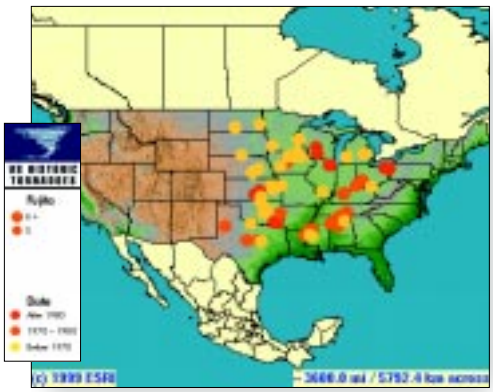
Federal
GIS Connections
FALL ESRI 1999

FEMA and ESRI
Helping to Build Disaster-Resistant Communities

Through the Project Impact initiative (Building Disaster-Resistant Communities) the Federal Emergency Management Agency (FEMA) and ESRI have formed a national partnership aimed at providing information about how to reduce damage that is caused by disasters to U.S. residents, business owners, schools, community groups, and local governments via the FEMA and ESRI Internet site. FEMA Director James Lee Witt and Jack Dangermond, president of ESRI, formalized the partnership at a ceremony at FEMA's Washington, D.C., headquarters on June 8, 1999.

"ESRI and FEMA's Project Impact have made a significant commitment to encourage the use of GIS in communities across the country so that they can take action to reduce disaster damage, and with this important partnership ESRI will provide home owners and community leaders with information that will assist in that effort," James Lee Witt, director of FEMA, said at the signing ceremony. "We welcome ESRI to Project Impact to help change the way America deals with disasters. We know that through this partnership we can reduce property damage and we can save lives."

As part of the partnership, ESRI is providing the online maps, data, and information to help communities assess their disaster risks, identify hazards, and promote public awareness and mitigation planning and management. Community leaders and home owners can also utilize the FEMA Web site to get the tools to reduce damage in the community. The ESRI® natural hazards Web site, www.esri.com/hazards, can also be accessed from FEMA's Web site, www.fema.gov/impact/. The data will serve as an educational tool for communities across the country by sharing geographic knowledge about local hazards and prompting damage reduction measures for those risks.



James Lee Witt (left), director of FEMA, and Jack Dangermond formalize ESRI becoming a business partner for Project Impact.

"FEMA and ESRI are pleased to provide this important technology to home owners and community leaders. Through Project Impact this is the first opportunity for people to look at a flood map. Now people have easy access to information like that," said Michael Armstrong, associate director for mitigation. The Web site creates an effective way for the public to get a picture of the potential for disasters in their communities and to take action to prevent damage and loss of life. Armstrong called the site a "starting place" for understanding disaster risks in people's own backyards and providing the tools so communities do not have to become victims.

"We see our partnership with FEMA as a demonstration of the power of information and how we can utilize the Web to get this valuable GIS information," says Jack Dangermond, president of ESRI. "Using FEMA's flood data, a standard commercial off-the-shelf (COTS) product, and customization, we were able to unlock the flood maps for virtually everyone to use." Dangermond went on to say that FEMA, in using this type of Web-based GIS, is leading the way to protect our communities from potential disasters.

ESRI has been involved with developing Web sites for the Bureau of the Census, U.S. Geological Survey, U.S. EPA, and the U.S. Fish & Wildlife Service. "I believe public sector, federal, state, and local geographic information will be leveraged for hundreds of new applications. A map user interface over the Internet provides an easy method for citizens to understand and make use of the geographic data many public sector agencies have been collecting," Dangermond concluded.

