THE MAP LEGEND

1996 NAPP Coverage for New Mexico and the Border Region

Color infrared and black and white aerial photography was acquired over parts of New Mexico during 1996 under the National Aerial Photography Program (NAPP). Earlier coverage for the northern half of the state (from 34°15' to 37° north) was acquired in 1991. The 1996 projects were flown over southern New Mexico. The effort was divided into several projects. Project 9638 was acquired in support of requirements for the Transboundary Resource Inventory Project (TRIP), which extends from the U.S.-Mexico border to a point approximately 100 miles north of the border. The project was flown with Kodak SO-134 color infrared aerial film, and although flown to NAPP specifications, it is not part of NAPP. Reproductions and other products from this project will be available from the EROS Data Center in Sioux Falls, SD. Approximately 83 percent of the project was completed.

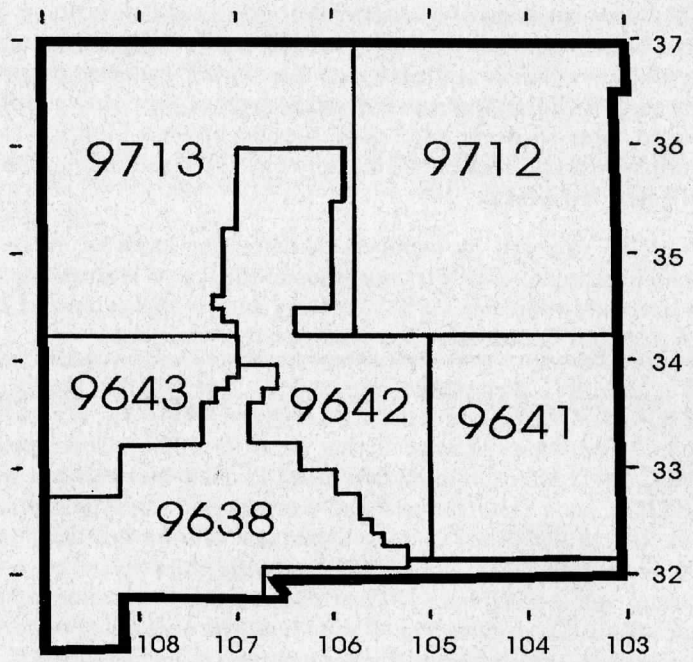
Projects 9641, 9642, and 9643 were flown as part of NAPP, using Kodak 2402 black and white aerial film. These projects extend from the northern boundary of the TRIP project northward to 34°15' (to meet the southern boundary of the 1991 acquisition). The extension of Project 9642 to 36° was added at the request of the Rocky Mountain Mapping Center for the Middle Rio Grande Basin study. Levels of completion for these projects are: (1) project 9641, 31%; (2) project 9642, 53%; and (3) 9643, 50%. Areas not acquired within the project boundaries will be flown during 1997. Film for these projects has been shipped to the Aerial Photography Field Office (APFO) in Salt Lake City, UT for duplication. Reproductions and products from these projects will be available from both EROS Data Center and APFO. All of the film has been inspected by the USGS in Reston prior to its release to these labs for distribution.

It is expected to take 2 to 3 months to prepare the indexes and ready the film for distribution. USGS has provided the New Mexico Earth Science Information Center (ESIC) at the Earth Data Analysis Center preliminary index information for these projects. Contacts at EDAC are Laura Gleasner (505-277-3622, ext 230), or Amy Budge (505-277-3622, ext 231).

The remainder of New Mexico is scheduled to be flown in the spring and summer of 1997. Project numbers are 9712 and 9713.

Thanks to Jay Storey, National Aerial Photography Program, USGS, Reston for providing information on the status of these projects.

NAPP Project Areas



Inside This Issue

From the President

A look back at 1996.... The New Mexico Geographic Information Council maintained a solid, steady status in 1996. Regular and student memberships totaled 197 individuals, while 10 corporations expressed their support for the Council through corporate memberships. The student membership status was new in 1996 and attracted 15 student members. Corporate support extended beyond the geographic boundaries of New Mexico. Half of these memberships came from outside the state. Geographic composition of the Board broadened, with representation from Las Cruces, Gallup, Farmington, Santa Fe, and Albuquerque. For the first time, the Council awarded its NMGIC scholarship. The recipient was Nathan Masek, a Master's student in the Planning Department at the University of New Mexico, and an employee of the Middle Rio Grande Council of Governments. Both semi-annual NMGIC meetings were highly successful, each attracting approximately 100 people. The spring meeting focused on activities along the New Mexico/Mexico border, and the fall meeting featured a very popular topic....water. As 1996 drew to a close, many members were already renewing memberships for 1997.

Plans for 1997.... The Board of Directors met in January to establish a budget for 1997 and to plan for the annual spring meeting. The 1997 budget totals $8000, including operations and committee activities. A summary of the breakout is: Publications: $2000; Postage: $700; Meetings: $3000; Scholarship: $500; Accountant: $320 Incidentals: $100; Contingency: $380; and, Committees: $200 each (totaling $1000). Income to support this budget primarily comes from membership dues and exhibit fees. Refer to the article on page 11, *How Your Membership Dues are Used*, for a more detailed discussion on 1995 and 1996 expenses and income. Budget details can be obtained from Hillary Armstrong, NMGIC Treasurer.

Plans are underway for the annual spring meeting, which is scheduled for April 25, 1997 in Albuquerque. After much searching for a suitable, and affordable, location, the Board has selected a conference room at the University of New Mexico's Science and Technology Park on the south campus. The spring show typically features vendor exhibits in addition to the business meeting and speaker's program. The theme of this meeting is *GIS in Business*, and will include an overview of GIS's role in the business world, plus speakers addressing specific business topics. Details are still in the formative stages, but a meeting announcement and description will be mailed within the next few weeks.

NMGIC surveyed its members to determine levels of interest in workshops on a variety of topics. The first workshop of the season is tenatively planned for the end of March and will cover GPS technology and its applications. Contact Denise Bleakly, Workshops Coordinator, for details on this workshop.

The NMGIC home page has recently undergone a facelift, and thanks to Cliff LeQuieu, Bill Stone, and Bill Baillargeon, the new look is now online. Check it out at *http://www.state.nm.us/nmgic* Other plans for 1997 include sponsoring the Southwest ARC/INFO User Group Conference (it's New Mexico's turn); FGDC recognition of NMGIC as a state council, and participation in FGDC activities. The Board has elected to publish *The Map Legend* on a trimester basis, rather than quarterly. Therefore, in 1997, you will be receiving three issues....this one, a spring/summer issue, and a fall issue. Please refer to the publication schedule on page 12 for deadlines. I encourage you to submit articles about your projects, activities, and other geospatial-related information for inclusion in the newsletter.

