

# Ad Hoc DOE-GIS Users Group Newsletter



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## Upcoming Events

- DOE GIS user group meeting at TIE Workshop in Albuquerque, NM, November 13-15, 2001
- American Nuclear Society GIS session "GIS Applications in the Environmental Sciences," Reno, NV, November 12, 2001.

## Feedback

Your feedback regarding the DOE-GIS user group newsletter and planned user group activities is welcomed and would be greatly appreciated. Please send comments to:

- Jim Bollinger (803) 725-8253  
[James02.bollinger@srs.gov](mailto:James02.bollinger@srs.gov)
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*Group photo from ad hoc DOE-GIS Users Meeting at the 2001 ESRI Conference in Sunny San Diego!*

## Ad Hoc DOE-GIS User Group to Meet in Albuquerque, NM at the Technical Information Exchange Workshop

**By Jim Bollinger**

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The next gathering of the ad hoc DOE-GIS User Group is planned for November 13-15 in beautiful Albuquerque, NM. This second annual user group meeting will be held in conjunction with the Technical Information Exchange (TIE) Workshop and will be hosted by Sandia National Laboratory. TIE was established to highlight advanced environmental technologies and to encourage their broad dissemination and use throughout the Department of Energy, the Environmental Protection Agency, and the Department of Defense. The following GIS related papers will be presented as part of the workshop:

*Issues for Consideration for Long-Term Spatial Data Archiving*, Denise Bleakly, Sandia National Laboratories

*Putting Geographic Information Systems on the Critical Path*, Dan Collette, MACTEC\_ERS

*GIS for Environmental and Waste Management Activities at Argonne*, James Kuiper, Argonne National Laboratory

*Cataloging and Mapping Extreme Microorganisms in Yellowstone National Park: Internet-Based Interactive Microbial Database and Map Server*, Randy D. Lee, Idaho National Engineering and Environmental Laboratory

*Post-Wildfire Geospatial Information Management at Los Alamos National Laboratory*, Paul Rich, Los Alamos National Laboratory

*Establishing a Framework to Improve Geospatial Data Management at Hanford*, Steven Rush, Fluor Hanford Chief Information Office

In addition to the paper presentations, a poster session will be held on Tuesday evening, November 13, that will feature some very practical GIS-related work.

Following the conclusion of TIE, the ad hoc DOE-GIS User Group will meet on Thursday, November 15 with Denise Bleakly of Sandia chairing the meeting. The user group meeting will include:

- Additional paper presentations of some very interesting GIS-related work from around DOE

- An update of GIS programs at several DOE sites
- Status of GIS in the DOE long term stewardship program
- Discussion of issues and concerns to bring forward to the DOE CIO
- A great lunch featuring some of New Mexico's finest cuisine.

If you are presenting a poster on Tuesday evening and would like to have an opportunity to present your work to the user group on Thursday, please let either Denise or myself know. These presentations and discussions will be particularly helpful to those who may be facing similar technical problems. For more information about TIE, or to register to attend, please see the TIE web site at:

<http://www.em.doe.gov/tie/>.

Please make plans to join us in November for what promises to be a very informative and fun user group meeting.

Finally, over 30 GIS professionals from across the DOE complex attended an informal meeting at the 2001 ESRI User Conference in San Diego. The meeting consisted of two very interesting presentations from Al Guber of the Remote Sensing Lab and Randy Lee from the Idaho National Environmental and Engineering Laboratory. Following the presentations, the group reconvened at the Aqua Al 2 restaurant in the Gas Lamp District of San Diego to enjoy fine wine and Italian Cuisine.

Looking forward to seeing you in Albuquerque!

Regards,  
Jim Bollinger and Denise Bleakly

## Feature Article: A Message from the DOE CIO's Office Regarding the DOE GIS User Group

By Susan Hargrove

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The CIO partnered with the Emergency Communications Network to form the GIS Users Group. The group was initiated primarily out of a need to improve access to the most current geospatial data for daily operations, emergency response, planning, and infrastructure maintenance in a secure environment. Typically GIS is not directly funded in DOE's budget. This has been a major problem in implementing the requirements in OMB Circular A-16 and Executive Order 12906.

OMB Circular A-16: Coordination of Surveying Mapping, and Related Spatial Data Activities, states the objective of the Circular is the eventual development of a National Digital Spatial Information Resource, with involvement of Federal, state, and local governments and private sector. This National Information Resource, will enable sharing and efficient transfer of spatial data between processors and users.

In addition, Executive Order 12906 requires the Federal Geographic Data Committee (FGDC) to coordinate the development of a clearinghouse for a National Geospatial Data Infrastructure that is compatible with the overall National Information Infrastructure. The National Geospatial Data Infrastructure

includes the computer hardware, software, and systems needed to collect and disseminate geographic information. Further, each Agency was required to document and register all new geospatial data it collects or produces, whether directly or indirectly, with the FGDC in accordance with its documentation standards.