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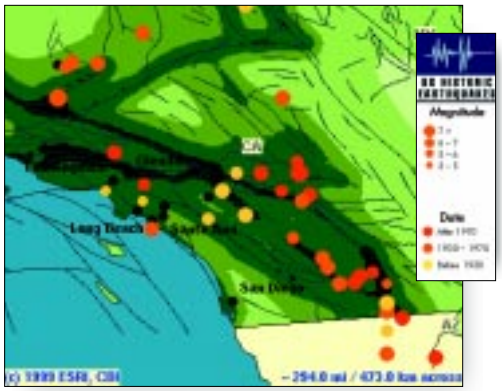
Helping to Build Disaster-Resistant Communities

Continued from cover

In 1997, Jefferson County, Kentucky, used the principles of Project Impact by using ESRI's data for disaster prevention planning, which helped save lives and property during a 1997 flood. In addition, Santa Barbara County, California, will begin a GIS project for looking at potential disasters using a Project Impact grant from FEMA. Santa Barbara County will use their grant to reduce the damage caused by natural disasters.



FEMA's Project Impact: Building Disaster-Resistant Communities is focused on promoting local preventive measures that will help reduce the loss of lives and property during disaster events. It is a commonsense approach based on three principles—preventive actions must be decided at the local level, private sector participation is vital, and long-term preventive efforts and investments are essential. Currently, 120 communities throughout the United States are participating in Project Impact.

For more information, visit FEMA's Project Impact Web site at

www.fema.gov/impact/

or call 202-646-4600.

Regional Crime Mapping

Breaking Jurisdictional Barriers

Alex Mudd, U.S. Department of Justice, Criminal Division
David Nulph, INDUS Corporation

The Department of Justice, Criminal Division, has developed an ESRI MapObjects®-based spatial crime analysis system. The application, known as Regional Crime Analysis Geographic Information System (RCAGIS), was specifically developed to assist police departments in analyzing crime on a regional basis. Police departments have historically restricted their analysis of crime to their own jurisdictions and have been very slow to share crime data with other police departments, primarily because of either technical or political barriers. This close-to-the-vest mindset regarding crime incident data can make the analysis of crime across jurisdictional boundaries exceedingly difficult. A police department's crime analysis staff may have no information regarding a string of burglaries occurring blocks away from its border because it can't get access to that data.

Counties contributing data to the RCAS database

Initial RCAGIS screen

HISTORY

In 1994, a string of related crimes occurring across several police jurisdictions in Maryland prompted a coalition of counties and cities in Maryland to agree to share crime incident data in a central repository that is accessible to all members of the group. Figure 1 is a map of the participating counties. The group, known as the Regional Crime Analysis System (RCAS), made the crucial decision to develop a centralized, standardized crime incident database to be used for all shared crime data. The group also developed a data entry application to assist with entering data into the new database. The new database improved communication among the police departments and lowered the response time for identifying crime trends.

Access to data is only a piece of the problem, however. Software capable of analyzing this vast amount of crime data had to be made available to all members of the RCAS group. It was clear from the outset that GIS capabilities would be the focus of the new software for the RCAS group as GIS tools are becoming critical to the daily operations of police departments nationwide. GIS is valuable to police departments in many ways including identifying problem areas, coordinating resources, linking incidents to known offenders, helping to identify social indicators of crime, producing and distributing maps and reports to officers and the community, coordinating strategies to reduce crime, and assessing the effectiveness of police activity.