1997 promises to be a very busy and exciting year for NMGIC. We look forward to your participation, and thank you for your continued support of the Council.

Amy Budge, President

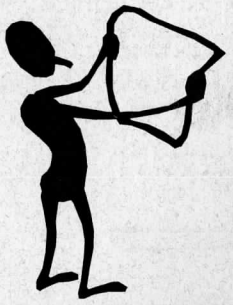
GIS Committee Report

The GIS Committee is hosting the 1997 Southwest ARC/INFO User Group conference in Albuquerque in the Fall. Specific dates and location will be announced soon. Program planning committee members are:

- Bill Baillargeon, Chair (GSD/ISD)
- Sue Armstrong (GSD/ISD)
- Amy Budge (EDAC)
- Denise Chavez (City of Rio Rancho)
- Gar Clarke (City of Santa Fe)
- Becky Edwards (EcoResources)
- Michael Gold (GSD/ISD)
- John Peterson (NMERI)
- Robin Ransom (Doña Ana County)
- Jessie Rossbach (NRCS)
- Jack Ruggiero (City of Albuquerque)
- Neal Weinberg (City of Albuquerque)

The meeting will be preceded by a day of ESRI workshops. The program includes presentations and overviews by ESRI, technical sessions on projects and applications, posters, and exhibits. Social events such as technical tours, banquet, and a vendor-sponsored ice breaker are also planned. Preliminary program and advanced registration packets will be mailed shortly. For more information, contact the Program Planning Chair, Bill Baillargeon at 505-827-2047, or by email at *bbaillargeon@state.nm.us*

Amy Budge for Bill Baillargeon

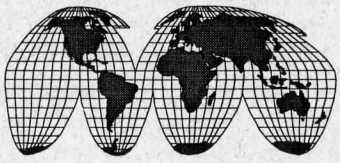


Local Government Land Records Committee Report

In cooperation with the GIS Committee, the Local Government Land Records Committee continues its work on developing ***Draft*** *Large Scale Mapping Standards* for New Mexico. Chairperson for this subcommittee is Erle Wright, GIS Manager for Santa Fe County. Persons interested in participating in this effort should contact either Gar Clarke or Erle. A working meeting is being scheduled for late winter or early spring.

The committee is also progressing on its review of the Federal Geographic Data Committee's (FGDC's) Cadastral Standards. Developed at the national level, it is critical that New Mexico understand the intent and application of these standards at state, COG, county, and municipal levels. For further information about the FGDC Cadastral Standard, to contribute review comments to NMGIC, or to serve on the NMGIC review team, contact Gar at 505-984-6603 or by fax at 505-986-6910.

A meeting of the LGLRC is being planned for late winter or early spring. The committee is seeking additional members and would welcome your input.



MAPINFO Users Unite!

Are there any MAPINFO users out there? Denise Bleakly at Sandia National Laboratories is interested in finding out if there are enough users in New Mexico to start a MAPINFO users group to share tips, tricks, and show-off applications. If you are interested, please contact Denise at 505-284-2535, or by email at *drbleak@envc.sandia.gov*

USDA Forest Service Produces Digital Orthophotos

The USDA Forest Service has played an important role in producing digital orthophotos since chartering the National Digital Orthophoto Program in 1993. In a joint effort with the USDI/USGS, they began producing the digital orthophotos at the Geometronics Service Center (GSC) in Salt Lake City, UT. The GSC is the national mapping center for the Forest Service and provides map products and services for all areas administered by the Forest Service.

The digital orthophotos require three major products: (1) digital elevation models (DEM); (2) scanned aerial photography; and (3) ground control survey. The 30 meter resolution DEMs are created using the UTM coordinate system and NAD83 ground control. Black and white, 1:40,000 scale aerial photography is acquired through the National Aerial Photography Program (NAPP). The Forest Service provides USGS DEMs of the forest areas, and in return, USGS provides quarter quad scanned NAPP aerial photography. These images are mosaicked to fit the 7.5' format used by the Forest Service.

Ground control is accomplished by licensed Forest Service surveyors. Horizontal ground control points are acquired using global position systems (GPS) and are accurate to within 1 meter. The Forest Service is establishing permanent horizontal and vertical control in all Arizona and New Mexico National Forests. In New Mexico, these include Cibola, Lincoln, Carson, Santa Fe, and Gila National Forests. Ground control surveys are scheduled for the Santa Fe and Carson National Forests in 1997.

Digital orthophotos are completed and available for the following Southwestern Region National Forests: Tonto, Coronado, Prescott, and Kaibab forests in Arizona; and Lincoln National Forest, New Mexico. Digital orthophotos should be available for Santa Fe and Carson (NM), and Coconino and Apache/Sitgreaves (AZ) National Forests in 1998. Remaining areas should be completed by 2001.

For information on the orthophoto program, contact Maria Arrieta-McGaha in the Engineering Geometronics-Photogrammetry Unit at the USFS Regional Office in Albuquerque (505-842-3861).

Workshops! Workshops! Workshops!

NMGIC is sponsoring a one-day GPS workshop in late March or early April. Course content will include an overview of the technology, followed by a vendor-specific domonstration of GPS equipment. Class size will be limited to 20 participants. Date and location will be announced.

If you are interested in this workshop, please contact Denise Bleakly, Workshop Coordinator, at 505-284-2535 or by email at *drbleak@envc.sandia.gov*

USGS Solicitation for Base Cartographic Data Requirements in the Middle Rio Grande Basin Study Area

Recent investigations of the Albuquerque basin by the U.S. Geological Survey (USGS) and local, federal, state, city, and county agencies have determined that the aquifer system upon which the city of Albuquerque relies is not as extensive as previously thought. This finding has resulted in a concerted effort by federal, state, and local agencies to gather and interpret additional hydrologic, geologic, and geographic data to better manage the region's important water resources.

The USGS established a team to provide research required for the next 5 years and is coordinating efforts with Federal, State, and local agencies. One role of the USGS-National Mapping Division (NMD) is to provide base cartographic data in support of the Middle Rio Grande Basin study.

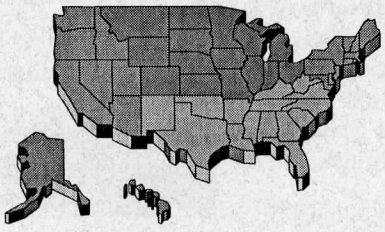
To date the NMD has identified the project area as including 126 USGS 7.5-minute topographic maps. For the project area NMD has:

- Contracted for 1:40,000-scale black and white aerial photography
- Initiated production for completion of the 30-meter digital elevation models (DEM)
- Contracted for production of the 1:24,000-scale digital line graph (DLG) files for hydrography, transportation, public land survey, boundary, and man-made features overlays

The USGS has distributed a Middle Rio Grande solicitation package to several federal, state, and local agencies in New Mexico to identify and coordinate the requirements for and collection of additional products within the Middle Rio Grande Basin study area. Information is included on product descriptions and fact sheets, a graphic showing the project area and instructions for submitting requirements. Request forms need to be completed and returned to Laurie Davis by February 28, 1997.

