delivery method). The following figures summarize database delivery, archival, and distribution activities for the past fiscal year. It is important to note that the figures below include files delivered to DASC under the local GIS data backup program. While these files are cataloged and archived by DASC, they do not undergo the standardized testing procedures as databases that are developed through the Kansas GIS Policy Board's annual database development program.

Figure 2 - Database Deliveries to DASC – Total number of files:

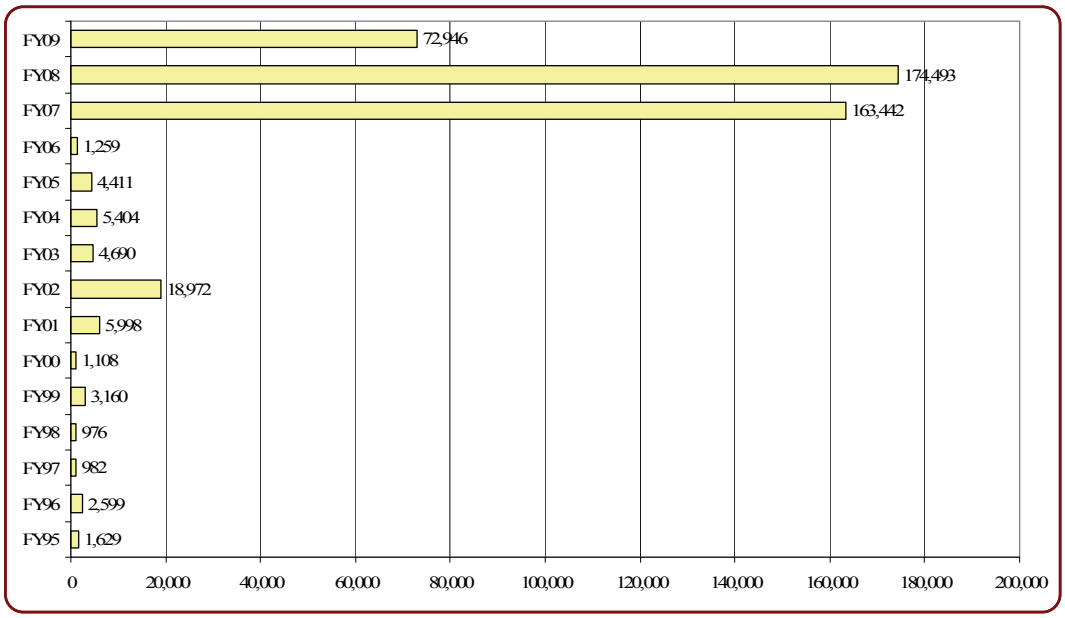


Figure 3 - Database Deliveries to DASC – Total file size delivered:
Note: FY95-FY06 in GB, FY07 in TB