The clear objectives of EO 12906, are to avoid wasteful, duplication of effort, maximize cooperation in geospatial data acquisition activities, and ensure efficient user access to existing geospatial data. To that end, the Energy Information Administration conducted a comprehensive GIS inventory of DOE's unclassified GIS activities. The primary purpose of the inventory was to obtain a larger perspective on the technical and policy issues affecting GIS activities at DOE. This information was needed to explore potentially significant opportunities for DOE to enhance efficiency through cooperative agreements, and to facilitate our compliance with EO 12906.

As a result of EO 12906, the FGDC is responsible for implementing the following recommendations:

- develop a National Geospatial Data Clearinghouse
- establish geospatial standards
- develop a National Geospatial Data Framework and
- establish cost sharing partnerships with state and local governments and the private sector.

To accomplish the above requirements and improve GIS throughout the Department, the DOE GIS Users Group was formed to host a number of related activities. The group holds meetings

once every two months to discuss ongoing GIS issues. The status of GIS activities at each site is discussed. These meetings afford a way to keep abreast of the current GIS regulation issues and is a venue for sharing updates of the FGDC activities.

We now have membership in the Open GIS Consortium, <http://www.opengis.org>, which is a non-profit organization whose mission is to deliver spatial processing interface specifications that are openly available for global use. Additionally we share outtakes from GIS related conferences. We're building a framework for coordination of GIS department-wide; and we ensure compliance with IT regulations such as Section 508 of the Disability Act.

What is the Chief Information Officer's perspective of GIS? Howard Landon wants to promote collaboration and achieve commonality wherever possible in the Department's IT solutions. He sees Department-wide benefit in orchestrating meetings, organizing the process, and dialoguing with the GIS Users Group. He encourages work with the Open GIS Consortium to achieve interoperability and/or standardization. He wants us to tap into the FGDC to further our goals, and finally, Howard suggests that we conduct a GIS survey to determine the systems in use department-wide.

Potentially, the CIO's role in GIS is to:

- establish a central coordination base
- establish an organization coordination structure
- to charter the Users Group
- to introduce a federal CIO Council request for government-wide

coordination

- encourage standards and data exchange capability
- to develop a web-site for the GIS Users Group
- and most importantly, to determine what all the issues are.

In summary the CIO's goals and objectives for GIS within the Department are described below:

- coordination of GIS activities is critical to the Department
- DOE must meet the requirements of OMB Circular A-16 and Executive Order 12906.
- acknowledge a need for interoperability of site systems
- and sharing of current GIS data Department-wide is beneficial to all users

Let's continue to work together to communicate and achieve these goals.

## GIS at Los Alamos National Laboratory

**By Paul Rich**

Paul Rich  
GIS Team Leader, GISLab

Los Alamos National Laboratory (LANL) is in the process of evaluating GIS needs and capabilities. The recent Cerro Grande wildfire revealed that spatial information is located in many places across the complex. A central data repository, the Cerro Grande Rehabilitation Project (CGRP) GIS, has been established within the GIS Laboratory (GISLab) (<http://www.gislab.lanl.gov>). Spatial data (2.3 TB storage) and GIS tools are

currently being made available via an internal website. A subset of the data will eventually be made available to the public via a "green" server. The specific design and implementation of the new approach is detailed in the GISLab Information Management Plan. A centralized spatial data warehouse, together with provisions for restricted access when required, has benefits for day-to-day operations, programmatic needs, research, regulatory functions, decision-making, and emergency management. GISLab also houses the Environmental Restoration (ER) spatial database and provides GIS services in support of ER. GISLab houses an extensive GIS database including DEMs for the LANL site.

While the GIS tools used are all from ESRI, the databases are from a number of vendors. Within ER, the database is being migrated from Oracle to SQLServer. This is well-structured but will go through re-design as ER processes themselves are re-designed.

Major GIS capabilities at LANL are listed below.

GIS Laboratory (GISLab)  
Point of Contact: Paul Rich;  
Environmental Dynamics & Spatial Analysis Group, EES-10; 505-667-1850, [pmr@lanl.gov](mailto:pmr@lanl.gov)  
**Role:** GIS research & development and project support; spatial database and facilities for Environmental Restoration (ER) Project and Cerro Grande Rehabilitation Project (CGRP).  
website: <http://www.gislab.lanl.gov>

Planning GIS, LANL Site  
Point of Contact: Joan Stockum; Project Management and Planning;  
505-665-4155; [jstockum@lanl.gov](mailto:jstockum@lanl.gov)  
**Role:** GIS in support of facilities and operations

Johnson Controls Northern New Mexico (JCNNM) GIS - Utility Mapping  
Point of Contact: Chris Samora;  
JCNNM-UMAP; 505-665-1051;  
[samora@lanl.gov](mailto:samora@lanl.gov)  
**Focus:** LANL Site Infrastructure, Cultural Features, Utilities

Ecology Group GIS  
Point of Contact: John Huchton;  
Ecology Group, ESH-20; 505-665-3204;  
[huchton@lanl.gov](mailto:huchton@lanl.gov)  
**Role:** GIS capabilities in support of the identification and management of cultural & natural resources, assessment of the environmental impacts of LANL projects, and ecological modeling and spatial analysis.