A NMD Product Sampler has been compiled that includes sample data sets of USGS products. All data sets collected are of the Isleta, NM 7.5-minute quadrangle. Instructions for obtaining the data sets from the Product Sampler are included in the solicitation package.

For more information, or a copy of the Middle Rio Grande Basin solicitation package, please contact:



Laurie Davis
USGS, National Mapping Division
Box 25046, MS 507
Denver, CO 80225
Telephone: 303-202-4111
Email: *Ladavis@usgs.gov*

RGIS News

The Resource Geographic Information System (RGIS) Program is working with Socorro County to bring GIS technology to the County and assist in its application to planning and, in the near future, the Department of Roads and Assessor's office. RGIS Clearinghouse data for the county and parcel information from the Middle Rio Grande Conservancy District for irrigated lands within the Rio Grande Valley have been assembled. Socorro County will be using ArcView 3 on a PC to display and analyze the information. ArcView introductory training and an explanation of the data have been provided to the county. RGIS will continue to assist the county in developing its GIS capabilities as needed.

Last fall, RGIS began a demonstration economic development package for Doña Ana County. Many New Mexico counties need assistance in their economic development efforts. The RGIS Program can provide geospatial data and demonstrate its application in economic development. For the Doña Ana County prototype, socioeconomic data provided by the Bureau of Business and Economic Research, and resource data for the county have been assembled. The demonstration package is in final review and will be presented to the county for their comments and suggestions in the near future. After final revision, the prototype will be presented to other counties.

Mike Inglis
RGIS Program

Changes to USGS Maps

The following are excerpts from a document posted on the USGS WWW home page that addresses concerns expressed by many users on changes to the form and content of topographic maps. For the full text, go to: http://www-nmd.usgs.gov/misc/evolution.html.

During the past several years, changes have been made to the 1:24,000-scale U.S. Geological Survey (USGS) topographic maps. These changes have been made in response to requests from our map users for more current maps. The discussion which follows provides a framework for understanding these changes.

The National Mapping Program (NMP) has a rich tradition of working with State and Federal partners to provide mapping information for the Nation. Through the National Mapping Program, the USGS and its partners have developed products and information that are required for managing the Nation's natural resources, the mitigating natural disasters, understanding our lands and the processes which effect them; and for a multitude of other uses at all levels of government. The public at large has benefitted from this program by having access to inexpensive, government-produced maps and other information which has added to the quality of life for many of our citizens.

We are committed to maintaining high quality, topographic maps for the Nation. A key element of this commitment is updating or revising these maps. Two options exist to accomplish this update. These are referred to as "standard update" and "limited update". Standard updates include revision of all categories of information and a "field check", which is the verification of revised information by literally visiting the site of the information. Limited updates do not include revising contours (the existing contours are depicted on the revised map; a modified symbol is used in areas where the contours are known to have changed) and also do not include a field check. Limited update revisions consume fewer resources of the National Mapping Program, and thereby greatly increase the number of maps that can be revised each year. This is an important aspect of the revision program, as the age of the information on some of the 1:24,000-scale maps seriously impairs their ability to contribute to society.

Today, both standard updates and limited updates are offered as options to our partners in the National Mapping Program. Many of those partners are choosing limited updates as a cost- effective means of updating maps. It should be noted that limited updates include revising those features most likely to have changed. Transportation and hydrographic features are examples of these.

Data currentness, for both maps and digital data, is the characteristic that our cooperators, customers, and the public at large have indicated is their most significant requirement. There is concern that we take too long to produce our maps and too long to update them. To this end, we have moved to a digital process for 1:24,000-scale map revision of both paper maps and digital products. This includes both standard update and limited update revisions. The primary reason for this change was to increase production efficiency and get both revised vector data and revised maps from a single process. Digital production is not the reason that the level of content of the maps has changed. It is possible to produce the same level of content in a digital environment as it was in a manual, or analog, revision. The positional accuracy of information on digitally-produced maps is equal to that of an analog map.

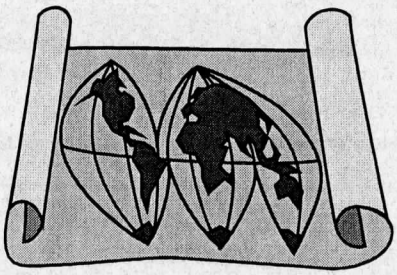
(Continued on page 6)

State Mapping Advisory Committee Report

The State Mapping Advisory Committee (SMAC) will be having its second meeting Friday February 21 at 10 AM in the EDAC conference room. The meeting has been called to discuss and respond to the request by USGS to identify and coordinate the requirements for, and collection of, additional products within the Middle Rio Grande Basin study area. A packet of information was distributed to all SMAC members and to many others within New Mexico with a focus on the Middle Rio Grande. A response will be prepared by the committee for submittal to the USGS by February 28th.

SMAC will be discussing other mapping issues in the state including status reports on recent aerial photography acquisition and digital data availability. A proposal for disseminating committee information will be presented.

Mike Inglis, Chair



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In most cases, a monoscopic USGS digital orthophoto quadrangle (DOQ), is the basis for limited update revisions. A DOQ is digital aerial photography that has been rectified to remove distortion and has the geometric properties of a map. Monoscopic revision from a DOQ does not require stereo model set-ups, and so in most cases can be accomplished more quickly than stereoscopic revision. The positional accuracy of planimetric features compiled using monoscopic techniques is comparable with the accuracy of stereoscopic compilation. The obvious difference is that with monoscopic revision, which is a two-dimensional process, contours, which reflect the third dimension, cannot be revised. Stereoscopic revision of contours is offered as an option; however, many cooperators have elected to revise only the planimetric features, and thereby save the time and expense of contour revision. Of all of the features on our maps, contours are among the least likely to require frequent revision.

Providing limited updates as an option within the NMP is an important step toward the goal encouraged by our State and Federal partners to provide more current maps and digital data by increasing the number of maps that can be revised each year.

For more information on the National Mapping Program, contact Laurie Davis at (303)202-4111. For information on policies of the USGS, contact Gordon Eaton, Director, USGS, National Center, Reston, VA 22092.

