THE MAP LEGEND

Mount McKinley, Cheever Peak, and the Executive Committee Range

Perhaps I should have expected it. Within days of the death of Fray Angelico Chaves, venerable New Mexico scholar and author, the phone rang with an inquiry as to how a feature could be named to honor him. I received a similar call after Georgia O'Keeffe died.

Yes, I responded to the person on the phone, it is possible to name a feature for Fray Angelico, but in New Mexico, where all but the most insignificant features have local names, the process is fraught with potential conflicts; just ask the Barker family.

And, yes, I would be happy to provide advice and assistance in submitting a formal name proposal to the U.S. Board on Geographic Names (USBGN).

But after I hung up I wondered for perhaps the thousandth time since I became involved with geographic names: From whence springs this urge to honor people by naming places for them?

Soon after President Kennedy was assassinated, places all across the nation were named to honor him, the most famous being the change from Cape Canaveral to Cape Kennedy. (Local usage, like a weed beneath a cement slab, proved stronger, and the name now is Canaveral again.)

Controversy still swirls in Albuquerque over a proposal to rename a street for the Hispanic activist Cesar Chaves, just as Grand Avenue was renamed to honor Rev. Dr. Martin Luther King Jr.

In New Mexico, five counties were named for U.S. Presidents (can you name them?). The town of Folsom was named to honor Grover Cleveland's young bride. The ranching settlement of Gladstone was named for the famous English barrister, who likely never saw the place named for him, any more than President Zachary Taylor saw the mountain west of Albuquerque that bears his name.

The North American continent's crowning mountain is cloaked with the name of a man who at the time of the naming was but an Ohio politician who espoused a gold-standard monetary policy that met with the approval of the namer. Does anyone today care about the gold standard? But the mountain still bears Senator McKinley's name.

And how many Americans today have ever heard of the Englishman, Peter Rainier, for whom Mount Rainier was named?

In New Mexico a Taos couple has proposed naming an 10,000-foot-plus peak in the Sangre de Cristo Mountains Cheever Peak, to honor their dog, Cheever, who hiked with them there. But this proposal has a certain quirky sentimental appeal, at least among dog-lovers, compared to what I submit is the world's worst place name. Explorers in Antarctica decided to commemorate the group that had sponsored their expedition by naming a mountain range they discovered the Executive Committee Range.

But lest anyone think grotesque commemorative names are the exclusive province of the English-speaking world, consider these mountain names created by the former Soviet Union: Free Korea Peak, Peak of the Proletariat Press, and OGPU Peak—named for the Soviet secret police!

Not all cultures, however, are addicted to commemorative naming. Native Americans traditionally have eschewed putting people's names on natural features; renaming Washington Pass to honor Chief Narbona at the instigation of the Navajos was the first such instance in US history. I once asked Alfonso Ortiz, anthropologist and member of San Juan Pueblo, why Indians don't name places for people. He responded that such naming would place the individual in linear time, an alien concept.

He also said, "Indians want to be remembered, not written about—they're different things."

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Inside This Issue

From the President
Amy Budge

The previous issue of *The Map Legend* featured articles on transnational GIS activities and programs along the United States/Mexico border. To follow up on this theme, the NMGIC Spring meeting on May 3 will feature speakers from both sides of the border describing GIS projects and activities in the border region. We are pleased to have Dr. Diego Fabian Lozano-Garcia from Monterrey Tech on the program. He is very active in the Transboundary Resource Inventory Project effort in Mexico and is organizing the academic component of the Mexican TRIP. He is very knowledgeable in GIS and is well acquainted with the ARC/INFO software package. The differences between GIS in Mexico and the United States are evident in standards, scales, and data distribution policies. Since data sharing is becoming more and more desirable (including cross-national borders), these issues are gaining a higher priority. Dr. Lozano-Garcia will enlighten our members regarding GIS practices in Mexico. Also on the program are three speakers who will describe their GIS projects in the region on the U.S. side of the border. Dr. Robert Czerniak (NMSU Geography Department), Bobby Creel (NM Water Resources Research Institute), and Dr. David Henkel (UNM Architecture and Planning) each have projects that utilize GIS technology and data along the border. Dr. Charles Groat, UTEP, will present an overview of the Transboundary Resource Inventory Project and its impact on planners and decision makers on both sides of the border.