Emergency Operations Center  
Point of Contact: Pat Nelson; FWO-Integrated Information Management, FWO-IIM; 505-667-3642; [pan@lanl.gov](mailto:pan@lanl.gov)  
**Role:** Information needs for emergency operations

LANL GIS User Group  
website: <http://www.gisuser.lanl.gov>  
**Role:** facilitate communication among GIS users

## Cool GIS Web Sites

By Denise Bleakly

Sandia National Laboratory

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### GeoPortals

GeoPortals are gateways to spatial data on the internet.

This is summarized from the January 2001 issue of GeoWorld  
(<http://www.geoplace.com>)

### CeoNet

<http://ceonet.ccrs.nrcan.gc.ca>

Access component of the Canadian GeoSpatial Data Infrastructure. This site offers maps, satellite images, publications and other geospatial data provided by Canadian and international organizations.

### Core Software

<http://www.coresw.com>

One of the earliest companies to offer on-line viewing of spatial imagery. One of the largest sources on the internet to search, browse and retrieve Earth images and related geo spatial information.

### The Geography Network

<http://www.geographynetwork.com>

Initiated by ESRI, the Geography Network is a global network of GIS users and providers. Important goals of the Geography Network are to support and build on the Global Spatial Data Infrastructure and the U.S. National Spatial Data Infrastructure. Most of the data are free and in the public domain.

### GlobeXplorer

<http://www.globexplorer.com>

A subscribed service where clients can extract images and present them on websites. GlobeXplorer's image content spans the globe.

### Kodak

<http://www.kodak.com/go/earthimaging>

A business-focused e-commerce site for high-resolution earth imagery.

Aerial imagery is available online from more than 30 North American metropolitan areas, and imagery from around the world.

### Landinfo International

<http://www.landinfo.com>

Landinfo is a leading producer of geospatial data and related services for the worldwide engineering and GIS marketplace. Landinfo markets digital georeferenced topographic maps, digital elevation models, parcel tax maps, satellite imagery, aerial imagery, FEMA flood maps and vector map layers.

### MapQuest

<http://www.mapquest.com>

Map quest offers myriad maps, driving directions, city and travel guides, and more.

### Pixxures

<http://www.pixxures.com>

The company specializes in updating existing digital orthophotos with newly collected aerial and/or satellite imagery.

### TerraServer

<http://www.terra-server.com>

One of the world's largest online atlases of high resolution satellite imagery and aerial photography. Started as a joint research project between

Aerial Images, Inc., Microsoft, the USGS and Compaq.

Of passing interest to some of you - another site more oriented to the geography of the Internet -

<http://www.cybergeography.org/atlas/atlas.html>

### **Virtual Classrooms in GIS:**

Article on "Is online training for you?"

<http://giscenter.isu.edu/training/OnLineLearning.htm>

### **ESRI's virtual Campus**

<http://campus.esri.com/campus/home/home.cfm>

**California Geographic Information Association (CGIA) GIS Education Opportunities in California, other education sources:**

<http://www.sandag.cog.ca.us/cgia/edulinks.html>

**Idaho State University GIS Training & Research Center.** Has some on-line GIS Classes <http://giscenter.isu.edu/>

**Kentucky State, GIS Courses on -line**  
[http://www.state.ky.us/agencies/finance/depts/ogis/new\\_web/training/listing.htm](http://www.state.ky.us/agencies/finance/depts/ogis/new_web/training/listing.htm)

**Penn State's Certificate Program in GIS - on-line training**

<http://www.worldcampus.psu.edu/pub/programs/gis/index.shtml>

**USGS online overview of GIS**

<http://info.er.usgs.gov/research/gis/title.html>

**Purdue University on-line GIS Course**

<http://pasture.ecn.purdue.edu/~caagis/tgis/getstart.html>

**University of Texas Virtual**

**Geography Department** - on-line GIS courses as well as other geography classes

<http://www.utexas.edu/depts/grg/virtdept/contents.html>

**GIS Tutorials - Robert E. Kennedy Library GIS Tutorial Links**

[http://multiweb.lib.calpoly.edu/research/all\\_databases/gis/gis3.html](http://multiweb.lib.calpoly.edu/research/all_databases/gis/gis3.html)

**Utah State University, GIS Exercises**

<http://www.nr.usu.edu/Geography-Department/rsgis/GIS/exer/gisexer.html>

**University of Kingston (UK) Distance Learning Course in GIS**

<http://www.crworld.co.uk/gis.html>

**NCGIA's core curriculum in GIS at all levels**

[http://ncgia.ucsb.edu/education/curricula/cctp/resources/example\\_courses/examples.html](http://ncgia.ucsb.edu/education/curricula/cctp/resources/example_courses/examples.html)

**USGS Emergency response planning & GIS examples**

<http://www.usgs.gov/research/gis/application4.html>