GIS Services Now Available at the New Mexico State Library

The New Mexico State Library is now offering public access to GIS software and data. Library patrons interested in using desk top GIS technology have access to ArcView 2 software and the New Mexico Resource Geographic Information System (RGIS) Resource Data. Through a donation from the RGIS Program Clearinghouse, library users can now utilize hundreds of public domain digital data sets contained on the new RGIS CDs for New Mexico. Technical assistance and data conditioning for this project were provided under contract to the University of New Mexico, New Mexico Engineering Research Institute. For further information on this project, please contact : Glenn Olson, UNM/NMERI, (505) 272-7296, *golson@unm.edu*. For more information about the New Mexico State Library GIS Services, please contact : Mark Adams, New Mexico State Library Interlibrary Loan, *madams@stlib.state.nm.us*. The New Mexico State Library is located in downtown Santa Fe at 325 Don Gaspar, Santa Fe, NM 87501-2777, telephone (505) 827-3800.

***The Map Legend* 1997 Publication Schedule and Deadlines**

Spring/Summer	Deadline for articles: *May 15, 1997*
	Publication date: *June 15, 1997*
Fall Issue	Deadline for articles: *Sept. 15, 1997*
	Publication date: *October 15, 1997*

Geographic Names Committee Report

At their December 1996 meeting, the members of the U.S. Board on Geographic Names (USBGN) voted to approve the applications of several names in the Sandia Mountains: Cañon Media, Cañon Osha, Cueva Canyon, Las Huertas Canyon, Media Spring, and Osha Spring. The names had appeared with incorrect locations on some earlier USGS maps, but local investigation by the NMGIC Geographic Names Committee revealed consensus as to the correct locations. The USBGN also approved changing the official name Sandia Peak to North Sandia Peak, again to reflect local usage.

At their next meeting, the members of the NMGIC Geographic Names Committee will attempt to resolve the items remaining on the USBGN dockets for New Mexico. These include:

- Making official the local-use names of several features at El Malpais National Monument: Encerrito, El Calderon, Lost Woman Crater, and Cerro Candelaria.
- A proposal to name a possibly unnamed summit in the northern Sangre de Cristo Range Perra Peak, to honor a dog who had accompanied the proponents on hikes there. They originally had proposed the name Cheever, the dog's name.
- A proposal to change the name of Steins Peak to Steens Peak, to reflect the correct spelling of the name of the U.S. Army officer for whom the peak was named. The proposal has received little support, though opposition also has been less than overwhelming.
- A proposal to change the name Oak Hollow in Cibola County to Burnt Mill Canyon.

Bob Julyan, Chair

Public Review of FGDC Accuracy Standards

The Federal Geographic Data Committee (FGDC) has released the *Geospatial Positioning Accuracy Standards* for a period of public review and comment closing on May 15, 1997. The FGDC invites state and local governments, academia, industry, and the public to review, test, and evaluate the proposed standards. Comments are encouraged about the content, completeness, and utility of the proposed standard.

The *Geospatial Positioning Accuracy Standards* provide a common methodology for reporting the horizontal and vertical accuracy of clearly defined features where the location is represented by a single point coordinate. They facilitate the interoperability of spatial data by providing a consistent means for users to directly compare positional accuracies obtained by different methods for the same point. This standard is FGDC's first effort to integrate standards for different applications.

The *Geospatial Positioning Accuracy Standards* contain sections on reporting methods, a proposed standard for geodetic networks, and a proposed national standard for spatial data accuracy. The proposed geodetic standard will replace previous accuracy standards of the Federal Geodetic Control Subcommittee, and the proposed spatial data accuracy standard will replace the United States National Map Accuracy Standard (U.S. Bureau of the Budget, 1947).

Requests for written copies of the *Geospatial Positioning Accuracy Standards* should be addressed to Geospatial Positioning Accuracy Standards Review, FGDC Secretariat, Attention: Jennifer Fox, U.S. Geological Survey, 590 National Center, 12201 Sunrise Valley Drive, Reston, VA 22092. Telephone: 703-648-5514; Fax 703-648-5755; email: *gdc@usgs.gov* It can be downloaded from *ftp://www.fgdc.gov/pub/standards/Accuracy/* Comments may be sent to the FGDC at the above address.

ESRI Authorized Learning Center

Environmental Systems Research Institute (ESRI) has recently designated the New Mexico Engineering Research Institute as New Mexico's only ESRI-Authorized Learning Center. You can now attend the ESRI developed *Introduction to ArcView®* course and learn the latest, most up-to-date geographic information system (GIS) technology and software from an ESRI® Authorized ArcView® Instructor right here in New Mexico. The two-day *Introduction to ArcView®* course gives the hands-on experience and conceptual overview needed to take advantage of ArcView 3.0 software's advanced display, analysis, and presentation mapping functions. Learn basic ArcView functionality and become familiar with ArcView's graphical user interface. Become productive with ArcView quickly, learn to create, edit, and display geographic and tabular data. Learn to query and analyze geographic and tabular data, and create presentation-quality maps and charts.

Introduction to ArcView® is taught by Glenn Olson, the only ESRI® Authorized ArcView® Instructor in New Mexico. Mr. Olson is a staff member at the University of New Mexico and has been developing GIS applications in New Mexico for the past six years. He has more than twenty years experience in developing information systems technology, and he is familiar with the public domain data sets and GIS projects in New Mexico. He can teach you how to apply the benefits of desktop GIS to your projects.

For further information on class schedules or Authorized Learning Center activities, please contact Glenn Olson at (505) 272-7296, *golson@unm.edu*.

1997 NMGIC Spring Meeting

April 25, 1997
University of New Mexico
Science & Technology Park
801 University Blvd SE

Theme: GIS in Business

Vendor Exhibits -Presentations

Mark your calendars today!

Program details will be mailed shortly.

CENR National Environmental Monitoring Initiative Website

Phase I of the website for the Committee on the Environment and Natural Resources (CENR) National Environmental Monitoring Initiative is now complete. The CENR is in the White House Office of Science and Technology Policy. The website displays information about this CENR initiative, contains hotlinks to partner agencies, and features maps, information, and hotlinks for approximately 35 national programs. The website also includes about 65 canned spatial queries, which preview the utility of user-defined database queries that will be available in Phase II.

The website is located at *http://www.epa.gov/cludygxb/* While the website user can link to many other destinations, there currently are no links ***to*** this website from other sources. Interested partners are encouraged to make these links from their agency and program sites as soon as possible.

Phase II of the website is already underway, which will have maps and more detailed information for approximately 150 federal programs and projects that collect significant ecological data in the mid-Atlantic region. Web pages for these programs and projects will be accessible beginning in March 1997, with spatial querying capability of a 500-field database by September.

NMGIC Home Page

The NMGIC Home Page has been re-designed. Check it out at *http://www.state.nm.us/nmgic*

Name Generics (Not the Same as Generic Names)

Toponymy 101. Name morphology. Each geographical name typically has two parts: 1) a "generic," referring to the class to which the feature belongs, such as a mountain, river, town, etc; and 2) a "specific," identifying that specific feature, i.e., Pecos River, Sandia Mountain, Grand Canyon. Generic and specific, just like the scientific names in biology.