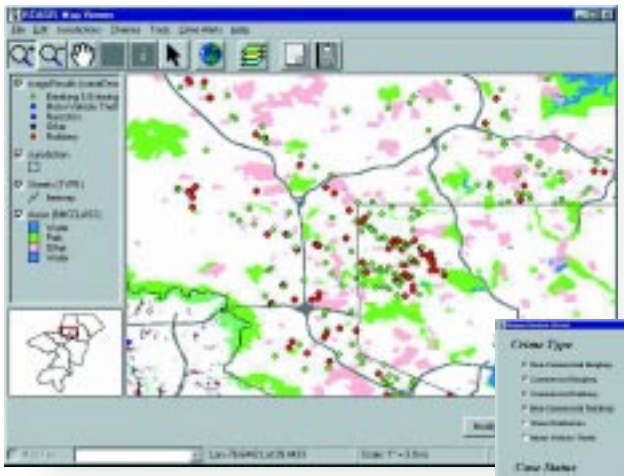
Phil Canter, the chief statistician at the Baltimore County Police Department, who is responsible for leading the effort to build the GIS application for the RCAS group, turned to the Department of Justice, Criminal Division, GIS staff for help. Phil knew that the Criminal Division's GIS staff, headed by John DeVoe, had developed a crime analysis application being used by the Montgomery County Police Department in Maryland. This was an ESRI ArcView® GIS-based application called Spatial Crime Analysis System (SCAS) that had many of the capabilities Mr. Canter was seeking for the RCAS group. After a series of demonstrations and meetings, it was agreed that the Criminal Division GIS staff (with application development support from INDUS Corporation) would provide programming support and technical assistance for the development of a spatial crime analysis application for the RCAS group.

ABOUT THE APPLICATION

The requirements for the new application, christened RCAGIS, were straightforward. In addition to possessing all of the analysis tools of SCAS, it had to be fast, cheap, and easy to use. The initial intent of modifying SCAS for use by the RCAS group had to be abandoned due to cost. Since SCAS's intended user base was essentially only crime analysts, police departments were required to purchase relatively few ArcView GIS (with Spatial Analyst) licenses. The new application being developed for the RCAS group was targeted from the outset to be used by nearly all personnel at a police department, from beat officers all the way up to senior management. Notoriously budget-minded police departments could not afford the expense of having to purchase potentially hundreds of ArcView GIS licenses. It soon became clear that a MapObjects-based application would be the ideal solution to the problem. Since a MapObjects application could be delivered with a $100-per-seat license fee, the cost to police departments would be relatively low.

The RCAGIS application was designed for ease of use by police personnel with minimal (or no) training, yet sophisticated enough to satisfy the needs of professional crime analysts. To accomplish this, RCAGIS was designed with three basic entry points, QuickMap, Mapper/Analyst, and Automated Reports, from a kiosk-style main screen (Figure 2). QuickMap guides the user through a query wizard designed to easily collect the specific information the user is interested in: crime types, geographic area, date ranges, and so forth. Figure 3 is a sample screen from the query wizard. Upon completion of the wizard, RCAGIS constructs an SQL query, passes it to the incident database, and returns with a selected set of records that are symbolized and displayed on a map in the RCAGIS viewer. The viewer provides basic GIS interface tools such as pan, zoom, identify, print, and report generation. Figure 4 is the RCAGIS map viewer.

The second mode, Mapper/Analyst, was designed for use by crime analysts or personnel with substantial training in the operation of the tools. The initial incident query is very similar to that of QuickMap, though the query wizard has more detailed options for refining the query. Once the query is finished, though, an entire suite of sophisticated crime analysis tools becomes available. Auto theft locations can be linked with recovery locations, and known suspect home addresses can be linked with incident locations. Advanced surface generation and spatial statistics tools are available that assist in defining crime hot spots. The Criminal Division GIS staff did not have the statistical background or resources to develop high-end spatial statistics routines for RCAGIS. Fortunately, Ned Levine and Associates had, through a National Institute of Justice grant, developed such a package.



The RCAGIS map viewer

Crime type selection from the RCAGIS query wizard

This package, CrimeStat, is seamlessly integrated into RCAGIS via Dynamic Data Exchange (DDE) calls and provides the statistical engine for many of the advanced analysis tools in RCAGIS.

The third mode, Automated Reports, contains reports for officers, analysts, and the command staff. The report generation system, built with Seagate® Software's Crystal Reports™, will produce a wide variety of reports. Some sample reports include incident reports with the option of including known suspect information, 28-day comparisons with day of week and time of day cross tabulations, auto theft and recovery location reports, crime alert notices, and daily/weekly/monthly reports. Detailed crime incident reports can be generated in both QuickMap and Mapper/Analyst. Reports based on selected sets of crime incidents from the map itself are available as well as a variety of summary reports and statistical breakdowns that are based on crime types and date ranges. Figure 5 is a sample report.