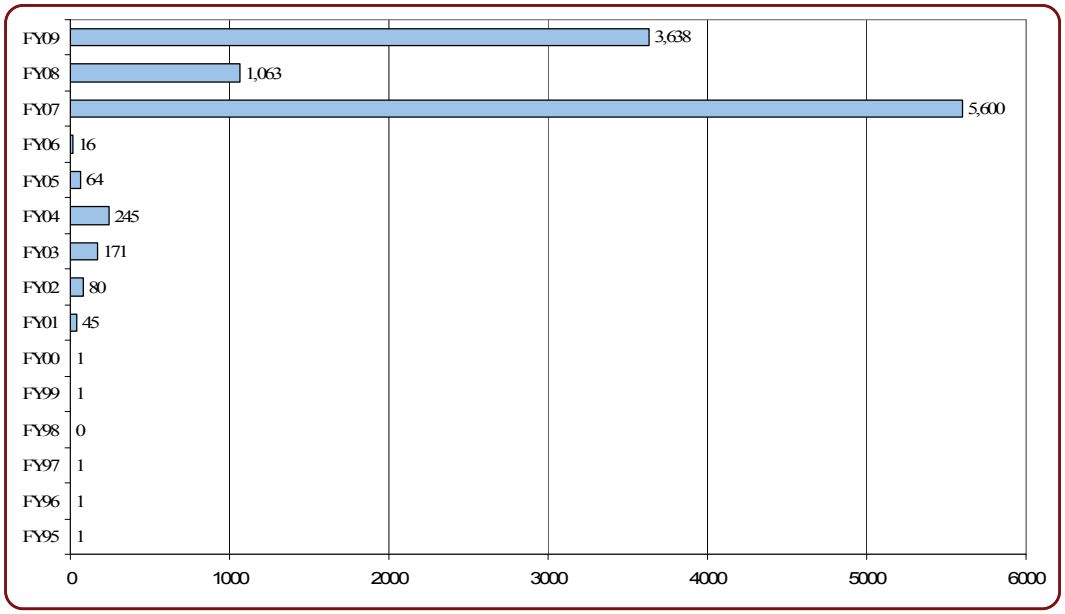


Figure 4 – Staff Assisted Database Requests

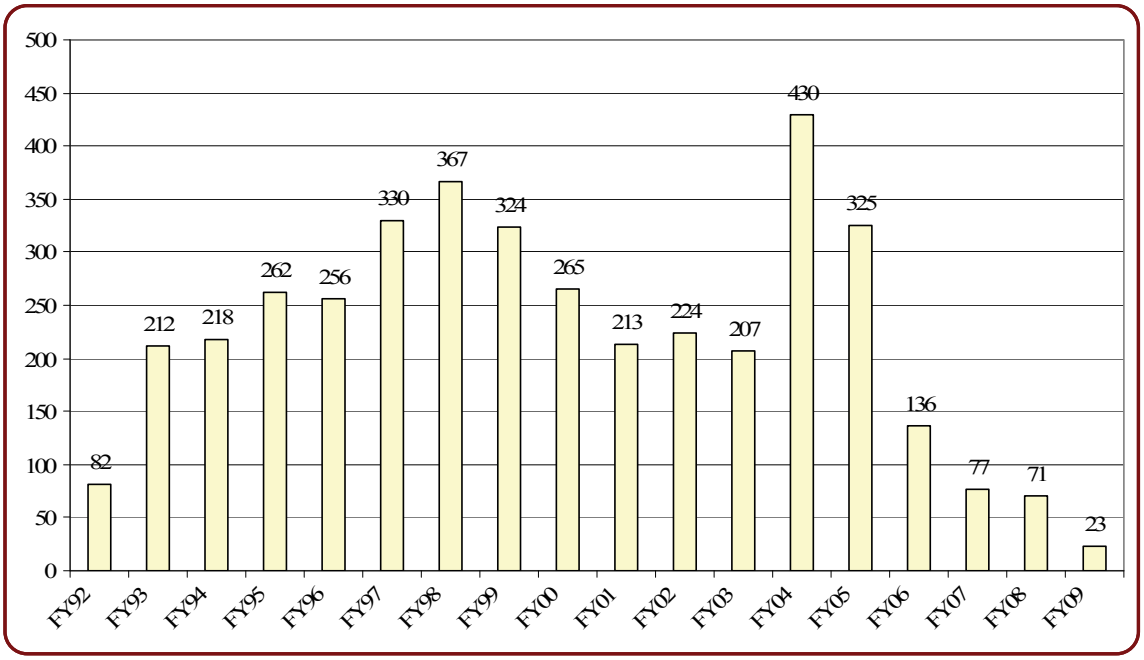


Figure 5 – Total Files Distributed: FY95 – FY09

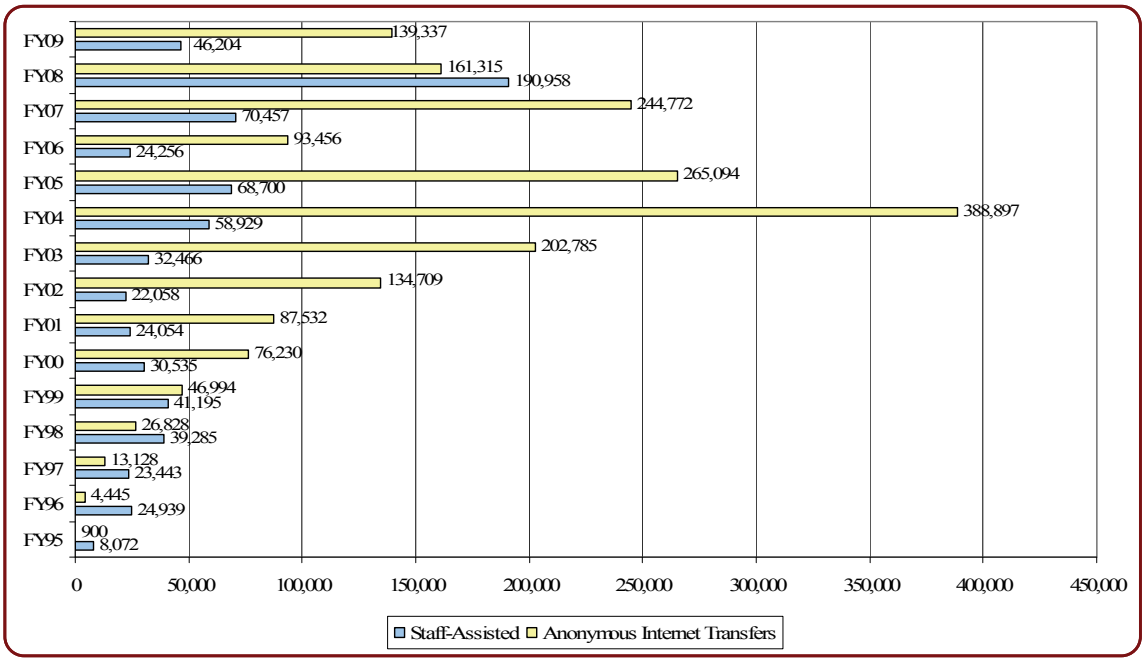
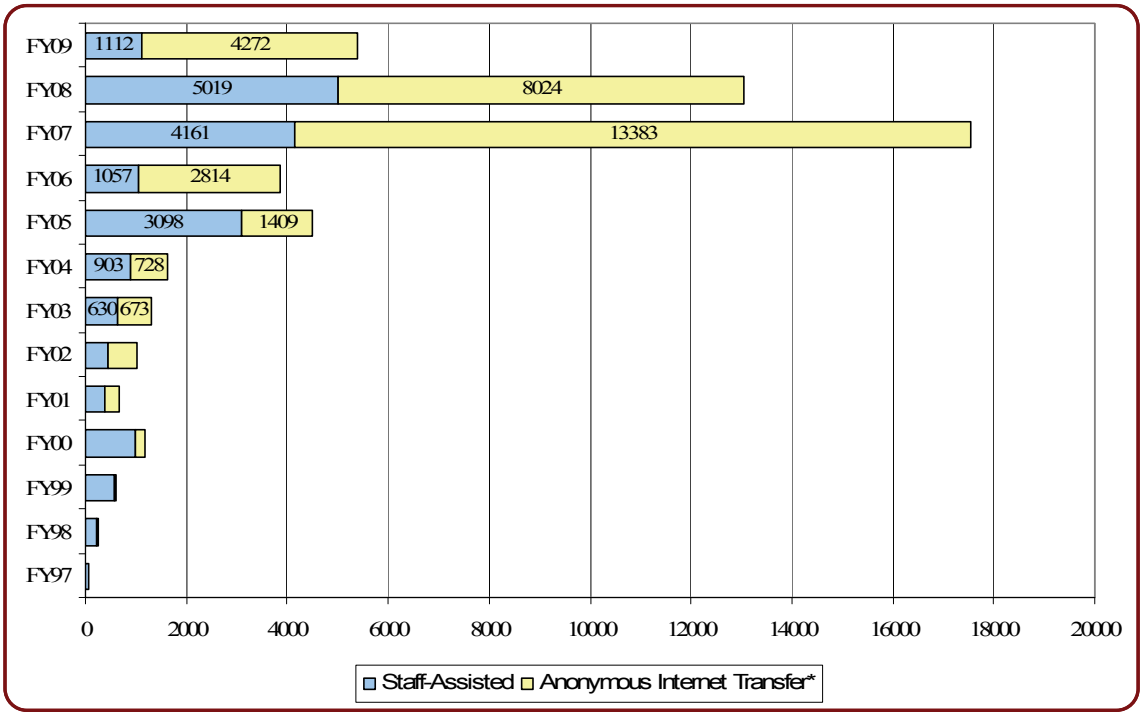


Figure 6 – Total Gigabytes/Terabytes Distributed



Description of Secondary Services

- Provide GIS products and services other than those related to the GIS Core Database (e.g. maps and technical support for the use or application of the data) to all organizations on a fee-for-service basis.

- Provide professional development opportunities for DASC staff through attendance at various meetings, conferences and workshops related to GIS technology and DASC services.

- Accept and make available other GIS and thematic data layers or metadata documentation that meet minimum standards established by the TAC and that have been approved for acceptance by the Board. Encourage database requestors to share end products derived from the core database.

- Promote GIS technology and use of the Kansas Geodatabase.

- Improve various databases acquired by the Board to produce a more usable GIS product. Convert and transform these databases as directed by the TAC.

- NOTE: Any fees derived from DASC activities shall be accounted for separately and shall be applied to the DASC operation as specified by the Board.

- Seek out additional funding sources to extend DASC's mission and services.

