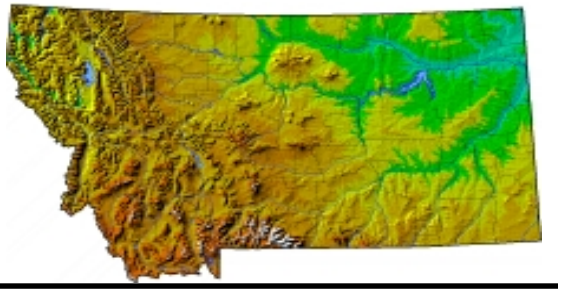
Montana GIS News



Boise Roundup

2001 Intermountain GIS Users Convention

By Ed Madej
President, Montana GIS Users Group

Nearly 400 GIS professionals gathered at the Centre on the Grove in Boise, Idaho during the first week of May earlier this year to attend the Intermountain GIS Users Convention. Our annual convention continues to grow in popularity, not only with GIS specialists in Montana and Idaho, but attracting people from Utah, Wyoming, Washington and half a dozen other states as well.

Among the most popular of topics this year were talks on the burgeoning field of Internet GIS, with presentations on Internet applications coming from large federal agencies to small local communities. Of particular interest were presentations on the summer 2000 fire season and preparations for future seasons. GIS and the Internet is being used to provide real time environmental data to wildland fire fighters and the public, and data from such web sites is beginning to make a real difference in how these natural disasters are managed.

Thirty vendors provided details of their GIS services and products to convention attendees. The variety of GIS vendors, from large established national firms to thriving smaller local companies reflects the vitality of this technical business sector in our region. Remarkably, while growth in most of the "dot.com" business sector has stagnated or even shrunk, GIS businesses continue their steady, but slow, growth pattern.

The city of Boise proved to be the largest and most cosmopolitan community that has hosted an Intermountain GIS convention to date. Convention attendees enjoyed great restaurants and fantastic live music, but frequently showed up bleary-eyed for early morning technical sessions.

We extend our thanks to this year's organizing committee in Boise and the local chapter of URISA in Idaho that pulled off a great convention. We look forward to the next Idaho gathering in Coeur d'Alene in March, 2003.

!!!!!!!!! GIS News Going Digital !!!!!!!!!!

The GIS News is currently mailed to over 2000 people at a cost to the GIS Users' Group of nearly $1000.00. We will be completely on-line by January 2002, and as issues are completed, we will email a link to the GIS News. **You can subscribe to the mailing list either on the web at http://lists.state.mt.us/scripts/lyris.pl?join=gisnews or send an email to join-gisnews@lists.state.mt.us.** If you have any questions or comments, contact Katrina Dixon at 406-444-6910. You can already view all the GIS News archives on-line at http://nris.state.mt.us/gis/news.html.

In this issue…

What is a Geodatabase?

By Bryant Ralston, ESRI

Geodatabase, short for 'geographic database' as defined in the Dictionary of GIS Terminology: "An ArcInfo 8 data storage format. A geodatabase represents geographic features and attributes as objects and is hosted inside a relational database management system."

Simply put, a geodatabase is a modern container for GIS data. It is an optional, next-generation, object-relational geographic data model introduced with the first ArcGIS offering, ArcInfo 8. Geodatabases are supported in all of the current ArcGIS desktop products – ArcView 8.1, ArcEditor 8.1, and ArcInfo 8.1. Geodatabases are also recognized by another member of the ArcGIS suite, ArcIMS (Internet Map Server).

A geodatabase is conceptually similar to the familiar file-based coverage and shapefile data models but extends these models in some important ways. These include support for advanced geometry (for example, three-dimensional coordinates, linear measures, and true parametric curves), intelligent "rule-based" data creation and editing, continuous, non-tiled storage, feature-linked annotation and geocoding, complex linear networks (called geometric networks), relationships among features classes, and efficient storage of raster data. In the future, geodatabases will be able to persistently store planar (polygon and more) topologies, triangulated irregular networks (TINs), and survey measurements.