Also on the agenda for the Spring meeting is the USGS Mega Project in the Middle Rio Grande Basin. Senator Pete Domenici has requested the USGS to study ground-water resources in the Basin. Lee Aggers, USGS National Mapping Division in Denver will brief the membership on goals and objectives of this project. A brief description of the effort is presented on page 4 in this issue of *The Map Legend*.

Our Spring meeting traditionally features exhibits from vendors in the geospatial technologies. We are pleased to welcome these vendors and look forward to learning of their products and services that contribute to the advancement of geographic information in New Mexico.

As we advance geographic information technologies in New Mexico, it is important to recognize efforts being made in data and information sharing. Limited and reduced financial resources are demanding cooperation between agencies in order to optimize the resources at hand. Concepts such as distributed databases and clearinghouses are becoming popular, as the realities of obtaining data via Internet and ftp access are hitting closer to home. The very core of NMGIC's existence lies in its purpose to serve as a forum and conduit for data and information sharing, as well as its goal to promote education in the geospatial sciences. The USGS Middle Rio Grande Project and the transboundary GIS activities each exhibit the necessity for data sharing to achieve their goals. NMGIC is proud to be a participant in this process. Please mark your calendars for the May 3 rd meeting. Program details are presented on pages 8-9 in this issue of *The Map Legend*. See you there!

Correction

The correct
Home Page address
for the
RGIS Program is

http://rgis.unm.edu:8080

This error was made in the
Winter 1996 issue of
The Map Legend.

We regret any
inconvenience
this may have caused.

Name Litter in the Wilderness

The 1964 Wilderness Act establishing wilderness areas on public lands defined wilderness as a place where man is a visitor and does not remain, embodying the philosophy of "leave only tracks, take only photographs." Yet within even the most remote and pristine wilderness areas humans have left signs of their presence that potentially are more durable than aluminum cans--place names--thus engendering one of the most persistently controversial policies of the U.S. Board on Geographic Names (USBGN): No new name proposals will be considered in current or proposed wilderness areas.

The only exception to this policy is when a proposer has demonstrated a name is needed for public safety, as in search and rescue.

Some people ridicule that names on a map impair the wilderness experience, but others say blank spaces on a map are indeed integral to what we perceive as wilderness. Still others say named features are more likely to be connected by trails.

The USBGN notes that the overwhelming majority of new name proposals for wilderness areas are commemorative (see article this issue), many of which are inappropriate. Still, the USBGN will consider proposals to change existing names, so some persons are using that tactic to create commemorative names.

This policy will continue to generate controversy. Let me know what you think.

By Bob Julyan, GNC Chair

When the People Vote

When the citizens of the Grant County community of Central recently voted to change the village's name to Santa Clara, the original name, some NMGIC members probably wondered what role the NMGIC Geographic Names Committee (GNC) played. The answer is: no role at all. But the reason has nothing to with any slight or oversight but rather with the change occurring through legislation as opposed to a proposal to the U.S. Board on Geographic Names (USBGN). When Congress established the USBGN in 1890, it excluded from the Board's purview names established through legislation. That's why the USBGN has been powerless to change the name Mount McKinley to Mount Denali. Denali is a beautiful, euphonious name with local and cultural significance, and is preferred throughout the U.S. and especially in Alaska to McKinley, which simply honored a U.S. senator from Ohio who probably never saw the mountain—nor cared to. But long ago the Ohio congressional delegation got passed legislation blocking any name change unseating their native son.

And that's why the GNC concluded a USGS proposal to change the Grant County name Rio de Arenas to Whiskey Creek was moot. A USGS field mapping team found local usage favored Whiskey Creek, and GNC polling also found a preference for Whiskey Creek. But in 1912, a state legislator succeeded in passing a bill establishing Rio de Arenas as the name. So...in our society the voters retain the right to create any names they please. A small triumph, perhaps, of democracy over bureaucracy.

By Bob Julyan, GNC Chair

NMGIC Executive Board Meeting Minutes

The meeting, which was held on January 19, 1996, was convened by President Amy Budge at 9:30 am. In attendance were all nine board members and committee chairpersons Bob Julyan and Gar Clarke. The minutes for the October 13, 1995, Executive Board meeting were approved without changes. The consensus of the Board was that the fall meeting, held at the BDM conference center, was extremely successful. Attendance was well over 100, the presenters were very good, and the facilities worked well for interaction between poster sessions and presentations.