Coordination & Promotion Activities

Date	Event	Location	Activity
July 9, 2008	GPS Training	Hutchinson, KS	GPS training class for regional homeland security GIS projects
July 22, 2008	LIDAR Training at MARC Offices	Kansas City, MO	LIDAR Training
August 4-8, 2008	ESRI User Conference	San Diego, CA	Attended conference
September 8-11, 2008	National States Geographic Information Council (NSGIC) Conference	Keystone, CO	Attended conference
September 18, 2008	Kansas County Officials Association (KCOA) Annual Conference	Wichita, KS	DASC Display booth
September 29 - October 2, 2008	Kansas Association of Mappers (KAM) Conference	Hutchinson, KS	Gave two presentations, DASC display booth
October 21, 2009	MidAmerica Geographic Information Consortium (MAGIC) State GIS Clearinghouse Retreat	Columbia, MO	Participated in meeting
November 16-18, 2008	Kansas Association of Counties (KAC) Conference	Wichita, KS	Gave presentation, DASC display booth
November 18, 2008	South Central Homeland Security meeting - Sumner County	Wellington, KS	GIS Inventory & Local Data Backup transfer
December 1-5, 2008	Northwest Homeland Security Region Inventory visits - Cheyenne, Decatur, Gove, Logan, Norton, Phillips, Rawlins, Sheridan, Sherman, Thomas, and Wallace counties	Northwest Kansas	Project kick-off meetings for NW Homeland Security Region, conducted GIS data inventory, local data backup, etc.
December 11-12, 2008	SC Homeland Security Region - training classes	El Dorado, KS	Geodatabase & GPS training classes
January 8, 2009	Johnson County AIMS Coordinator's meeting	Olathe, KS	Kansas GIS Initiative/DASC Presentation
January 22, 2009	Senate Natural Resources Committee meeting	Topeka, KS	Briefing on Kansas GIS Initiative for legislative committee
January 27, 2009	Senate Local Government Committee meeting	Topeka, KS	Briefing on Kansas GIS Initiative for legislative committee
February 24, 2009	NW Homeland Security GIS Subcommittee meeting	Hoxie, KS	Project update presentation & discussion
February 24, 2009	Northwest Homeland Security meeting - Graham County	Hill City, KS	GIS Inventory & Local Data Backup transfer
February 25, 2009	House Agriculture & Natural Resources Committee meeting	Topeka, KS	Briefing on Kansas GIS Initiative for legislative committee
March 24-26, 2009	Kansas Rural Water Association (KRWA) Conference	Wichita, KS	DASC Display booth
March 26, 2009	South Central Homeland Security GIS Subcommittee meeting	Wichita, KS	Project update presentation & discussion
March 30, 2009	Northwest Homeland Security MVP meetings - Hoxie, Colby, Norton, and Hays		Presented DASC Initiatives & DASC Homeland Security role
April 9, 2009	Homeland Security Wolf Creek Exercise	Topeka, KS	GIS Support
April 27-30, 2009	Southwest Homeland Security Region Inventory visits - Clark, Ford, Greeley, Haskell, Hodgeman, Meade, Morton, Seward, Stanton, Stevens, and Wichita counties	Southwest Kansas	Project kick-off meetings for SW Homeland Security Region, conducted GIS data inventory, local data backup
May 14, 2009	Homeland Security Wolf Creek Exercise	Topeka, KS	GIS Support
May 18-19, 2009	US National Grid training	Salina, KS	Attended training class
May 27-28, 2009	USGS National Map Partnership Meeting	Fort Collins, CO	Participated in meeting
June 3, 2009	Homeland Security Wolf Creek Exercise	Topeka, KS	GIS Support
June 3, 2009	Kansas Geological Survey (KGS) Field Conference	Liberal, KS	Kansas GIS Initiative/DASC Presentation
June 8, 2009	Kansas Criminal Justice Information System (KCJIS) Conference	Topeka, KS	Kansas GIS Initiative/DASC Presentation
June 15-16, 2009	ESRI - GIS/CAMA Integration Studio	St. Charles, MO	Participated in application development studio

Additional Initiatives: Database Development & Integration

During FY09, DASC continued to expand its role as a database area integrator. Providing this service has become growing trend among state GIS data clearinghouses. Many of the databases required by GIS users originate at the local level, and local government is commonly the source of the most current and accurate data. Rather than duplicating this effort at the state level, a more effective approach is to leverage the data and/or information resources at the local level, and use them to update and enhance statewide layers. During FY09, DASC focused its database integration activities on the following projects.

Statewide Voting District Boundary Update - Working in collaboration with the Kansas Legislative Research Division and the US Census Bureau, DASC led the collection of voting district boundary updates from county clerks across the state. Updates were obtained in both paper and digital formats. Counties maintaining a voting districts layer in their GIS system, simply provided a copy of their digital data. Counties that didn't have a GIS file were provided a large-format plot and asked to annotate the boundary updates on the map. DASC was responsible for integrating the changes into the Census Bureau database and submitting them for review. As of the date of this report, all county updates have been processed, submitted, and approved the Census Bureau. The final verification phase of the project, scheduled for January – February, 2010, will provide an opportunity for the county clerks to review their voting district boundaries to ensure the updates were made correctly. DASC attended conferences such as the Kansas County Officials Association (KCOA) and the Kansas Association of Counties (KAC) to promote the project and was ultimately able to obtain participation from all 105 counties.