NUTS AND BOLTS

RCAGIS runs on the Windows® 95/98/NT platform. RCAGIS was developed with Microsoft® Visual Basic® 5.0 and Microsoft Visual SourceSafe™ for source code management. A Microsoft Access database back end was used for development and testing. Since it was desirable to not force a particular database management system (DBMS) requirement on police departments who desire to run RCAGIS, RCAGIS was designed to be DBMS-independent. As long as the structure of the RCAS database on the DBMS server remains consistent, then RCAGIS can successfully use it. This was accomplished by using Open Database Connectivity (ODBC) for all database queries. Variations in the SQL standard among various DBMSs are handled by a site-specific configuration database, which contains DBMS-specific query strings.

The RCAGIS application is, at this writing, being tested at police departments throughout Maryland. The final release is expected at the end of the summer. Upon final release, the RCAGIS source code will be made available to law enforcement agencies.

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Reaching Across the Region Through WGIS

Dennis G. Crow, Community Planner (GIS)

The Washington, D.C., GIS Consortium (WGIS) is making geographic data for the national capital area accessible to all. The Consortium helps federal, local, and private corporations collaborate to produce high-quality geographic data products and applications, develop applications, manage projects, and educate partners and the public about the benefits of CAD and GIS technology.

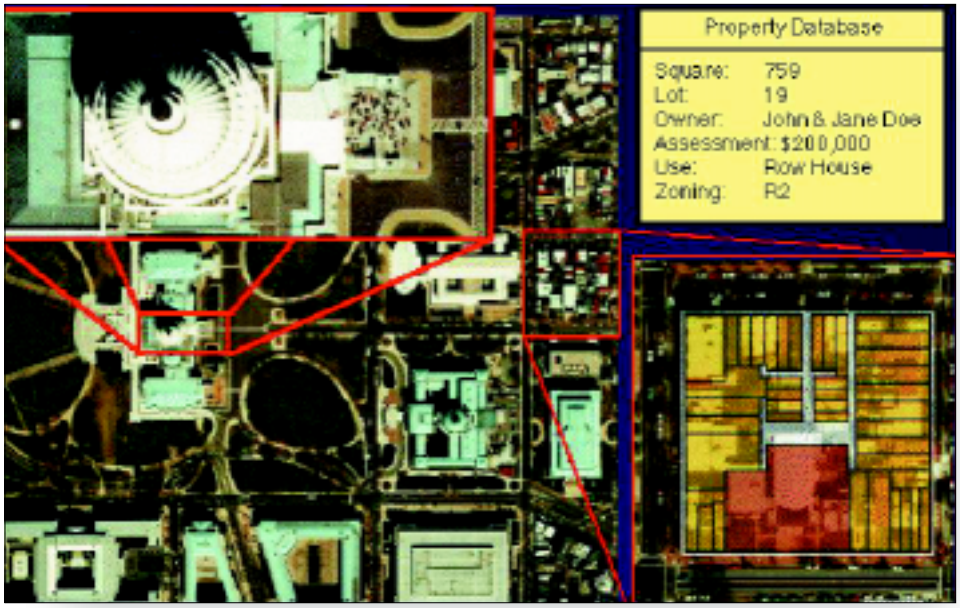
"With information technology increasingly vital to successful governance, cities and counties need good technology leaders as much as they need quality police chiefs and public works directors," writes Public Technology, Inc., in its publication, *GIS: The Next Management Tool*. The Consortium is working with police chiefs and public works directors and other public and private-sector decision makers to bring cutting-edge technology to the effective management of the District of Columbia and the metropolitan region.