The following budget for 1996 was proposed and then approved by the Board:

- Consolidation of the budgets for the Board in general and the Public Awareness and Education Committee, because the Committee was disbanded, and a reduction from the 1995 budget of $9,000 to a 1996 total of $7,000 for the Board in general.
- Keeping the committee budgets of $200 the same for the State Mapping Advisory Committee, the Geographic Information Systems Committee, and the Local Government and Lands Records Committee
- Increasing the budget of $400 to $500 for the Geographic Names Committee

This results in a total budget change from $10,200 for 1995 to $8,500 for 1996.

All of the proposed bylaw changes previously published in the Executive Board meeting minutes and *The Map Legend* were approved unanimously by the Board. Elections for five new Board members will take place this Spring. Proposed content for the Spring meeting was discussed. The focus for the Spring meeting will be use of GIS for border issues. Exhibitor fees will continue to be $200 for non-corporate members and $150 for corporate members of NMGIC. Renewal notices for current corporate members have already been sent out; letters to other possible corporate members will need to be sent out soon.

There was a discussion of developing a NMGIC home page for the Internet. The Board voted to have Amy Budge continue as NMGIC's representative to TRIP meetings, unless it works better at any particular meeting to have another NMGIC Board member represent NMGIC.

The USGS inquired whether NMGIC would like to be a recognized state council to the Federal Geographic Data Committee (FGDC). A motion passed that NMGIC would request this recognition, but clarification is needed whether USGS has any expectations of monetary spending by NMGIC for these activities.

John Peterson discussed an upcoming satellite videoconference which NMGIC can cosponsor. It will be on April 11 at the UNM Division of Continuing Education Center, from 12:00 noon to 4:00 pm. Dave Love will be contacted to obtain a list of his committee members as possible candidates for his chairmanship. Bill Stone requested NMGIC write a letter of support for his funding from the State Highway Department.

NMGIC Spring Meeting
May 3, 1996

NRCS Establishes Three Digital Soil Databases

The Natural Resources Conservation Service (NRCS), formerly Soil Conservation Service, has the Federal responsibility for the National Cooperative Soil Survey and Federal leadership for collecting, storing, maintaining, and distributing soil information on privately owned lands in the United States. The Federal Geographic Data Committee and the Office of Management and Budget have formally assigned the responsibility for national coordination of digital soil data to the NRCS.

NRCS has established three digital soil geographic databases representing different scales and intensities of soil mapping. These are the Soil Survey Geographic (SSURGO) database, the State Soil Geographic (STATSGO) database, and the National Soil Geographic (NATSGO) database. Common to each soil geographic (spatial) database is the linkage to a soil interpretations (attribute) record database which gives the proportionate extent of the component soils and their properties for each map unit.

With these databases, users can store, retrieve, analyze, and display soil data in a highly efficient manner, as well as integrate the data with other spatially referenced resource and demographic data in a geographic information system.

The primary source of detailed soil data is the National Cooperative Soil Survey's (NCSS) published soil survey. The NRCS and other Federal and state agencies are turning to computer technology and geographic information systems to conduct resource planning, management, and decision-making activities. This has increased the demand for reliable and usable soil data in digital format. Soil data are a basic data layer used with other digital resource data layers.

The SSURGO database must meet accuracy and format standards to be compatible and usable with other digital map layers. The use of digitizing standards and specifications for the digital soil survey map component of the SSURGO database will eliminate duplication and waste in developing soil databases, maintain the integrity and accuracy of the original soil survey, expand the use of soil survey information, and facilitate the transfer of soil data between different geographic information systems. The SSURGO database has the following characteristics:

- Used primarily for farm and ranch conservation planning, range and timber management, and county, township, and watershed resource planning and management.
- Consists of georeferenced digital spatial data, attribute data, and metadata.
- Mapped at scales ranging from 1:12,000 to 1:63,360.
- Archived in 3.75- or 7.5-minute topographic quadrangle units.
- Digitized by raster scanning or line-segment (vector) methods in accordance with NRCS established digitizing standards and specifications.
- Spatial data stored in a vector data structure.
- Mapped on orthophotoquads or 7.5-minute topoquads or compiled onto one of these bases before digitizing.
- Defined in a memorandum of understanding.
- Approved and signed final classification and a correlation document and amendments.
- Captured or converted to a coordinate reference system of Universal Transverse Mercator, meter map units.