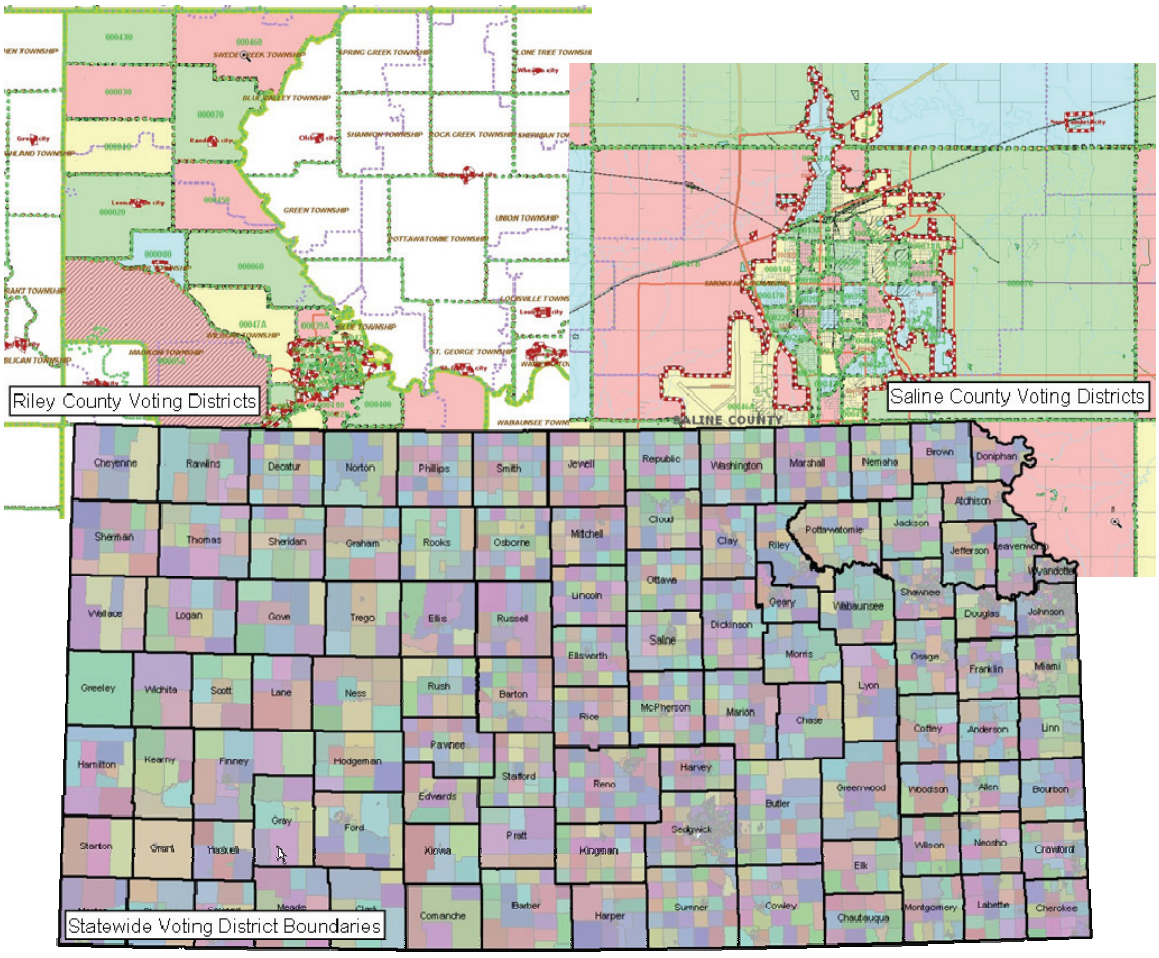


Figure 7 - Voting district boundary updates

Kansas Road Centerline Database - The Kansas Road Centerline Database (KRCD) combines the best available transportation data from state and local government into a seamless, statewide database. The statewide baseline data for the KRCD is the Kansas Department of Transportation's (KDOT) State and Non-State Systems. The goal of the KRCD project, is to continually update and improve this data through the integration of local roads data. Road centerlines are one of the most common data layers built and maintained by local government. Additionally, local road data often contains a high level of attribution (e.g., address ranges, road classification, road surface, speed limit, maintenance) that is difficult to maintain at the state level. With project funding from USGS, DASC continued its efforts on the development of the KRCD during FY09. In September, 2008, DASC released the initial version of the KRCD which included the integration of data from the following counties - Allen, Anderson, Barton, Bourbon, Brown, Crawford, Douglas, Gove, Edwards, Jackson, Logan, Pawnee, Riley, Scott, Sedgwick, Stafford, Thomas, Wabaunsee, and Wilson. All highway names have been standardized and attributed independently of city street names to enable the continuous symbolization of highway routes through towns and cities. Additionally, riding route information (secondary highway name) has been added to the database to make it possible to follow the entire route of a single highway (e.g., where US-40 runs concurrently with US-24). A second release of the database is planned for Fall, 2009 and will include data from the following counties - Franklin, Geary, Graham, Harvey, Haskell, Jefferson, Johnson, Kearny, Leavenworth, Pratt, Reno, Shawnee, Stanton, and Wyandotte, brining the total number counties integrated into the database to 33. Version 2 of the database will include all counties containing cities that have a population greater than 10,000, and the total number of updated road segments to over 50%.

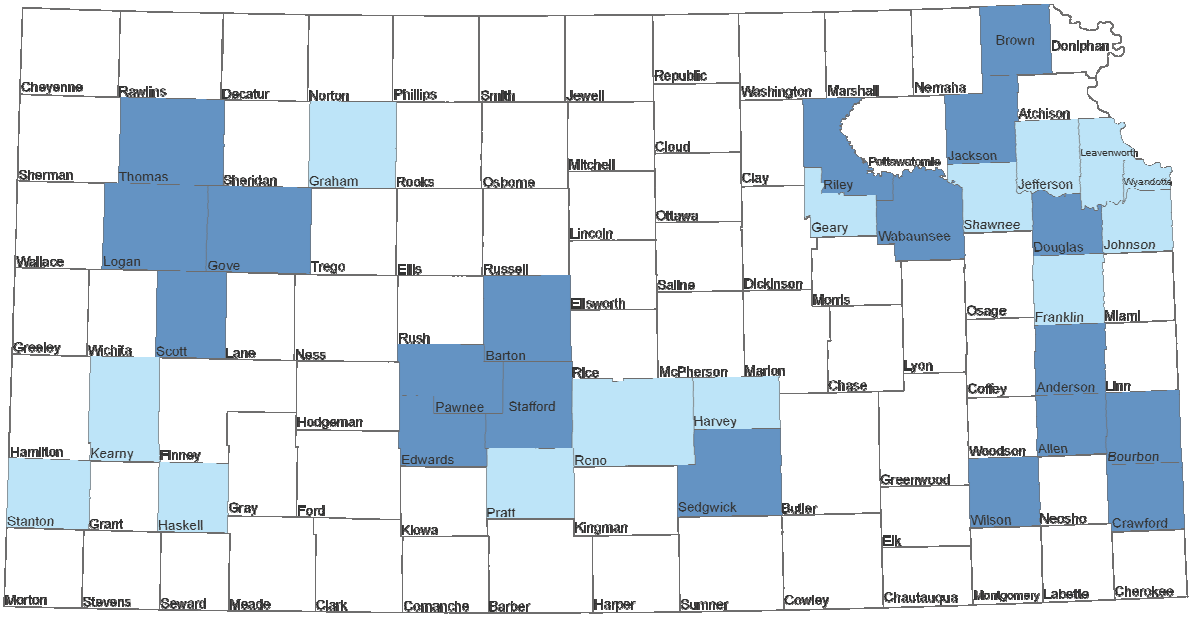


Figure 8 - County update status – dark blue = version 1, light blue = version 2

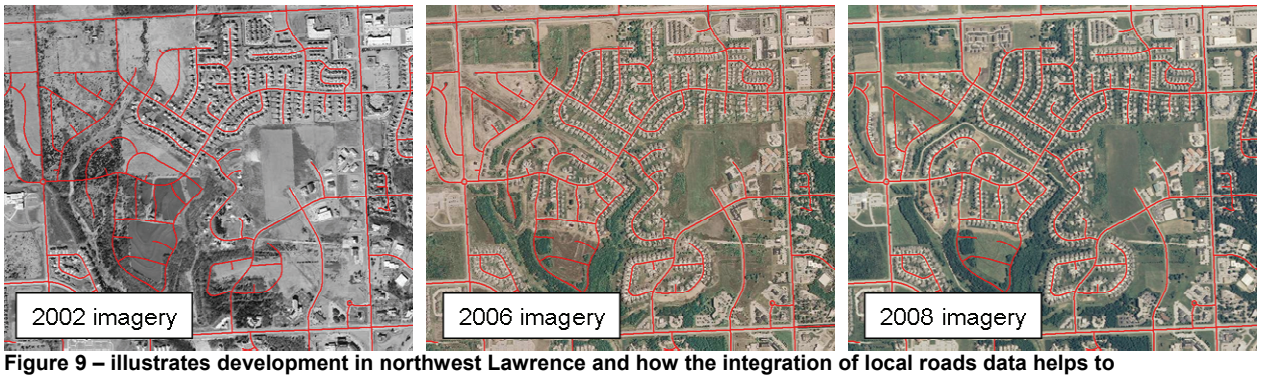


Figure 9 – illustrates development in northwest Lawrence and how the integration of local roads data helps to ensure data currency and completeness.