Over the last five years, Consortium members have worked together in a partnership in the nation's capital to educate agencies on the benefits of using geographic information and other spatial technologies to plan resources, provide public services, and promote economic development. The Consortium also assists local, federal, and regional agencies with their implementation of both short- and long-term projects by providing contracting vehicles, management services, and technical assistance.

Today the Consortium serves as a regional resource where government agencies, corporations, associations, and community groups can obtain high-quality digital base data including orthophotography, property zoning data, and ownership and taxation information. The Consortium has produced these data layers by creating special interest groups (SIGs) with representatives from both business and government sectors. These SIGs are managed by the Consortium and share product development responsibilities associated with data creation. As the data products are created, they are made available to all WGIS partners and the public.

The groups currently active in the Consortium represent law enforcement, land use, health and environment, and transportation communities. With members of the law enforcement, land use, and transportation groups, the Consortium is developing detailed planimetric vector data layers for the City's infrastructure. The health and environment group members have collaborated with the land use group to bring District of Columbia brownfields data to the new DC Atlas Intranet mapping application.

The data standards and use of ArcView GIS software help public and private entities develop GIS information that is compatible across a range of needs and a variety of projects. This collaborative development and distribution process provides the information users need to analyze their programs with geoprocessing technologies that have historically been cost-prohibitive. The Consortium uses ArcView GIS as the general GIS tool and ArcInfo™, ArcView Internet Map Server (IMS), and MapObjects Internet Map Server (IMS) software for specialized GIS operations.



DC Orthophotography linked to ownership data

The WGIS Consortium provides current and potential partners an opportunity to obtain geographic data about the metropolitan region of Washington, D.C. The Consortium is hard at work establishing a system of shared databases, data analyses, mapping applications, computer-aided design, and three-dimensional modeling of the City that will enable interactive and collaborative forecasting.

The Consortium is beginning to flourish as each month brings new opportunities and projects. In April 1999 the Consortium helped the Washington, D.C., Metropolitan Police Department, the FBI, and the Secret Service plan for the NATO 50th Anniversary conference. The Consortium used its CAD and GIS data with other agencies' paper documents and notes to create maps of street closings, building footprints, and schedules of events that could be used in common to coordinate the duties of these federal and local law enforcement agencies.

In May, as a major step in drafting its strategic plan for the next five years, the Consortium used electronic forum technology to collect and assemble its partners' views on sharing geographic and planning data. A total of 50 participants spent a day in one of four focus groups discussing needs, benefits, and possible organizational structures of an expanded WGIS Consortium. One participant commented, "I like the idea of WGIS being a common linkage of various data sources, with the responsibility for data belonging to the owner of the data, but with everyone having access to the data."

The month of May also saw the implementation of the District of Columbia's Intranet mapping system, DC Atlas. The Consortium provided technical assistance and contracting support. Dave Seidman, GIS program manager for the DC chief technology officer, said he has identified over 100 promising GIS applications in the District government and expects GIS to play a critical role in the reengineering of City government that Mayor Tony Williams is committed to carrying out. The potential applications, many of which were identified by District staff, included over 50 maps containing data such as ward boundaries, census tracts, and streets that can be viewed, printed, and downloaded. The parcel property data and the planimetric data, also created through the technical support of the Consortium, will eventually be incorporated into DC Atlas.

Daily event map used for NATO conference

In June the Consortium worked on distributing data to many of its diverse public and private sector clients. Recent clients for WGIS data include

DC Atlas home page

Moshie Safdie Associates; CH2M HILL, Inc.; Production Accounting; Gorove/Slade Associates, Inc.; William C. Smith Real Estate Architectural Interiors; Veterans Affairs Medical Center; Baker GeoResearch Corporation, Inc.; and the Hudgens Foundation.

July sees the Consortium coordinating regional geographic data exchanges between the General Services Administration and the National Park Service to better map their respective property and facilities. Moreover, the National Capital Planning Commission staff, to enhance its analysis of new sites for monuments, memorials, and museums will use the Park Service vector data.

