



GEO-ENABLING GOVERNMENT BUSINESS PRACTICES

US DEPARTMENT OF AGRICULTURE- FARM SERVICES AGENCY

THE COMMON LAND UNIT: A NATION-WIDE AGRICULTURAL FIELD DATA LAYER

Background: The Farm Service Agency's (FSA's) mission is to equitably serve all farmers, ranchers, and agricultural partners through the delivery of effective, efficient agricultural programs for all Americans. Maintaining a digital map of agricultural land ownership, acreage, soil types and crop usage assists FSA in meeting its mission goal.

Value Statement: The Common Land Unit (CLU) is a nation-wide data set of farm field boundaries developed by USDA's FSA. The agency uses the CLU data as a critical tool for carrying out their mission of resource conservation, disaster recovery and stabilization of farm incomes. The CLU is also used by farmers, ranchers, and sister agencies to help manage operations, develop conservation plans, manage crop insurance, deal with pest infestations, build agriculture census data, and more.



Some Key Challenges:

- FSA needed to develop a nation-wide data set that would include all farm field boundaries across over 2,300 offices and over 2 million farms.
- In order to obtain the required accuracy for the consolidated CLU data set, FSA could not use any extant sources of digital data, and as such needed to digitize over 35 million boundaries to create the data set. This required digitizing paper maps from local FSA offices and reconciling all digital information into a single data set. Independently digitized data sets are being reconciled for both edge-matching and consistent business data.
- The CLU data needed to interface with numerous other USDA databases in order to integrate the business data needed to solve complex problems.
- Because the CLU data set is updated frequently by numerous different parties, FSA had to design and implement an architecture that would effectively handle change management and reconciliation.

How Did FSA Address These Challenges?

- **Phase I, Initial Development:** Over the course of seven years, FSA staff and contractors digitized 35 million field boundaries. FSA initially produced and maintained the CLU in county based shape files in ArcView 3.x across 2400+ local service center offices.
- **Phase II, Transitioning to an Enterprise System:** The Agency developed ArcGIS/SDE tools in FY 2002 to start the transition from county-based shape files to an enterprise database that would improve security, quality, management, and capabilities to interact with the data.
- **Phase III, Centralizing the CLU:** FSA is now working to centralizing the CLU to create a single nation-wide coverage. The goal is to create an integrated enterprise database that will bring land use and farm records together in one place to support compliance activities, commodity programs, conservation programs and disaster programs. To achieve this, FSA is taking the following steps:
 - FSA established a vision for the target design for a centralized database and application approach through stakeholder outreach and input.
 - Architects developed a design for the central system, which included estimating the amount of traffic the database could handle and taking steps to ensure backwards compatibility.
 - When the central data set is deployed, information will be managed on approximately 60 central servers rather than 2300 distributed servers, realizing the benefits of accessing the information from a single location while also saving the Agency significant hardware and software costs.

Key Benefits

The centralized CLU data layer will better support FSA current and future needs, while improving efficiencies, reducing costs, allowing full integration with business applications (and providing a better mechanism for accessing, managing, and sharing the CLU data set.

For Additional Information, Please Contact:

Shirley Hall, GIS Program Manager, USDA-Farm Service Agency
Shirley.hall@wdc.usda.gov