If only it were that simple! But nothing in names is simple. Sure, most names do fit into the generic-specific pattern, but not all. The western hemisphere's highest summit is Aconcagua. Not Mount Aconcagua nor Aconcagua Peak, just Aconcagua. Most town names don't have a generic attached to them (New Mexico's Pie Town is an exception). At the other extreme are names that have too many generics. Near Las Cruces is Picacho Peak. No specific, just two generics but in different languages. Throughout the West are flat-topped landforms named Table Mesa. It's like a man named Señor Mister!

Then there's the problem of inconsistency in how generic terms are applied. In the Sangre de Cristo Mountains near Taos is a 12,700-foot summit, New Mexico's 12th highest peak, a major mountain, and it's named Gold Hill! On the other hand, west of Jal is a little pimple on the land, only 3,232 feet in elevation, vertical relief of only 50, and it's named Custer Mountain! I have a vivid memory of one September taking the members of the U.S. Board on Geographic Names, (USBGN) all of whom live in the Washington DC area, on a walking tour of Santa Fe. They wanted to see the Santa Fe River. Suffice it to say that in September the Santa Fe River was somewhat less impressive than the Potomac!

As if that weren't bad enough, each region has its own vocabulary of generics. If you weren't a native of New Mexico, did you know what an loma was when you moved

(Continued on page 14)

Call for Exhibitors

The Spring NMGIC meeting features vendor exhibits in the spatial technologies. As a vendor, this is your opportunity to reach 80-100 NMGIC members.

Exhibit fees:
Corporate members: $150
Non-corporate members: $200

April 25, 1997 at UNM Science & Technology Park in Albuquerque

For more information, contact Bill Baillargeon, Exhibits Coordinator, 505-827-2047, or by email at *bbaillargeon@state.nm.us*

BLM's Geographic Coordinate Data Base

BLM is building an automated Land Information System (LIS) for improved public land management. BLM will use the LIS, known as ALMRS (Automated Land and Minerals Record System) in making resource management decisions such as processing applications for mineral leases, designating utility corridors, issuing land use permits, locating wildlife habitat improvements, preparing timber sales, evaluating alternatives in environmental assessments and land use plans, and generating reports and maps. BLM is automating fundamental types of information for ALMRS: the Geographic Coordinate Data Base (GCDB) from the National Public Land Survey System (PLSS); land and mineral records; and natural resource data files. Thus, ALMRS will for the first time tie BLM's records and natural resource data to Legal Land Descriptions (LLD) of specific land parcels through a unified automated system. Fundamental to this approach is a common reference system for the different types of data - the GCDB is built from the Public Land Survey System (PLSS). Collectingn, analyzing, and managing these data are the responsibility of the BLM, Branch of Cadastral Survey.

Data Collection: Accurate locations for monuments within a township can be obtained by using a variety of control survey techniques such as a global positioning system and field types. Other sources of coordinates may also be used to supplement the data base such as digitizing the location of found corners from various map sources or photographs. These locations are used with the bearings and distances of the cadastral surveys to calculate latitude and longitude of the remaining corners. These geographic coordinates may better represent the location of monuments on the ground than the early BLM cadastral plats. Using the concept of an automated Public Land Survey System/Geographic Coordinate Data Base (PLSS/GCDB), survey information that is now manually drawn on maps from separate documents can be shared by computer and displayed automatically on one map, with the legal parcel corner as the foundation to which all other information is registered or aligned.

The PLSS/GCDB will eventually contain coordinates for corners of rectangular and special surveys including metes and bounds. As geographic coordinates are established for resource boundaries, resource data can be merged with the most current ownership, status, and survey data because all of the necessary information is located in the same latitude and longitude or compatible reference system.

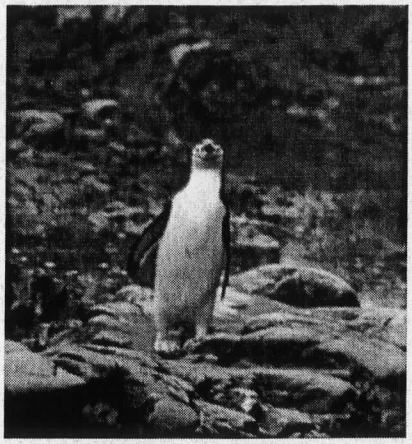
The GCDB coordinates, and their by-products, were generated from official PLSS records and supplemented with the best available control or data digitized from various cartographic products. Excepting where a PLSS corner monument has been used as a first or second order control point and are of public record, the coordinate values used by GCDB are established with varying reliability based on the source material and the method of data input. These coordinate values will be updated as better data and methodology are available. Graphic representations using these values depict the most probable township configuration and may change as a result of such updates.

Benefits of GCDB:

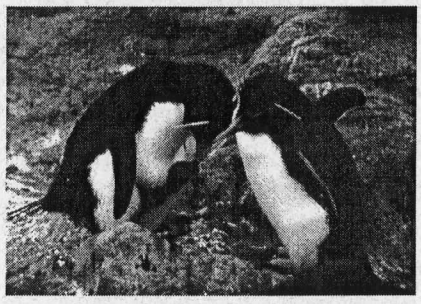
- Geographic as well as various plane coordinates of PLSS, to the second and third township divisions (40 acres).
- PLSS coordinates based on and weighted according to Cadastral Survey data (plats, field notes) and not derived from interpreted/digitized maps.

(Continued on page 11)

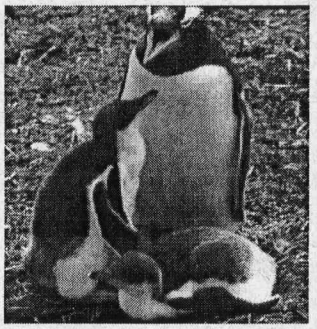
GPS Committee Report



I think I see a satellite!



Establishing a base station.



GPS Workshop

Bill Stone, Chair
(on leave to Antarctica)
Photos courtesy, Stan Morain

job board

Position Wanted:

I am seeking a position as a GIS technician in an environmental or related field. I would be willing to work part time or on a project/temporary basis. I have experience in designing and implementing GIS technology, including creating and editing manuscripts; digitizing GIS coverages and creating associated databases; and basic spatial analysis. I am familiar with VAX ARC/INFO and ArcView, and am willing and eager to train on other platforms. I also have excellent writing skills. I have an M.S. in anthropology and have GIS experience related to my thesis, and in professional settings. I have worked in the environmental consulting field for 5 years.

Amy Graham
Route 4, Box 21-H
Santa Fe, NM 87501
Phone: 505-992-8263
Email: *graham@citrus.ucr.edu*

Intern Positions Available:

The Environmental GIS at Sandia National Laboratories is accepting resumes and letters of qualifications for two possible GIS intern positions within the GIS unit. You must be an American citizen, either an undergraduate or graduate student in Geography, Geology, Planning, or Computer Science, and have some working knowledge of ARC/INFO. Please submit a letter of interest listing all GIS related course work and a complete resume. Resumes will be accepted until the end of March and a decision will be made by the end of April.