If you are familiar with coverages or shapefiles you will readily understand the geodatabase. In a sense, a geodatabase is like managing your coverages, grids, and shapefiles *inside* a database management system, or DBMS. As geodatabases store geographic data inside a commercial DBMS and are object-relational in nature, they bring GIS technology closer to the realm of traditional information technology (IT). Geodatabases have several important benefits over the traditional file-based GIS data models. Some of these include:

1. Make your GIS datasets *smarter*. By endowing geographic data with real-world *behaviors* modeled in the database (instead of writing custom code for each application) GIS users can work with more intuitive objects of interest like transformers, roads, lakes, or parcels, versus the generic "points, lines, and polygons." These intelligent behaviors can also be validated to ensure that data entry and editing are more accurate.

2. More accurately represent the shape of features. The geodatabase geometry model supports constructing features using straight lines, circular curves, elliptical curves, and Bezier splines. Additionally, precision feature "sketching" tools such as relative or absolute coordinate entry, extending and trimming features, parallel or perpendicular geometry creation tools, and a robust snapping environment all work on geodatabases.

3. Provide a uniform repository for geographic data. Since the different representations of geography – vector, raster, TIN, address – can be stored in the same geodatabase, they can be built, stored, and managed centrally, if so desired. As geodatabases can scale from the project to the enterprise, geodatabases can also be shared and distributed via the Internet.

4. Many users can edit geographic data simultaneously. The geodatabase data model permits work flows where many editors can be working on the same geographic area and then reconcile any conflicts that emerge. This process, called *versioning*, is necessary to support long transactions, common in today's GIS workflows. Without the geodatabase, long transactions are not traditionally supported in a DBMS.

Geodatabases do not fundamentally change the process of GIS database design. However, they do provide additional capabilities and functionality over the traditional geographic data models. Although you may not be using geodatabases presently, over time as you make improvements to your GIS, consider the advantages that a geodatabase design would offer over your existing workflows and data models. As you might expect, conversion tools from existing data models "to" geodatabase are already available. For more detailed information, refer to the ArcGIS concept guide "Modeling Our World" and the User Guide "Building a Geodatabase" which ship with the ArcGIS desktop products or are available from the ESRI press.

PRELIMINARY CALL FOR PAPERS
2002 Intermountain GIS Users' Conference

The Montana GIS Users' Group and the Northern Rockies Chapter of URISA invite presentation of papers, electronic demonstrations, panel discussions and poster entries for The Annual Intermountain GIS Users' Conference to be held in Big Sky, Montana, April 9 -13, 2002. The conference theme this year is "**The View From the Summit**", emphasizing the use of GIS in regional planning efforts, integrating man and nature in the modern west.

The Intermountain GIS Users' Conference attracts a wide variety of GIS users from federal, state, tribal and local governments, as well as from private organizations. Concurrent tracks will focus on local government, natural resources, Native American issues, remote sensing, new technology, education, public health & safety, and a vendor track. Topics include, but are not limited to:

- § GIS in Rural Communities
- § Remote Sensing & Photogrammetry
- § Snow Engineering
- § Landuse Mapping
- § Law Enforcement/Crime Analysis
- § Ecosystem Management
- § Habitat Delineation/Modeling
- § GIS Database Design & Management
- § Internet & Data Repositories
- § Precision Agriculture
- § Fire Management
- § Data Visualization
- § Water Resources
- § Data Standards
- § GIS and the User Interface
- § Local Government
- § Cadastral Mapping
- § Census 2000
- § E911 Systems
- § Metadata
- § Native American Issues
- § Planning and Zoning
- § Education/K-12
- § GPS & Surveying
- § New Technology
- § Natural Resources
- § GIS and Business
- § Appraisal & Assessment
- § Recreation
- § Public Works

Abstracts are required for presentations (including demonstrations and panel discussion topics) and posters. Abstracts should be single spaced and 200 words or less. They should include the title of the proposed presentation and a summarization of the presentation's or poster's content. Panel discussion abstracts should also specify the subject area to be covered, with each panel members' name, title, and organizational affiliation.