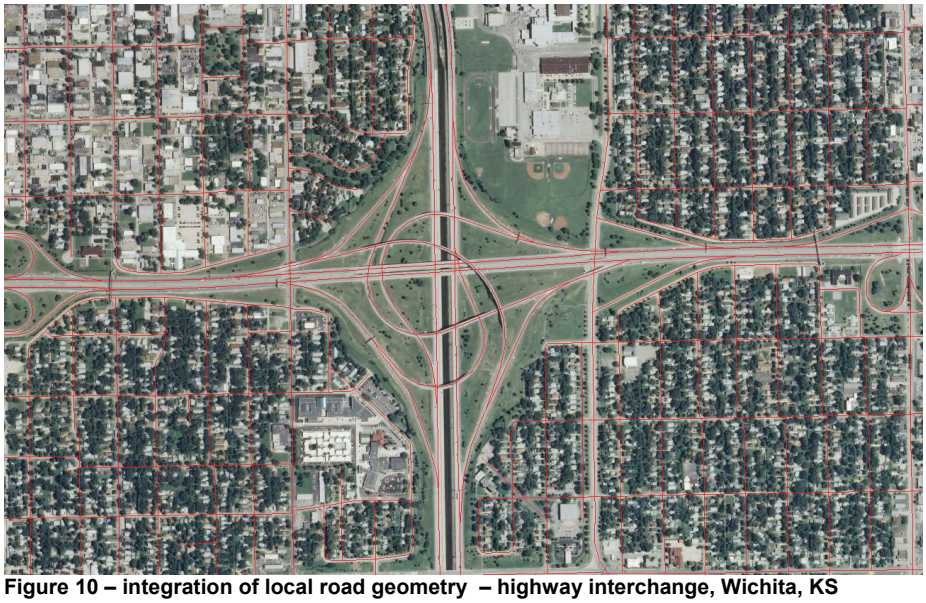


Figure 10 – integration of local road geometry – highway interchange, Wichita, KS

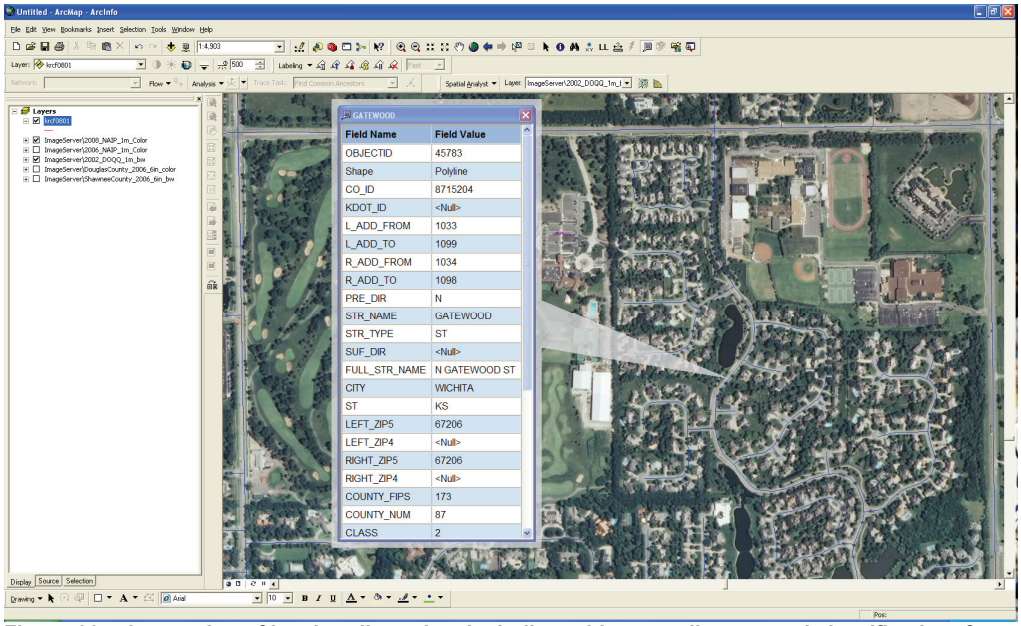


Figure 11 – integration of local attribute data including address attributes, road classification, & speed limit.

Local GIS Data Backup Program

In response to the natural disasters that occurred during the Summer of 2007, DASC, working in conjunction with the Kansas Homeland Security GIS Coordinator, developed a program to provide an off-site GIS data backup service to local governments across the state. The service is designed to provide backup redundancy for local mapping data, and to facilitate the collection and delivery of this data to the State Emergency Operations Center (EOC) for planning and response activities. Local governments enrolled in the data backup program can provide data on external hard drive, via DASC's secure FTP server, or by pushing database updates directly into an ArcSDE/Oracle account on DASC's database server. Typically, counties use an external hard drive for the initial data transfer and utilize the FTP server for incremental updates. During FY2009, DASC tied the data backup program to the Homeland Security Regional GIS Projects that were being conducted throughout the state. The first phase of the regional projects is to perform a GIS data inventory, and then to offer the data backup service to the counties within each homeland security region. The coordination of these two efforts led to significant growth in participation in the data backup program. During FY2009, DASC developed a web site with guidelines and tips on how to best organize data for the backup program. DASC also implemented a new, secure FTP site and established accounts for all program participants. Currently, there are 81 counties participating in the backup program and 800,000+ files, representing over 2.2 TB of data stored at DASC.