If you are interested, please contact Denise Bleakly by phone at 505-284-2535; by email at *drbleak@envc.sandia.gov*; or by mail at Sandia National Laboratories, P.O. Box 5800, MS-1147, Albuquerque, NM 87185-1147.

GIS Expo in New Mexico

Date: Tuesday, March 4, 1997
Time: 8:30 am to 5:00 pm
Location:

Holiday Inn Pyramid
5151 San Francisco NE
Albuquerque, NM 87109

For more information contact:
Mark Taetz
ESRI-Denver
303-449-7779

Busiest Intersections in Albuquerque

Quick—what are the busiest intersections in Albuquerque? (No, you can't answer "All of them.") If you were reading this in your car as it sat in a long line at the intersection of Montgomery and Wyoming, you'd be tempted to say that was the busiest—and you'd be right. Your vehicle would be just one of an estimated 93,512 vehicles that pass through the intersection each day.

This information was included in a front-page *Albuquerque Journal* article based on an interview with Nathan Masek, transportation planner with the Middle Rio Grande Council of Governments and recipient of the 1996 NMGIC scholarship.

The MRGCOG studies traffic flow each year in Bernalillo, Sandoval, Valencia, and Torrance counties and shares the information with local governments for planning purposes.

According to Masek, traffic volume in Albuquerque increased 4.2 percent from 1994 to 1995. The five busiest intersections remained the same, however. After Montgomery-Wyoming, they were, with daily vehicle averages:

- Montgomery-San Mateo, 92,872
- Menaul-San Mateo, 81,258
- Menaul-Wyoming, 78,524
- Central-San Mateo, 73,780

Masek said 21 of the 25 busiest intersections were in Albuquerque's Northeast section. San Mateo and Wyoming Boulevards each have six intersections in the top 25, while Wyoming and Lomas each have five. Menaul has four.

But Masek said traffic on the West Side of Albuquerque is just beginning to realize its growth potential, meaning more intersections there also will be joining the top 25, especially intersections near the new Cottonwood Mall.

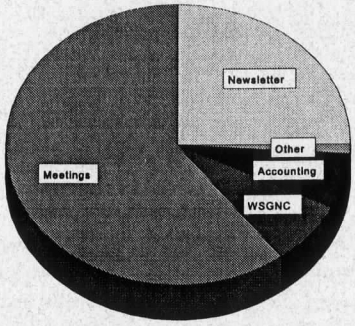
How Your Membership Dues are Used

Hillary Armstrong, NMGIC treasurer, submitted a detailed analysis of annual membership dues at the Board of Directors' meeting held January 23rd at Earth Data Analysis Center. One of the traditional tasks for this meeting is to prepare and approve the current year's NMGIC budget. The pie charts presented at right show members how their annual dues are allocated within that budget. In 1995, 25 percent ($5 of a $20 membership) was spent on printing and mailing quarterly issues of *The Map Legend*. In 1996, this rose to 28.3 percent, or $5.66. The Board is aware that for many members *The Map Legend* is the primary reason for membership. With rising costs across all of NMGIC's member services, however, the newsletter is scheduled for only three issues in 1997. After this issue, there will be a summer issue (June/July time frame) and a fall issue (October/November time frame).

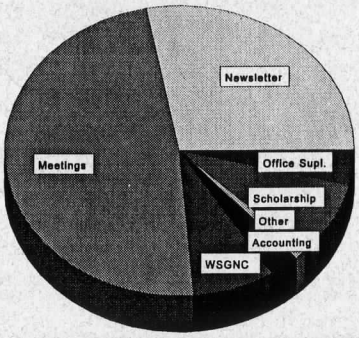
Other membership services are focused on the Spring and Fall meetings. The Spring meeting traditionally highlights commercial vendors' products and services, while the Fall meeting exhibits posters of GIS, image processing, and/or GPS applications. In 1995, over 60 percent of membership dues were spent on these two meetings (roughly 11% on speaker costs, 18% on meeting room expenses, 23.6% on exhibit set-ups, and 7.7% on refreshments). For the same expenses last year, we spent only about 48 percent of revenue on these meetings because we were able to lower the costs of meeting space and exhibit set-ups.

The remainder of costs in 1995 and 1996 were allocated to the NMGIC scholarship (1996 only), accounting fees, office supplies, and attendance at the Western States Geographic Names Conference. The 1997 NMGIC budget anticipates no unusual expenses, but as ever, the Board is exploring innovative ways to reduce costs while expanding membership services. Any suggestions you have will be appreciated. In the meantime, if you attend the Spring and Fall meetings and read the newsletter, you will receive $17 of direct benefit from your $20 membership. That's a heckova deal!

1995 Dues Allocation



1996 Dues Allocation



(Continued from page 9)

- PLSS coordinates with a reference to control, source data, and documents used in calculation.
- PLSS coordinates which have had blunders and systematic errors removed, corrected, or isolated.
- PLSS coordinates which have had random errors statistically distributed throughout the data.
- PLSS coordinates which have the coordinate accuracy reported
- Seamless PLSS coordinate coverage.
- PLSS coordinates which show the associated Legal Land Description (LLD) (section num., aliquot part, lot Num., Grant name, special survey type/num.)
- PLSS coordinates which are easily converted to a CAD type file (contain connectivity, line types, etc.).
- Identifying ares of boundary and record inconsistencies, where a survey is needed before any administrative action can commence.

For more information on GCDB visit *www.blm.gov/gcdb*

Robert Bewley, BLM

Air Force Gets New GIS

The Melrose Air Force Range GIS is now complete. It was created through a collaboration between the Natural Heritage Program and the Sevilleta Long-Term Ecological Research Project, both in UNM's Biology Department. Elevation contours, property boundaries, stream beds, roads, and buildings were digitized as separate coverages from USGS 7.5' quads. A soils coverage was reproduced from the *General Soil Map of New Mexico*, provided by the RGIS Clearinghouse. A coverage of wildlife sample locations was created from differentially corrected GPS points, and a vegetation map was developed from classified Landsat TM data. This GIS will support Air Force monitoring of ecological responses related to use of the Melrose property.

Gregg MacKeigan, UNM Biology Dept.

1997 Corporate Sponsors

Bohannan-Huston, Inc.

Courtyard I
7500 Jefferson St NE
Albuquerque, NM 87109
505-823-1000 (v); 505-821-0892 (f)

Bohannan-Huston, Inc. is a multi-disciplinary consulting surveying, mapping, and engineering firm founded in 1959. Our main Albuquerque office is supported by two additional locations in Santa Fe and Las Cruces. In response to the growing need for geographic information among municipalities, and federal and state agencies, we have merged our Photogrammetric and Automated Mapping Technologies Group, our Surveying Technologies Group, and Diginetics (our applications software group) to form Spatial Data Technologies. This group provides: large and small LIS/GIS and facility databases; digital orthophotography; digital mosaicks; digital terrain data; engineering site and corridor design data; graphical and attribute data translations; and GPS real time kinematic and static surveys.