NRCS-New Mexico has digitized five soil survey areas: Cibola, Sandoval, Rio Arriba, Chaves, South Part, and Doña Ana, parts of Luna, Union, and Colfax counties, and Chaves, North Part. We are currently in the process of obtaining SSURGO certification for Cibola and Doña Ana Soil Survey areas.

By Jessie Rossbach, NMGIC Board of Directors

Middle Rio Grande Basin Study

The U. S. Geological Survey, at the request of Senator Pete Domenici, is undertaking a project to study ground water resources in the area between Cochiti Dam and San Acacia. Known as the Middle Rio Grande Basin Project, the study will utilize a wide range of datasets in digital and analog formats. USGS will use technical resources from all three of its divisions: Water Resources, Geologic, and National Mapping. To facilitate this study, base cartographic data are needed to build a database for determining recharge to the aquifer, mapping surficial geology, and characterizing the land surface. The Middle Rio Grande database shall include current and historical aerial photography, socioeconomic and demographic data, infrastructure data, land cover, soils, hydrology, and geology, to name a few. Black-and-white, 1:40,000-scale National Aerial Photography Program (NAPP) quarter quad aerial photography will be flown and used for creating Digital Orthophoto Quads (DOQ). USGS intends to utilize local source data in development, or already developed, by entities in the area in order to minimize duplication of existing datasets.

As a fact and data finding mission, representatives from the National Mapping Division, USGS in Denver visited with a number of state, city, county, and federal offices in Albuquerque and Santa Fe to describe the project and to describe the project and to identify data holders and developers. Additional visits are

(Continued on page 6)

New Geo-Spatial Data for NM

In April, three new data sets will be available through RGIS. Statewide coverage of 2-arc-second DEMs has been made available by the USDI, Bureau of Land Management and USDA, Forest Service. BLM, Forest Service, and USGS co-funded the production of 2-arc-second (50 meter) DEMs for New Mexico. The data are available as 15' blocks (512 in all) which are very convenient for regional projects covering large amounts of surface area.

Statewide coverage of surface ownership and the Public Land Survey System (PLSS) will also be available. The surface ownership and PLSS have been merged into ten separate statewide thematic layers. Each thematic layer of information depicts a different category of surface ownership. Separate categories of surface ownership are provided for BLM, Forest Service, Park Service, USDI Fish and Wildlife Service, Bureau of Reclamation, Department of Defense (military reservation), Indian reservations and tribal lands, state lands, and state parks and recreation areas.

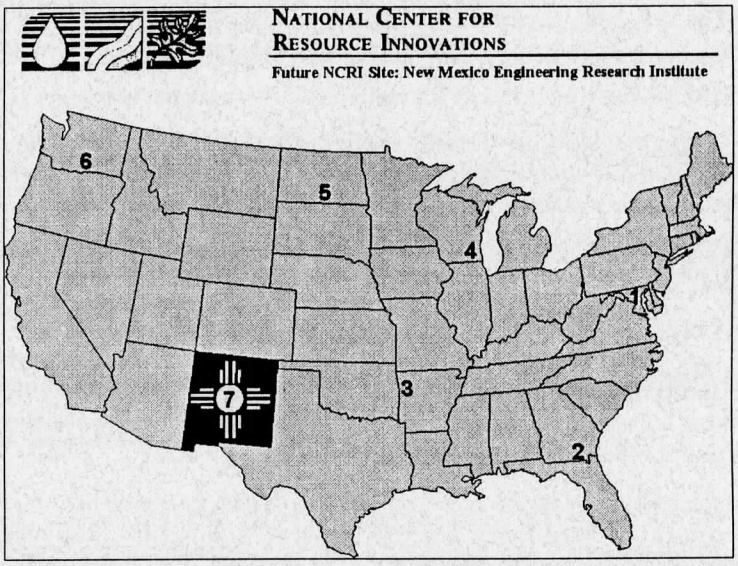
The surface ownership categories and PLSS are identical to the information used to produce the 1:500,000/1:1,000,000 Surface Management Responsibility Map published by BLM on December 1994.