Goals of the WGIS Consortium include creating a constellation of value-added products and services that will

- Distribute common data as "just-in-time information" about the region for public and private decision makers.
- Reduce costs to partners and the public by coordinating the collection and dissemination of spatial data and eliminating redundant systems.
- Help provide better customer service to public as well as private partners.
- Distribute responsibility for producing and sharing information across business sectors and throughout the region in order to obtain higher quality and compatible data.
- Provide enhanced communication of that information to the public and encourage greater collaboration among public and private sector decision makers.
- Create a financially self-sustaining organization to achieve these goals and to promote research, development, and use of GIS applications throughout the region.

In keeping with these goals, the Clinton/Gore Livability Agenda emphasizes that "by sharing expertise and resources, the federal government provides tools so local communities can protect green space for wildlife and recreation, ease traffic congestion, and pursue regional 'smart growth' strategies." The current WGIS efforts have already made great strides toward implementing such a vision.

The WGIS Consortium is already moving in a positive direction and can now provide products and services to its partners to assist them in planning, program management, provision of services, and management of facilities and real estate.

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USDI BLM and USDA Forest Service—Working Toward a National Integrated Land System

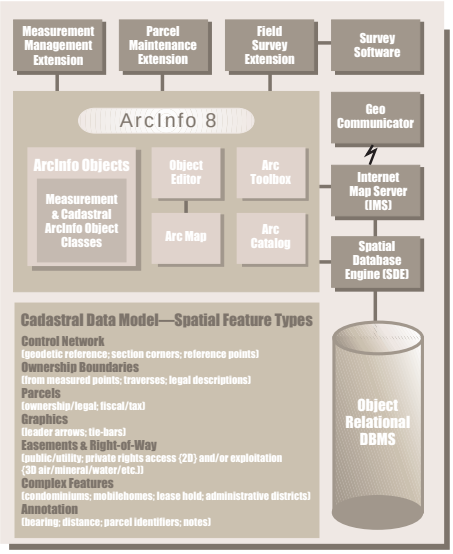
Both the U.S. Bureau of Land Management (BLM) and the U.S. Forest Service are committed to providing their users with integrated spatial data across the national landscape for ecosystem-level resource planning and management. The vision is to make parcel-based land information available to managers, specialists, and the public in an organized automated system—a fast, easy, user-friendly national integrated land system with better tools for efficient multiple-use management of the public and national forest lands. In order to make this vision a reality, the foundation for landscape analysis, a common parcel-level land information system, must be developed.

The National Integrated Lands System (NILS) is a joint development project between the U.S. Department of the Interior's Bureau of Land Management and the U.S. Department of Agriculture's Forest Service to provide a common data model and tool sets for managing cadastral and land record (parcel) data. This project is an opportunity for the federal government to work with state and local governments and the private sector to develop a common data solution and tool set that will support decision making at all levels as well as provide better public access to the country's land records. The data model and tools will provide the infrastructure for depicting cadastral (land) data. This infrastructure includes control, coordinates, boundaries, land descriptions, and land units (parcels) necessary to manage and display land. NILS will provide the foundation for linking to other business data and processes since the common element is land.

NILS has advisory support from a group known as the Parcel Consortium. The Parcel Consortium is a partnership of a number of federal, state, and local governments and private sector organizations that are working with the NILS project. The Consortium is made up of the USDI Bureau of Land Management; the USDA Forest Service; Fairview Industries; and Oakland County, Michigan. Additional partnerships with state governments, through the National States Geographic Information Council (NSGIC) and the National Association of Counties (NACO), are in the works. NILS and the Consortium are working with ESRI in a team environment to develop the data model and related applications based on ArcInfo 8.x technology. The project is using an object-oriented analysis and design methodology and Rapid Application Development (RAD) techniques to develop these next generation technologies.

"ESRI is very excited to be part of this effort in working toward a common cadastral data model. This public/private partnership is the embodiment of FGDC's vision for a National Spatial Data Infrastructure," said Jack Dangermond, president of ESRI.