Our commitment to leading edge technology and implementing current developments in the mapping sciences keeps us at the forefront of the industry. In-house, multi-vendor interacitve graphics and CAD systems, along with a comprehensive translator library, allow us to provide digital graphics and attribute data for use on a variety of systems.

With Diginetics as part of the team, Spatial Data Technologies has 18 years of focused computer applications experience in a production environment. This extensive experience led to developing a comprehensive interactive graphics system called DIGIMAP, which is capable of handling very large continuous and contiguous geographic and facilities databases. Diginetics is also a registered Independent Software Developer with Bentley Systems, Inc. and Intergraph Corporation. Diginetics develops customized spatial data software for a variety of in-house, private and government clients, enabling rapid prototyping and development of software applications.

Koogle & Pouls Engineering, Inc.

8338A Comanche NE
Albuquerque, NM 87110
505-294-5051 (v); 505-296-2672 (f)
harron@kpenger.com

Since our founding in 1964, *Koogle & Pouls, Inc.* has obtained extensive experience in geodetic surveys; site surveys, utility surveys; black and white, color, and color infrared aerial photography; reprographics; analytical aerotriangulation; conventional orthophoto preparation; black and white and color infrared digital orthophotos; photogrammetric mapping to prepare planimetric and topographic databases; developing digital terrain models; geographic and attribute database construction; and computer graphic presentations. Successfully completed projects cover a wide geographic area, from Washington State through California, to Chihuahua, Mexico. Our staff includes professional engineers, surveyors, and photogrammetrists whose many years of experience include projects in Alaska and Zaire. The experience of senior staff members spans 20-40 years of diverse assignments in photogrammetric engineering and allied control surveys. Since our founding, we have utilized a *Total Quality Management* approach to projects. Our clients receive support from experienced personnel knowledgeable in employing the advanced instrumentation available to them. Key personnel work closely with clients to ensure that each project is planned in the most cost effective manner.

Koogle & Pouls has maintained an investment in technology, resulting in a complete surveying and photogrammetric capability, including four Ashtech ME-XII Global Positioning receivers; Geodimeter 640 "Total Station" system; Supercharged Cessna 206 aircraft; Zeiss RMKA 15/23 cartographic camera with closed circuit TV navigation monitors and GPS navigation system; automated film processor; LogEtronic printer; automated color processor; Borrowdale process camera; customized HE-12 rectifying enlarger; Kern DSR-14/300 analytical stereoplotters; Intergraph 6040 and 6440 Interpro workstations, and Precision Image 636 color electrostatic plotter.

1997 Corporate Sponsors

EarthData, LLC Corporate Profile

6100 Seagull Lane NE, Suite 105
Albuquerque, NM 87109
505-872-0207 (v); 505-872-0209 (f)

EarthData, LLC specializes in developing spatial data technologies to support engineering, environmental, and land management applications of our clients. Specific services offered by *EarthData* include acquiring aerial photography, imagery, and airborne/ground GPS control to provide an array of digital products, including topographic and planimetric mapping and orthophotography. Additional services include developing GIS databases, image processing, data integration, and training.

Based in Albuquerque, NM, *EarthData* is affiliated with three other companies (each contributing vital, specialized technical capabilities) to serve clients worldwide. In particular, *EarthData's* Albuquerque office also serves as the organization's main center for testing new and emerging mapping technologies. Collectively, this group of over 100 professionals has expertise and experience in all aspects of spatial data acquisition, development, and analysis. Affiliated members of the *EarthData* family include:

Photo Science, Inc., Gaithersburg, MD: With 80 full-time employees, *Photo Science's* Gaithersburg facility is the largest of the affiliates and serves as the heart of the organization's mapping production.

Piedmont Aerial Surveys, High Point, NC: Since 1962, *Piedmont Aerial Surveys* has provided digital topographic and planimetric mapping services at a variety of scales for clients nationwide.

Aero Contractors LLC, Hagerstown, MD: The aviation arm of the organization provides aerial photography in black and white, color, and color infrared, airborne GPS surveying ,and a variety of other airborne data acquisition services.

Clint Sherrill & Associates Corporate Profile

730 San Mateo Blvd. SE
Albuquerque, NM 87108
505-256-7364 (v); 505-256-7600 (f)
sherrill@flash.net

Clint Sherrill & Associates is a privately owned local business initially incorporated in 1975 as a Colorado corporation, and later relocating to Albuquerque to provide all aspects of GIS and land surveying services. We have 22 years of experience in all phases of surveying, including topographic, engineering, and boundary surveys, photogrammetric mapping support, construction layout, and right-of-way mapping.

The company has extensive experience in aerial mapping and in many projects has provided GPS control monumentation and ground panels for aerial photography. It has its own GPS receivers and is proficient in establishing geodetic control networks as a basis for cadastral and route surveys.

Clint Sherrill & Associates was accepted into the ESRI Business Partner Program as the only organization in New Mexico that is both a reseller and development site for ESRI products. We have been working on a multi-phase contract to develop GIS base coverages for Bernalillo County Public Works Department. These include road centerlines, parcels, subdivisions, easements, geodetic control, project control, color aerial photo panel point control, Bernalillo County Zone Atlas cells, and relevant USGS quads for the county. Color orthophoto images have been developed that are referenced, aligned, and sized to fit one-quarter township areas. Our GIS manager, who has over 8 years of GIS experience, is responsible for this project. GIS services include: GIS needs assessment; database design; unique training and installation; GPS data collection; aerial mapping; document scanning and GIS integration; E-911 dispatch database design; and rural addressing.

Cool Internet Web Sites

To continue the series of mapping and GPS related web sites, we have found the following sites that may be of interest to the NMGIC membership. As always, if you come across something you think the rest of the membership might find useful, please contact Denise Bleakly at 505-284-2535, or email to *drbleak@envc.sandia.gov* to let me know and I will add it to the list for the next *Map Legend*. NMGIC Corporate Sponsors, if you have a web site, please contact me. I will be compiling a special list of our corporate sponsors for a future edition.

The following sites were compiled from various trade magazines, submissions from members, and sites found by surfing the web. They are listed in no particular order.