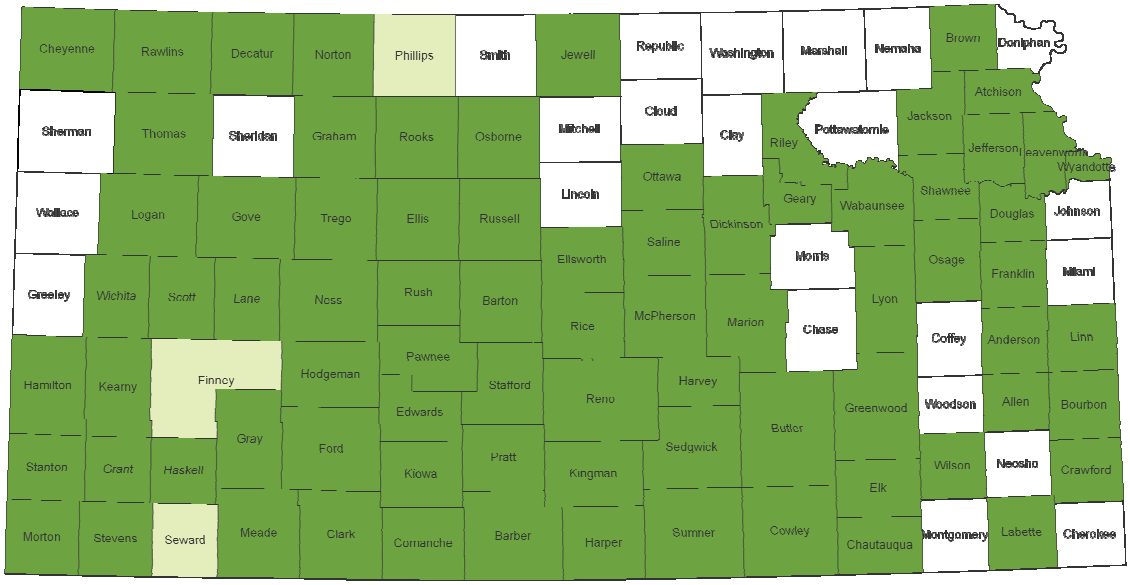


Figure 12 - Local data backup by county - data stored at DASC (dark green), in-progress (light green)

Web Services

During FY09, DASC continued to promote its web services initiative. The goal of this initiative is to provide cost-effective geospatial web services to state and local government. Application development and hosting services are provided on a fee-for service basis. The fees charged for these services are used to cover personnel expenses and to support hardware and software infrastructure.

Applications hosted during FY2009:

- Historical Property Inventory – Kansas State Historical Society (KSHS)
- Kansas Registered Offenders - Kansas Bureau of Investigation (KBI)
- RecFinder – Statewide recreation resources (KDWP/KSU)
- Archeological Spatial Data Server - KSHS
- Find My Elected Officials - Kansas Legislative Research Division (KLRD)
- Kansas Green Report - Kansas Applied Remote Sensing (KARS) Program
- Pharmfinder - Kansas Dept. of Health & Environment (KDHE)
- Douglas County Property Valuation Viewer - Douglas County, KS
- Shawnee County Public Access GIS Viewer - Shawnee County, Kansas
- Watershed Project Management System v2.0 – Kansas Water Office (KWO)
- NEKES Map Viewer - Northeast Kansas Environmental Services
- Cost Share Management System Map Viewer - State Conservation Commission (SCC)
- KAWS Map Viewer Kansas Alliance for Wetlands & Streams
- Floodplain Mapping Interactive Mapping System, Kansas Department of Agriculture (KDA)
- Kansas MapMaker - Kansas Geolocator, Kansas MapServer, Kansas ImageViewer, Kansas Land Cover, Kansas Aquifers, and Kansas Basemap - general purpose data viewing applications developed and hosted by DASC

Applications under development/enhancement during FY2009:

- KBI Registered Offenders v2.0 – KBI, Kansas.Gov
- DASC REST Mapping API
- Water Use Filing Reporting System - Kansas Department of Agriculture/Division of Water Resources (KDA/DWR)
- Historic Property Inventory - KSHS

Applications scheduled for development or enhancement during FY2010:

- DASC REST Mapping API
- Historic Property Inventory - Kansas State Historical Society (KSHS)
- Water Use Filing Reporting System - Kansas Dept. of Agriculture/Div. of Water Resources
- Archeological Sites Database & Map Viewer v2.0 - KSHS
- RecFinder enhancements - DASC/KDWP
- Kansas Vulnerable Needs Registry – Kansas Adjutant General's Department, NetEOP inc.

Web Service Statistics:

Figure 13 - Map Server Statistics – Top 10 – Number of Map Images

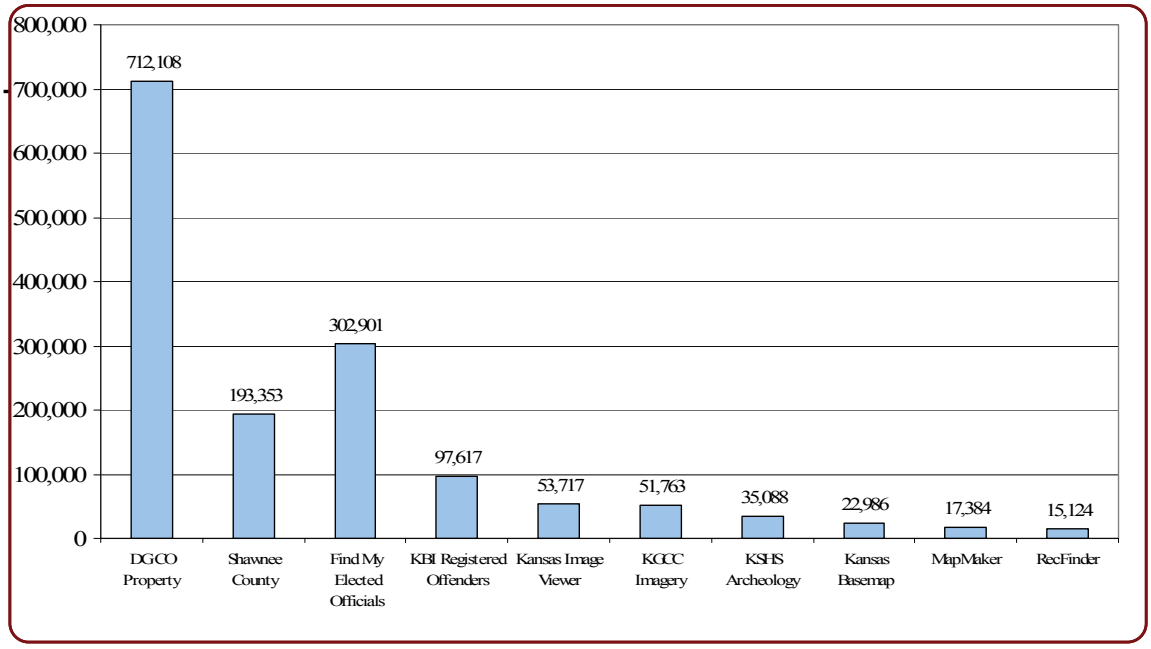
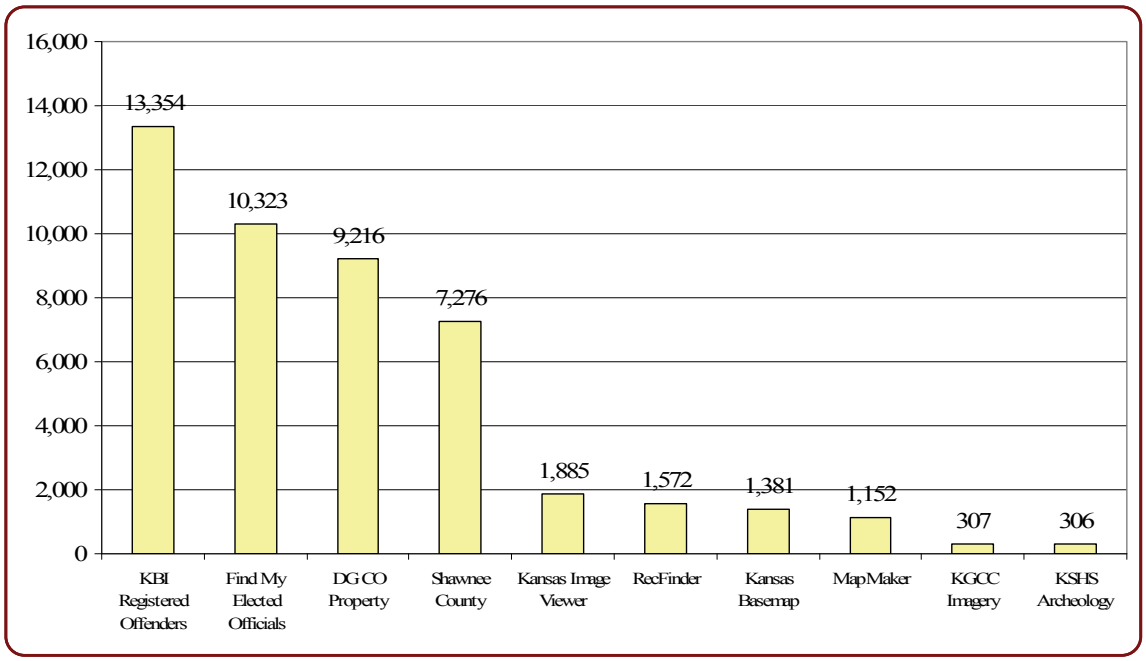