By Bob Bewley
NMGIC Board of Directors

NMERI's GIS Group Designated as Future Site of National Center for Resource Innovation

Six years ago, concerned about the need to support public and private decision makers in primarily rural areas, the United States Senate Agriculture Appropriations Committee established the National Center for Resource Innovations (NCRI). NCRI's mission is to provide collaborative and innovative transfer of geographic information systems (GIS) and related technologies to support public policy development and decision making. Core funding has been provided through the Cooperative State Research, Education and Extension Service of the U.S. Department of Agriculture. Until recently, NCRI has been a national consortium of six members who include:

NCRI-Chesapeake - Rosslyn, VA
NCRI-Great Lakes - University of Wisconsin - Madison, WI
NCRI-North Central - University of North Dakota - Grand Forks, ND
NCRI-North West - Central Washington University - Ellensburg, WA
NCRI-South East - South Georgia Regional Development Center - Valdosta, GA
NCRI-South West - University of Arkansas - Fayetteville, AR



Working through the Dean's Office of the School of Engineering, in concert with UNM's Office of Research, New Mexico's Congressional Delegation, and the Board of Directors of the National Center for Resource Innovations (NCRI), the New Mexico Engineering Research Institute's (NMERI) Geographic Information Systems Group has successfully completed its bid to become the future site of the Seventh National Center for Resource Innovations. The use of spatially based information management technologies for decision support of all kinds, is a rapidly unfolding chapter of the information age. This applies to everything from socio-economic related subjects such as transportation planning or rural healthcare provision to watershed management

With increasing emphasis being placed on enhanced decision support for sound community planning and sustainability of natural resources, NMERI GIS personnel have worked with U.S. Department of Agriculture and other clients to bring technologies including Geographic Information Systems, Global Positioning Systems, Internet connectivity, and World Wide Web wide area network capabilities, to bear on issues which require rapid information turnaround for real world management decisions. Activities planned for 1996 will include the use of integrated decision support tools for watershed and water resource management, adaptations of Precision Farming technology, Web Page development and support, and USDA related outreach projects. In conjunction with these activities, NMERI personnel will also begin teaching certified Introduction to ArcView courses in late Spring. NMERI's NCRI technical integration efforts and certified Introduction to ArcView Training will be conducted by Glenn Olson, NMERI's representative to NCRI's Technical Program Development Team.

(Continued on page 7)

New National GPS Policy Approved by President Clinton

On March 29, 1996, the White House released a comprehensive policy, approved by President Clinton, regarding the management and use of the Global Positioning System (GPS) and associated government augmentation systems. This policy addresses national and international interests in civil, commercial, military, and scientific areas.

The essential goal of the policy is to support economic competitiveness and productivity while protecting our national security and foreign policy interests. Under the policy, GPS will be operated and managed subject to the following set of guidelines.

- The Standard Positioning Service (SPS) will be provided worldwide with no direct user fees.
- The use of Selective Availability (SA), that purposefully degrades autonomous positioning accuracy, will be terminated within a decade.
- GPS and its augmentations will remain responsive to National Command Authorities.
- The U.S. will cooperate with other governments to ensure an appropriate balance between the requirements of foreign users and international security issues.
- GPS will be supported as a standard for international use.
- Whenever possible, commercially available GPS-related products and services will be utilized and commercial GPS activities will be precluded only when national security or public safety issues arise.
- GPS will be managed by a permanent, interagency GPS Executive Board, jointly chaired by the Departments of Defense and Transportation.

The policy statement also addresses the roles and responsibilities of the Departments of Defense, Transportation, and State. It says that beginning in 2000, the President will make an annual determination on the continued use of Selective Availability based on recommendations provided by various departments. So, we could conceivably see the termination of selective availability within four years.

This information is based on a fact sheet provided by the White House Office of Science and Technology Policy/National Security Council, "U.S. Global Positioning System Policy," dated March 29, 1996. For more information, contact Bill Stone, GPS Committee Chairman, at 505 768-3606.

