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# STATE GEOGRAPHIC INFORMATION DATABASE

Data Information and Knowledge Management

State of Utah

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### EXECUTIVE SUMMARY

Utah has developed one of the most comprehensive statewide GIS resources in the nation. Known as the SGID, or State Geographic Information Database, this resource has been heavily used by Utah's GIS community. With new interest in GIS by citizens and businesses, the SGID has expanded its mission and become increasingly valuable to all citizens of Utah.

Over the past three years, the State's Automated Geographic Reference Center (AGRC) has expanded, updated key information, coordinated with local and federal agencies, and developed new services in response to this growing demand and interest. The result of this effort is that the SGID is now much more than just data. It also includes a robust set of services and products that set it apart from most other data repositories and make it extremely valuable to agencies, citizens, and businesses. These services make it easier to access the data and also provide a place of social interaction for users of the services, thus generating additional creativity and innovation in the way that the resource is leveraged.



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### DESCRIPTION OF THE BUSINESS PROBLEM

Utah's mature statewide GIS repository, known as the SGID, or State Geographic Information Database, has been evolving for many years. The SGID is a State-owned asset that is freely accessible. It contains both public and protected data. The State of Utah recognized a need to provide better access to this data for use by citizens and businesses. Although the data was available in standard GIS formats, changes in the way users accessed data via the Internet have evolved significantly in the past five years. It was important for the State to recognize this and leverage its vast GIS data resources to provide informational services and opportunities based on the data.

The growing demand for geographic data and information meant that the Utah Automated Geographic Resource Center (AGRC) needed to re-evaluate the way it manages this valuable asset. There was a need to understand the types of data that

citizens and businesses were looking for and to determine if these demands could be supported by the SGID.

The cost associated with gathering and standardizing the data often exceeded the capability of an individual city, county, or State agency to collect. There was also the potential for this data to become scattered across the State and difficult to access, since it was created in any one of hundreds of State, local, and federal jurisdictions.



### Solution Description

Citizens have become much more oriented toward information based on geography. Utah is able to respond to this demand because of the investment in both the data and the technology by providing unique services that integrate disparate data sources. This infrastructure of data and Web services extends the capacity of the State to local government creating a multiplier effect on the value of the data.

In providing governance for GIS resources, AGRC has supported the Utah Geographic Information Council (UGIC; see <http://gis.utah.gov/ugic>) and the GIS Advisory Council (GISAC; see <http://gis.utah.gov/gisac>) to ensure that users and creators have an opportunity to help determine how the SGID is developed and managed.

The Utah SGID now includes 25 thematic categories with over 380 data layers:

- Administrative Boundaries
- Climate
- Parcels
- Cultural Features
- DFIRM
- Geography
- Geology
- Hydrology
- Indices
- Land Cover
- Political
- Recreation
- Reference
- Transportation
- Utilities
- Wilderness
- Energy
- Environmental
- Demographics
- Vegetation
- Wildlife

The solution includes many end-user support tools, including:

- Integral support of the KML format, allowing users direct integration opportunities with Google Earth, Google Maps, and Yahoo Maps. This will allow citizens and businesses the opportunity to create all kinds of mashups using SGID data.
- Integral support of Virtual Earth.
- Faster, more flexible and interoperable GIS servers.
- Access to the most current GIS data in the State of Utah.
- Regular updates from counties, cities, as well as State and federal agencies.
- The creation of governance processes to ensure adequate coordination of statewide GIS efforts.
- The ability to dynamically create PDF “finished maps” from any user-generated map.
- The development of a new GIS portal in 2007, at <http://gis.utah.gov>.
- The creation of standard Web services that can be used by citizens and businesses, as well as government agencies. These services allow the user to send a simple query and return specific results based in geographic information. Examples of Web services developed by the AGRC include: get elevation (send location, returns elevation), get jurisdiction (send location, returns city, school district, special service districts, legislative district), request imagery (send location, returns imagery).

A new Web resource, [mapserv.utah.gov](http://mapserv.utah.gov), was developed in 2007 using the SGID that includes examples of how vast data resources can be used. For example:

- Oil and gas maps show the location of thousands of wells across the state, including detailed information about each well. Well drilling and exploration companies are able to access the data via the State’s services, or download it to their own system.
- Cemetery maps help citizens quickly find the location of their deceased ancestors.
- A statewide energy resource map provides an overall understanding of the State’s energy potential, including power plants, coal seams, gas fields, geothermal and wind resources, etc.
- Environmental impact maps with local soil, water, and other environmental impacts help businesses and citizens make important siting and property purchase decisions.

Over the past three years, the SGID has truly emerged as a comprehensive end-to-end GIS service that addresses not only the need for a centralized data repository for GIS professionals, but also the growing demands of citizens and businesses in the state for accessible GIS data.

### Length of Time in Operation

Although the SGID was created about 15 years ago, many of the current components of this initiative have been implemented in the past one to three years.

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## SIGNIFICANCE TO THE IMPROVEMENT OF THE OPERATION OF GOVERNMENT

The development of the State Geographic Information Database as a shared, freely available resource has produced tremendous benefits for the State of Utah. Most State agencies rely on access to the data in the SGID to meet program needs.



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## BENEFIT OF THE PROJECT

### **Operational Benefits**

State agencies use geospatial Web applications in their daily business processes and realize a significant savings of staff time. In addition, using the geospatial interface allows citizens to easily access data for a broad variety of government collected information and can be based on the location of a home or business. The SGID provides an approach for transparency in government that allows data from different agencies to be accessed in a common view. Agencies save time by not having to respond to individual requests for information. This project improved government operation by eliminating redundancy and data silos, and allowing agencies to access a wide range of data and Web services.

### **Financial Benefits**

There are many financial benefits due to the State's coordinated approach to data acquisition. For example, in 2006 the AGRC coordinated a statewide imagery data purchase which included State, federal, and local partners in 27 of the 29 counties in Utah. If each county had acquired the imagery independently (15,381 sq miles) it would have cost \$2,215,780; but through a coordinated effort, it cost \$1,429,860, and if municipalities had purchased imagery separately

(1,490 sq miles), it would have cost \$1,123,464; but through a coordinated effort, it cost \$108,301 for the same area.



## Summary

This project has already yielded immeasurable benefits to the citizens of Utah. Large amounts of information that was previously difficult or, in some cases, impossible to find on the Internet is now readily accessible. Examples of data included in the project are the State's job database, Utah burials, State Library publications, oil and gas production data, and workforce statistical data. Here are a few others:

- Economic Development—GIS resources are critical for businesses in developing siting plans.
- Land-Use Planning—Cities and towns across the state use the SGID in planning their communities.
- Citizen Services—Citizens are able to create all kinds of mashups using SGID data.
- Resource Identification—Statewide plans for critical areas, like environmental quality and energy, are dependent on SGID information.
- Government to Government Services—Services like the statewide fuel network create their service maps using the SGID.

Additional resources integrated with SGID include:

- [Atlas.utah.gov](http://Atlas.utah.gov)
- [Maps.utah.gov](http://Maps.utah.gov)
- [GIS.utah.gov](http://GIS.utah.gov)
- [Mapit.utah.gov](http://Mapit.utah.gov)
- [Mapserv.utah.gov](http://Mapserv.utah.gov)