- CENR National Envrionmental Monitoring Initiative — http://ww.epa.gov/cludygxb/
- LandView II Electronic Atlas of Environmental Data — http://www.census.gov/geo/www/tiger/
  LandView II is an electronic geographic atlas. It displays EPA regulated sites and selected Census Bureau 1990 demographic data. It also presents a detailed network of roads, rivers, and railroads from the TIGER/Line 1992 geographic database. This product was produced cooperatively by the US EPA and the US Department of Commerce.
- Map Blaster — http://www.mapblast.com
  This site is unique in that it gives you both the map you request, and a way to copy the map to your own site, or email it to yourself or to someone else. This site is my personal favorite.
- City Search — http://www.citysearch.com
  This site offers detailed location maps for many cities.
- BigBook — http://www.bigbook.com
  This site is an electronic yellow pages which has a mapping application attached.
- MapQuest — http://www.mapquest.com
  This site has an interactive atlas, but can also provide trip and driving routes between any two addresses.

1997 NMGIC Board Election

The NMGIC election committee is seeking nominations for four positions on the Board of Directors. NMGIC Bylaws require that candidates be current members....1997 dues mustal-ready be paid. Nominations close March 18, 1997 and should be submitted to Rick Watson, Elections Coordinator, by phone at 505-599-0373, by fax at 505-599-0385, or by email at *watson@sjc.cc.nm.us*

(Continued from page 8)

here? A rito? A barranca? Breaks?

Because a primary mission of the USBGN is consistency in names, the Board has collected generic terms used around the country. For example, Americans use more than 120 terms for "stream." A sample: awawa, chute, dribble, fly, guzzle, pup, and spung. Americans have more than 60 terms for swamp; my favorite is dismal: "Through the mists rising from the dismal could be heard the mournful cries of long-lost Elvis...."

Of course, the USBGN has cataloged all these terms to try to create some order among them, and it has done this by assigning carefully defined feature classes. Thus, dribble, guzzle, and spung belong to the feature class "stream." Cities, towns, villages, and hamlets all are "populated places." A list of these feature classes, their definitions, and the local terms within them is part of GNIS. So the situation isn't completely hopeless.

Of course, none of this helps when you ask directions from a rancher somewhere in the New Mexico backcountry, and he replies, "Well, you go down that cabaranza till you reach a big whung on your right, then hang a left past a pipperito till you reach a funny-looking yahoo. You can't miss it."

Bob Julyan, Chair
Geographic Names Committee

THE MAP LEGEND

Editors: Stan Morain
Amy Budge
Bob Julyan

The Map Legend is published by the New Mexico Geographic Information Council and is a benefit of membership in NMGIC. The opinions expressed are those of the contributors and do not necessarily represent the views of the New Mexico Geographic Information Council, except where specifically noted. Use of trade names or products does not constitute an endorsement by the NMGIC. Members are invited to send articles and announcements of interest to Stan Morain. Please direct all correspondence to:

Stan Morain
% Earth Data Analysis Center
2500 Yale Boulevard SE, Suite 100
University of New Mexico
Albuquerque, NM 87131-6031

Fax: 505 277-3614
Email: *smorain@spock.unm.edu*

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NMGIC
Committees

Geographic Names Committee
Bob Julyan, Chair

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GIS Committee
Bill Baillargeon, Chair

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GSD/ISD
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Telephone: 505 827-2047
Fax: 505 827-2325
Email: bbaillargeon@state.nm.us

Global Positioning Systems Committee
Bill Stone, Chair

National Geodetic Survey
% Albuquerque Public Works/Survey Section
400 Marquette NW, Room 401
Albuquerque, NM 87102
Telephone: 505 768-3606
Fax: 505 768-3629
Email: stone-ngs@cabq.gov

Local Government Land Records Committee
Gar Clarke, Chair

City of Santa Fe
200 Lincoln Ave
Santa Fe, NM 87501
Telephone: 505 984-6603
Fax: 505 986-6910

State Mapping Advisory Committee
Mike Inglis, Chair

Earth Data Analysis Center
2500 Yale Boulevard SE, Suite 100
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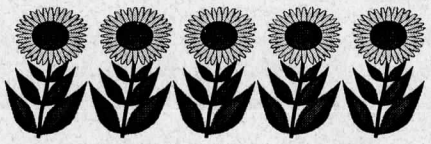
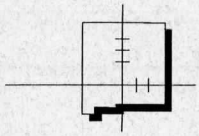
Fax: 505 277-3614
Email: minglis@spock.unm.edu





THE MAP LEGEND

The New Mexico Geographic Information Council
c/o Stan Morain
Earth Data Analysis Center
2500 Yale Boulevard SE, Suite 100
University of New Mexico
Albuquerque, NM 87131-6031

Calendar

8th U.S./Mexico Border States Conference on Recreation, Parks, and Wildlife; Hermosillo, Sonora, Mexico, February 26 - March 1, 1997. Contact: M.C. Juan Carlos Barrera, Reyes Y Aguascalientes (esq.), Col. San Benito, Hermosillo, Sonora, Mexico, C.P. 83-190. Fax: 91 (62) 14-65-08

GIS Expo in New Mexico by ESRI, Holiday Inn Pyramid, Albuquerque, NM, March 4, 1997. Contact: Mark Taetz, ESRI-Denver. Telephone: 303-449-7779

Conference XX: Entering the Mainstream, AM/FM International's Annual Conference and Exhibition, Nashville, TN, March 23-26, 1997. Contact: AM/FM International, 14456 E. Evans Ave, Aurora, CO 80014-1409. Telephone: 303-337-0513. Fax: 303-337-1001

ACSM/ASPRS Annual Convention and Exhibition, Seattle, April 7-10, 1997. Contact: ASPRS, 5410 Grosvenor Lane, Suite 210, Bethesda, MD 20814-2160. Telephone: 301-493-0200. Fax: 301-493-8245

NMGIC Spring 1997 Meeting, Albuquerque, NM, April 25, 1997. Contact NMGIC, c/o EDAC, University of New Mexico, 2500 Yale SE, Suite 100, Albuquerque, NM 87131-6031. Telephone: 505-277-3622, ext 231. Fax: 505-277-3614. Email: *abudge@spock.unm.edu*

International Symposium: Geomatics in the Era of RADARSAT, Ottawa Congress Centre, Ottawa, Canada, May 24-30, 1997. Contact: GER'97, 588 Booth Street, 3rd Floor, Ottawa, Ontario K1A 0Y7, Canada. Telephone: 613-996-2817. Fax: 613-947-1382. Email: *ger97@ccrs.nrcan.gc.ca*

Annual ESRI User Group Conference, San Diego Convention Center, San Diego, CA, July 7-11, 1997. Contact: ESRI, Inc., 380 New York St., Redlands, CA 92373-8100. Telephone: 909-793-2853, ext 11363. Email: *uc97@esri.com* Website: *http://www.esri.com/headlines/uc/97uc.html*

URISA '97, 35th Annual Conference and Exhibition, Toronto, Canada, July 20-24, 1997. Contact: URISA, 900 Second St. NE, Suite 304, Washington, DC 20002. Telephone: 202-289-1685. Email: *training@urisa.org*