Figure 14 - Map Server Statistics – Top 10 – Unique IP Addresses



KBI Registered Offenders – Working in conjunction with the KBI and Kansas.Gov, DASC developed a series of geospatial web services to support the new version of the Registered Offenders web site. The new site is built on a Service Oriented Architecture (SOA) and seamlessly integrates data from multiple servers. Specifically, DASC developed three services for the project:

1. Geocoding Service – a REST-based (Representational State Transfer) web service called by KBI to convert addresses into geographic coordinates. In addition to the coordinate information, the address match score is returned for each record which indicates how well an address matched to the road network. Records with a low-to-moderate score are flagged and reviewed by the database manager.
2. Data Loader – a SOAP-based web service that communicates via a Virtual Private Network (VPN) that allows KBI to pass database records to DASC to be added to the geographic database. In general, the 'data loader' service is called on a weekly-basis and the map caches displayed via the map interface are updated with the new data.
3. Mapping Component – a REST-based service called via simple URL parameters that returns a fully-functioning, self-contained, interactive mapping client.

The new version of the web site was launched in January, 2009 and was very well received. The web services and mapping components developed by DASC are stable, user-friendly, and perform extremely well. The SOA approach to this project will form the model for DASC's future application development activities.

Figure 15 - Generic KBI Mapping Component

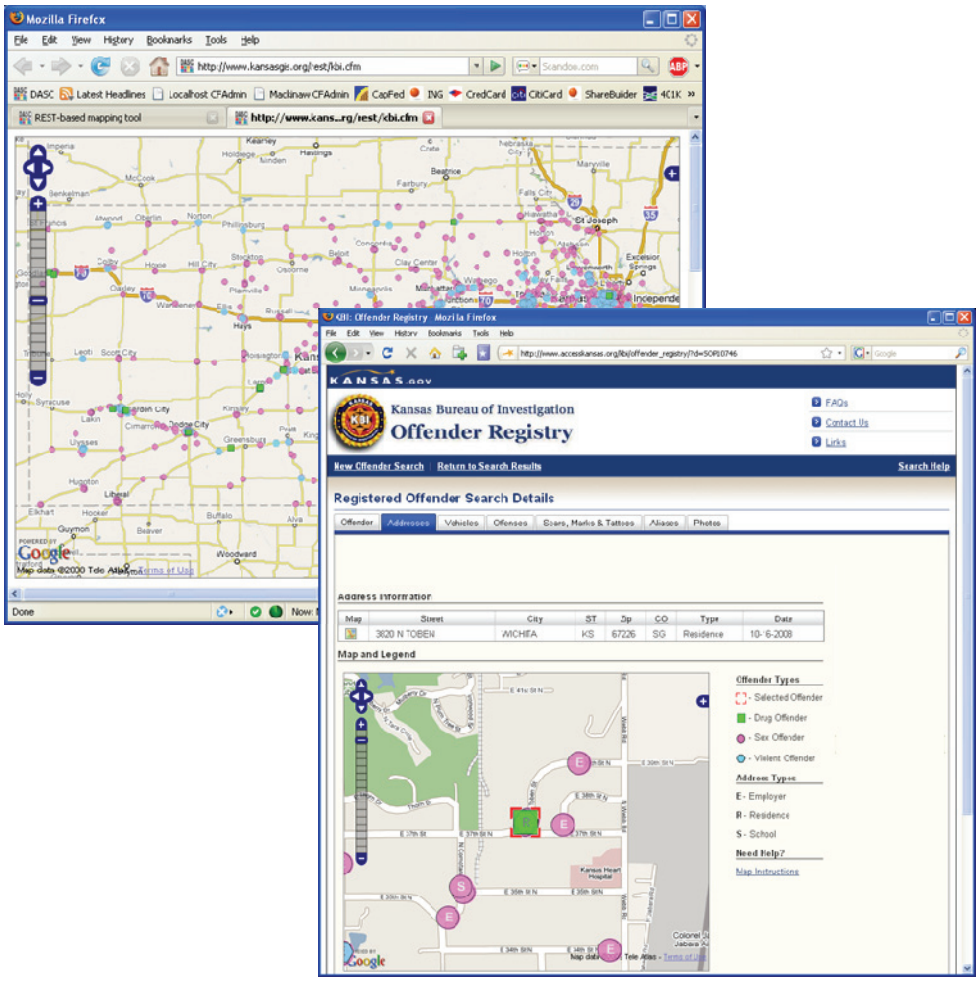


Figure 16 - mapping component integrated into Kansas.gov web site

DASC – Generalized System Architecture

DASC is located at KGS and benefits from the KGS IT infrastructure and computer services staff. The resources and practices listed below represent the efforts of both DASC staff and support from KGS computer services staff. In general, DASC staff maintain product installations and upgrades, and manage the application servers. KGS Computer Services staff provide ArcSDE/Oracle administration, configuration of new servers, system backup, security and virus protection, and the like.