The data model is based on the *Cadastral Data Content Standard for the National Spatial Data*



Infrastructure as prepared by the Cadastral Subcommittee of the Federal Geographic Data Committee (FGDC), and plans include the integration and distribution of the data model and tools with the ArcInfo 8.1 release. The cadastral data model and requirements for the extensions will be provided to the Open GIS Consortium through the FGDC's Cadastral Subcommittee.

Leslie Cone, project manager for NILS, characterized the effort as "an excellent opportunity for

continued on page 6

ESRI will be demonstrating its latest GIS technology at these upcoming events. Be sure to mark your calendar!

AFCEA '99
10/5/99–10/7/99
Barnes Field House
Ft. Huachuca, AZ
Booth #123

NASA AMES Research Center '99
10/27/99
Mountain View, CA

COMDEX '99 (FALL)
11/15/99–11/19/99
Las Vegas Convention Center
Las Vegas, NV

TECH EXPO 2000
4/18/00–4/20/00
Los Angeles Convention Center
Los Angeles, CA

ESRI Federal User Group Meeting
5/4/00–5/5/00
National Geographic Society
Washington, D.C.

GTC WEST 2000
5/17/00–5/19/00
Sacramento Convention Center
Sacramento, CA

ASPRS 2000
5/22/00–5/26/00
Omni Shoreham Hotel
Washington, D.C.

Twentieth Annual ESRI International User Conference
6/26/00–6/30/00
San Diego Convention Center
San Diego, CA

Visit the
ESRI Federal User Group Web Site
www.esri.com/federalusers

USDI BLM and USDA Forest Service

Continued from page 5

the federal government to work with state and local governments and the private sector to develop a common data solution and tool set that will benefit all parties and provide better public access to the country's land records."

Several concurrent application development projects, as initially conceived, are also briefly described below.

Measurement Management Extension—an ArcInfo-based component tool set intended to enable users to create a higher quality network representation of the Public Land Survey System (PLSS) and a more comprehensive parcel fabric. The Measurement Management Extension would be utilized to process a set of new and existing measurement features and to produce a new feature coordinate solution by performing a weighted planimetric–geodetic adjustment according to the qualitative characteristics of individual feature elements in a working set.

Parcel Management Extension—a core tool set for managing land records and cadastral feature data stored in the ArcInfo object-model. This extension of ArcInfo 8.x would provide custom feature classes, tools, and procedures for editing land records in a transactional, history-tracking environment. The Parcel Management Extension will include tools for creating, deleting, splitting, and merging parcels using coordinate geometry operations (COGO). Users will be able to customize this extension to accommodate their established work flow and business processes.

Field Survey Extension—conceived as a lightweight extension to popular survey software packages that supports the in-field collection of measurement management features along with their quality as metadata. This extension may be thought of as an integrated set of automation objects that are embedded into compatible survey data collection software packages to support the capture of measurement features and metadata into the ArcInfo 8.x object-model database format.

GeoCommunicator—an Internet-based subscription service and client application for sharing access to planned and existing cadastral, PLSS, and parcel-related projects. The GeoCommunicator is intended to provide browser-based access to the Web clearinghouse where users can track cadastral projects and locate resources of interest.

Additional information and project updates will be provided on the Web site for the BLM home page (www.blm.gov).

For more information please contact

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Scott Oppmann, Oakland County, Michigan, at 248-452-9198
Nancy von Meyer, Fairview Industries, at 608-437-6701
Bob Ader, Chairman, Cadastral Subcommittee, FGDC, at 303-236-3587
John Steffenson, ESRI, at 303-449-7779

ESRI Federal User Group News

An important component of a user group meeting is the exchange of information among users. Many years of GIS experience are collectively shared and disseminated through presentations for users by other users. The ESRI Federal User Group (FUG) is a unique opportunity for you to meet with other ESRI federal users to discuss important issues and exchange information on how GIS technology can help solve complex problems within your industry.