For those submitting presentations, please complete section 1 of the Submission Form in addition to an abstract. For those submitting poster entries, please complete section 2 of the Submission Form. The Submission Form and abstracts must be postmarked or faxed on or before **February 1, 2002.** Return the forms to:

Margie Lubinski
Lolo National Forest, Geospatial Services
Building 24, Fort Missoula
Missoula, MT 59804
Phone: 406-329-3743
Fax: 406-329-3795

Submit abstracts via email to: mlubinski@fs.fed.us (Or via IBM 3.5" diskette in Rich Text Format to the address above).

Notification of acceptance will be on or before March 1, 2002. All persons submitting a presentation or poster entry will be expected to register for the conference. Check the conference web site at www.intermountaingis.org for program schedule and additional conference details as they become available. For general information about the conference contact Ed Madej, edward.madej@ttemi.com or Nickie Duff, nduff@ram.powereng.com.

Additional information is also available from:

Margie Lubinski, Track Coordinator,
mlubinski@fs.fed.us

Hans Zuuring, Posters Chair,
hrz@forestry.umt.edu

Gretchen Burton, Facilities Chair,
gburton@montana.edu

SUBMISSION FORM

Name _____ Are you a student? _____Yes _____ No

Organization _____

Address _____

City_____ State _____ Zip _____

Phone _____ Fax_____ Email _____

Section 1 – Presentations

TYPE OF PRESENTATION:

☐ Paper ☐ Electronic Demonstration ☐ Panel Discussion

(Presentations should be 20-25 minutes long. If you need additional time, please let us know.)

INTENDED AUDIENCE:

☐ Novice GIS User ☐ Experienced User ☐ Manager ☐ Other_____

CONCURRENT TRACK:

☐ Natural Resources ☐ Local Government ☐ New Technology ☐ Native American Issues
☐ Education ☐ Remote Sensing ☐ Vendor ☐ Public Health & Safety
☐ Other

AUDIO VISUAL NEEDS (Check all that apply):

☐ Slide Projector ☐ Overhead Projector ☐ Data Projector* ☐ Flip Chart/Easel
☐ Other (please specify)

*(If you require a data projector you must supply your own computer.)

Section 2 – Poster Entries

DEFINITION OF CATEGORIES (Submissions by students are judged separately):

Poster Display – Generally more text intensive and illustrating specific projects or a process, to be judged on graphic design.

Cartographic Product – Strictly map products, to be judged on cartographic design.

Internet Mapping Application – Web-based GIS applications or web sites featuring maps and GIS products, to be judged on web design and application effectiveness.

TYPE OF ENTRY:

☐ Poster Display ☐ Cartographic Product ☐ Internet Mapping Application**

**FOR INTERNET MAPPING APPLICATIONS ONLY:

Do you require an Internet connection: ☐ Yes ☐ No

What type of computer are you bringing: ☐ Portable PC/Notebook Style ☐ Monitor & Tower

Montana GIS Users' Group Awards $1000.00 Grants

By Margie Lubinski, USFS

This past spring, the Montana GIS Users' Group Education Subcommittee requested proposals for a $1,000 grant to develop a K-12 Curriculum to bring Geographic Information Systems (GIS) into the classroom. The focus of the grant is to create a curriculum that merges existing classroom subjects with GIS. We are particularly interested in providing teachers with a way to incorporate GIS into their existing curriculum.

Every other year the MT GIS Users' Group hosts the Intermountain GIS Conference, which attracts over 350 GIS professionals from Montana, Idaho and adjoining states. The GIS community's support of this conference makes it possible for us to offer these grants. As a result of this support, we are pleased to announce that this year the Montana GIS Users' Group was able to award three $1000.00 scholarships.

We received a large number of applicants, covering a broad selection of topics. We hope that the curriculum the recipients provide will enable the GIS and K-12 community to reach even more Montana students to educate them about geography, science, math, GIS, GPS and matters of importance to our state.
This year's recipients of a $1000.00 grant are:

Blackfoot Watershed Weeds Monitoring GIS Curriculum Guide, Blackfoot Challenge with the Helmville Elementary School, Helena, MT

- The purpose of this project is to develop a curriculum guide for teachers to use in selecting, monitoring, and managing weeds at school sites using GPS/GIS technology. Specific objectives and activities include: 1) training in GIS field testing site selection and weed mapping and monitoring at a school site and 2) creation of a curriculum guide that outlines the procedure and provides school-based GIS Weeds teaching units tied to state standards in math and science.