Software environment:

Function	Product	Platform
Web server	Apache HTTP Server	Windows 2003 Server Standard
Servlet engine	Apache Tomcat	Windows 2003 Server Standard
Web application server	ColdFusion Enterprise Server	Windows 2003 Server Enterprise
Desktop GIS software	ArcGIS	Windows XP
Internet Map Server	ArcIMS	Windows 2003 Server Standard
GIS Server	ArcGIS Server	Windows 2003 Server Enterprise
Image Server	ArcGIS Image Server	Windows 2003 Server Enterprise
Spatial Database Engine	ArcSDE	Solaris
RDBMS	Oracle	Solaris

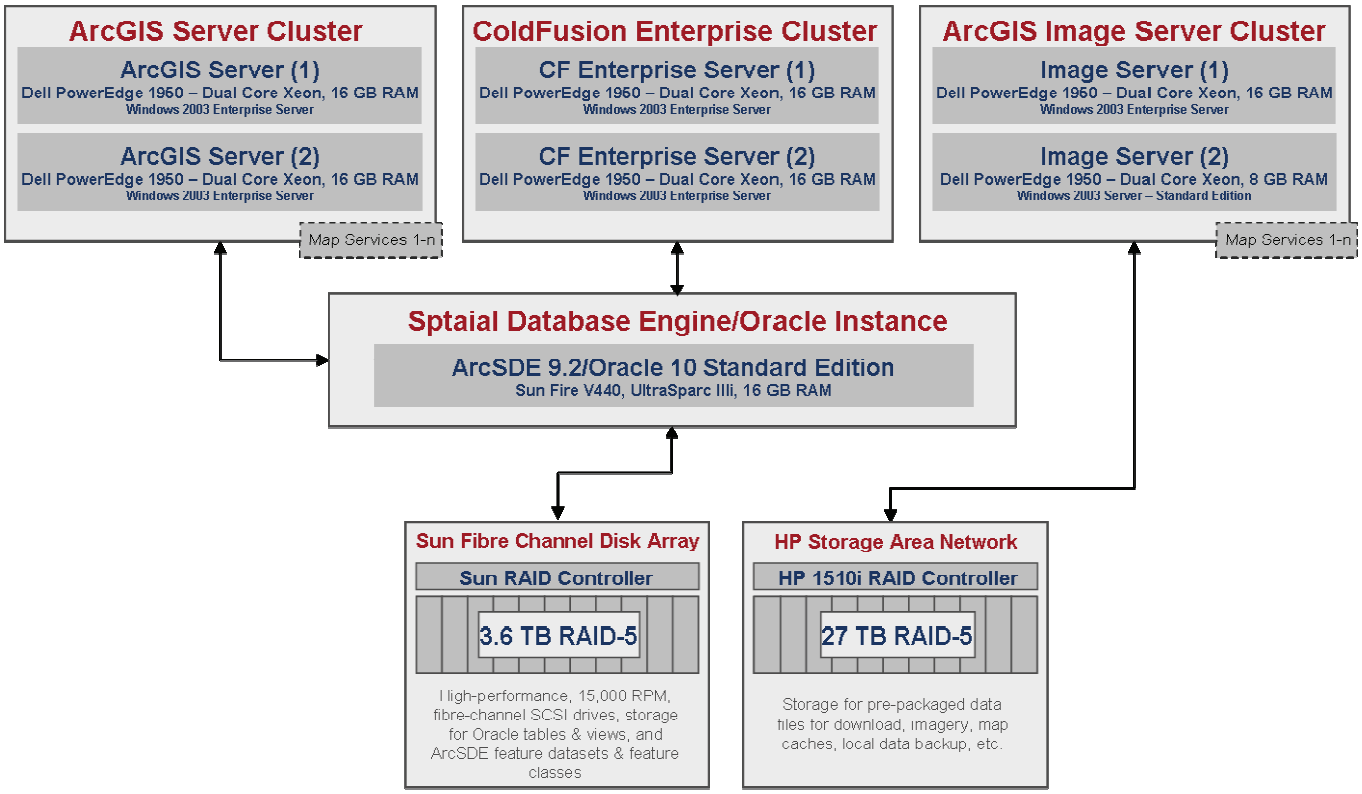


Figure 16 - Generalized System Architecture

Future: During FY2010, DASC will focus its efforts in the following areas – portal design and web services infrastructure, database development and integration, and promotion and coordination activities.

Portal Design and Web Services Infrastructure: DASC expects to complete the development of its new portal and web services infrastructure in Fall, 2009. The new portal will feature a new design and user-interface that will make it easier to navigate the site and locate data and resources. The Geodatabase Catalog, will feature a tabbed interface providing a layer summary, interactive map preview, file downloads, online services, and metadata tabs. The new portal will feature an enhanced subscription service that will allow DASC to better serve its customers. Users will be able to subscribe to an individual data layer, dataset, category, catalog additions, or online services. Since the Kansas Geodatabase is becoming increasingly dynamic, the new subscription service will provide a good mechanism for communicating database and web service updates to users. The portal will also feature resources centers to provide additional information and resources related to a specific project, initiative, or technology. The resource centers will include materials from subject matter experts from the Kansas GIS Community.

Tied to the release of the new portal, will be a new catalog of web mapping services. Utilizing ESRI's latest GIS server technology, DASC is working on the development of services for all layers in the Kansas Geodatabase. These services can be integrated into desktop mapping applications, such as ArcGIS Desktop or ArcExplorer, or used to support web-based mapping applications. DASC is also developing a new web service interface (DASC REST API) that will allow application developers to easily integrate content from the Kansas Geodatabase into their web sites through a very simple URL commands. This new web services infrastructure will allow DASC to effectively serve a much larger user audience and will result in a web service platform that is dependable and scalable.

Database Development and Integration: During FY09, DASC will continue to expand its role as an area-integrator to support the development and maintenance of strategic statewide databases. DASC will focus this effort on four primary databases – KRCD updates and enhancements, statewide tax units/administrative boundaries database, completion of the voting districts update, and development of a statewide structures database in conjunction with USGS and the Kansas Adjutant General's Department.

The goal of these projects is to develop seamless, statewide databases that feature the best available data for any given area. This, however, requires the development and maintenance of relationships with local government, and the private sector companies who often support local mapping efforts. In some cases the approach will be to simply send out hardcopy maps and ask partners to annotate the necessary database updates. In other cases, DASC will implement cutting-edge data replication services to support the collection and integration of database updates. While the goal is to develop processes that are efficient and sustainable, it is important to recognize that partner organizations are at different levels of technical capability and a one-size-fits-all solution is not necessarily the best approach. DASC will continue to work with the Kansas GIS Policy Board and the Kansas Collaborative's GIS Breakthrough Team in order to develop and maintain the relationships necessary to support this activity.

Coordination & Promotion Activities: DASC will continue to actively participate in promotion and coordination activities. Staff members will continue to serve on the TAC and TAC database committees, the Homeland Security Regional GIS Project, and other collaboration and outreach efforts. DASC's involvement in these activities enables effective communication with our partners and customers and helps to ensure continual alignment of DASC services with the needs of the Kansas GIS community. Because many of the data development and integration activities mentioned above rely on the free and open sharing of local government data, DASC will continue to explore service and partnership opportunities in order to develop mutually beneficial relationships.