1999 ESRI Federal User Group Meeting—A Huge Success!

Nearly 200 ESRI federal users from virtually all the U.S. national agencies gathered at the National Geographic Society (NGS) headquarters in Washington, D.C., on April 29–30, 1999, to network and exchange information on common GIS implementations and applications.

On the first day of the meeting, federal users were welcomed by senior vice president of mission operations for NGS, Dale Petroskey, and shown an inspiring video on how the NGS is exploring geography through many cutting-edge programs. Jack Dangermond, ESRI president, described ESRI GIS technology with a perspective on the future. Jack shared his vision of geography and GIS providing the framework that brings it all together. Jack described how distributed GIS can provide new data cooperation among agencies as well as enhance data dissemination and distributed data integration. David Maguire and John Calkins of ESRI gave detailed presentations and demonstrations on ESRI's next generation of software, ArcInfo 8, Geostatistical Analyst, and a metadata tool.

The second day was dedicated to presentations from ESRI federal users on how various agencies are using ESRI GIS technology. In addition, the second day also gave ESRI federal users the opportunity to speak out and connect on serious issues that face federal GIS professionals. User presentations included the following:

- *Integrating ArcView GIS in Oracle Applications*—Tony Bacon, U.S. Forest Service
- *Coastal and Offshore Resource Information System*—James Bennett and Norm Froomer, Minerals Management Service, U.S. Department of the Interior

Silicon Graphics

Federal
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- *TIGER and the American FactFinder*—Jack George, U.S. Census Bureau
- *The National Atlas of the United States of America*—Jay Donnelly, U.S. Geological Survey
- *A Web-Based GIS for Integrated Regional Ocean Management*—Anne Hale–Miglarese, U.S. National Oceanic and Atmospheric Administration
- *GIS Mapping Applications at the Bureau of Indian Affairs*—Dennis Marenger, U.S. Bureau of Indian Affairs
- *BIA Land Title Mapper System*—Darryl LaCounte and Randy McKinley, U.S. Bureau of Indian Affairs
- *Hurricane Mitch Disaster Relief*—Jim Jancaitis, U.S. Geological Survey
- *ENGLink's Interactive Geospatial Components: Intranet GIS for Emergency Management*—Andrew Bruzewicz, U.S. Army Corps of Engineers
- *The National Spatial Data Infrastructure: Coordinating Geographic Data Acquisition and Access*—John Moeller, Federal Geographic Data Committee
- *EnviroMapper: Internet GIS-Assisted Environmental Analysis*—Dave Wolf, U.S. Environmental Protection Agency

Federal User Group Meeting Held at the 1999 ESRI International User Conference

Amongst 9,000 attendees, technical sessions, vendor exhibits, and ESRI demonstrations, the ESRI Federal User Group held its annual meeting in conjunction with the Nineteenth Annual ESRI International User Conference on Thursday, July 29, 1999, in San Diego, California. FUG Cochairs Ray Johnston (U.S. Forest Service) and Jim Jancaitis (U.S. Geological Survey) gave a presentation on where the group is and what is on the horizon for the future. The areas outlined for future FUG activities are as follows:

- Developing special technical interest areas in conjunction with the NSDI framework (geodetic control, orthoimagery, elevation, transportation, hydrography, governmental units, and cadastral information)
- Adding additional information to the FUG Web site such as metadata tools for ArcView GIS
- Holding federal-focused ArcInfo 8 workshops to aid federal users in rolling out the next release within their agency

David Maguire, ESRI, also gave a presentation on the status of the current technical "wish list" developed by federal users at the 1999 FUG meeting held in Washington, D.C.

The ESRI Federal User Group Web site offers technical resources, federal case studies, announcements, and links to other ESRI federal user Web sites. This site is password-protected at the request of many of our users. First-time users will be required to complete a registration form at the site.

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