2001 Anderson School Project Birds' Eye, Anderson School, Bozeman, MT

- This proposal would create units of study incorporating GIS technology in the middle school social studies area. The outcomes of this study would be to increase learners' skills in conducting authentic research, to acquaint students with career options using GIS and GPS technology, and to develop information that can be used by government agencies and subdivision boards to address the concerns.

GIS Experiments in Physical Science Classrooms, Sidney HS, Sidney, MT

- This project is to develop three learning cycles that center around GIS and use learning cycles in physical sciences. The learning cycles will introduce physics and chemistry students to the power and uses of a GIS program by 1) allowing the students to analyze the ozone phenomena in chemistry (Is there an ozone hole?) 2) allowing astronomy students to analyze the red spot on Jupiter (How big is the red spot?) 3) allowing the physics students to analyze the wind flow on Mars (Is there a safe place to land?).

For further information on the grant program or to become more involved with the MT GIS Users' Group Education Subcommittee, please contact:
Margie Lubinski, mlubinski@fs.fed.us or
Gretchen Burton, gburton@montana.edu

The MT GIS Users' Group
Geospatial Trunk
is available now to K-12 teachers!
For info on its contents and
how to reserve the trunk, contact:
The Montana Natural History Center
Post Headquarters Building T-2
Fort Missoula Rd.
Missoula, MT 59804
(406) 327-0405

GIS at the Summit: the 2002 Intermountain GIS User's Convention

By Ed Madej, President, Montana GIS Users Group

Planning is well underway for the 2002 Intermountain GIS Users Convention to be held at the Big Sky Resort Conference Center southwest of Bozeman, Montana, on April 9th through 13th, 2002. The event will focus on the use of GIS in regional planning efforts such as land use, environmental and smart growth efforts. This is the first time Big Sky will have hosted the GIS convention, and it will have many special treats for attendees, including discount lift tickets during this, the last week of the winter ski season at the resort.

Since the 2002 GIS convention will occur three weeks earlier than our previous gatherings, our preparation timeline has been accelerated as well. Central to our efforts is our website, http://www.intermountaingis.org/2002.html, which will feature news of the upcoming event and for the first time, an on-line e-commerce page to take conference registrations by credit card.

Here are some preliminary dates to be aware of:

October 15th, 2001 - Call for papers issued for those wishing to present at the conference. Papers and abstracts should be submitted by February 1st.

November 1st, 2001 - On-line pre-registration opens. Prospective attendees can pay on the www.intermountaingis.org web site for conference registration and meals. People will be asked to book their rooms by phone at Big Sky separately from pre-registration by using the resort's toll free number. The resort has reserved a block of rooms in the Huntley Lodge, Shoshone Condominium/Hotel, and the Summit; a range of standard rooms, lofts, and suites will be available. But space on the mountain could be tight so plan to reserve a room early (conference rates will probably be available for booking by mid-November).

At this time, vendors can pre-register for a booth or presentation.

January 15th, 2002 - Convention brochure with scheduled presentations released.

March 1st, 2002 - Pre-registration closes.
Tuesday, April 9th, 2002 - All-day GIS workshops are held on the Montana State University campus in Bozeman.
Wednesday morning, April 10th - Half day workshops are held at Big Sky.

Wednesday afternoon, April 10th - The convention general session opens at 1:30 PM, featuring the keynote speakers. The afternoon session is followed by public night events held at the resort.

Thursday, April 11th - Concurrent sessions present GIS topics all day, followed by our annual awards banquet in the evening.

Friday, April 12th - Concurrent sessions continue all day.

Saturday, April 13th - Half day workshops are offered for the hard-core GIS professional, with skiing for the rest of us.

Check the Intermountain GIS web site frequently for new information. If anyone would like to help with the convention, your Montana GIS User's Group would love to have you. Contact Ed Madej in Helena at Edward.madej@ttemi.com or Gretchen Burton in Bozeman at gburton@montana.edu .

Montana GIS Users' Group
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