Free Half-Day Seminars Offered

Global Systems Modeling and PCI Remote Sensing Corporation will conduct two free half-day seminars on May 2 at the Holiday Inn Pyramid, 5151 San Francisco Road NE, in Albuquerque. The identical sessions will cover air photo orthorectification, digital image processing, and map production using the latest PCI tools. To make reservations to attend the seminars, contact: Open House Director (telephone: 703 243-3700) (fax: 703 243-3705) and indicate which sessions you would like to attend:

Session I 9:00 am to 12:00 noon

Session II 1:00 pm to 4:00 pm

If faxing your reservations, please give your name, organization, address, telephone and fax number, and number of people attending.

GPS Committee Members Wanted

NMGIC's Global Position System (GPS) Committee was established several years ago to serve as a forum for those interested in GPS technology. For several years, a primary focus of the group was the establishment of the New Mexico GPS Reference Network. That goal has been reached and the committee's activity has become somewhat diminished during the last couple of years. With the ever increasing number of GPS users and applications, it is difficult to keep abreast with all that is happening in this arena. The committee can help to facilitate communications between users and to serve as a mechanism for dissemination of a variety of information about the technology. If you are interested in participating in the GPS Committee, please contact Bill Stone, Chairman of the GPS Committee, at 505 768-3606

Middle Rio *(Continued from page 4)*

anticipated in the near future. Data developed, incorporated, and enhanced by this project will be made available for users through the State of New Mexico as well as normal USGS data distribution outlets. Base cartographic data collection will follow Federal Geographic Data Committee and the National Geospatial Data Clearinghouse guidelines. The entire project is planned as a five-year effort. For more information on the project, contact: Jim Bartolino, USGS-WRD, 4501 Indian School Road NE, Suite 200, Albuquerque, NM 87110,
telephone: 505 262-5336,
fax: 505 262-5398,
email: jrbartol@usgs.gov

Mount McKinley, Cheever Peak, and the Executive Committee Range *(Continued from page 1)*

No, the impulse to commemorate seems to be the province of peoples with long traditions of written records and names on maps, peoples with a strong sense of posterity. And there's the rub: fame is fleeting, but names can endure for centuries. I recall a New Hampshire village named Whitefield, for an English evangelist immensely popular in the 18th century--but unknown today.

And anyone who has sat through the deliberations of the USBGN knows commemorative names cause more conflicts and controversies than any other type of name. That's why the USBGN has special policies regarding them:

- the person honored must have had a long-standing association with the area;
- the person must have made a significant contribution to the area;
- the person must have been deceased at least five years (until last March the waiting period was but one year, but the USBGN decided to impose a more stringent test of posterity).

So we'll have to wait five years to see if Fray Angelico Chaves will have a feature named for him.

And in the meantime we can ponder the appropriateness of such an honor anyway. Fray Angelico was an author--aren't his books the monument he would have wished to endure? And why name a natural feature for a scholar such as him? Why not a room in a library, or a library, or a church sanctuary?

Besides, I feel it's important to leave certain out-of-the-way, hitherto unnoticed, gem-in-the-rough features unnamed so that they'll be available when the time comes to honor people for whom they truly are appropriate--like me.

Note: The opinions expressed above are Bob's alone, and do not necessarily reflect the views of the GNC.

By Bob Julyan, Chair, Geographic Names Committee

Have You Renewed Your NMGIC Membership?

NMERI's GIS Group to Become 7th National Center for Resource Innovations *(Continued from page 5)*

The process to become the next member of the NCRI consortium has taken over a year and has included correspondence and information exchange with all of the NCRI Board and Technical Committee Members as well as a formal presentation to the NCRI Board of Directors, made in November of 1995. Cooperative support for NCRI has also been expressed by the Alliance for Transportation Research, Sandia National Laboratories, and various federal and state agencies.

Fortunately, by way of our technical credentials, exceptional geographic location for expansion of NCRI's mission interests into the western United States, and the strong show of support from our congressional delegates, we have secured UNM and New Mexico as the future regional representative of NCRI. The NCRI Center will be housed at 801 University SE in the heart of the University of New Mexico's new Science and Technology Park located in Albuquerque,

NMERI GIS personnel would like to thank all of our supporters for what we hope will not only be an opportunity for fruitful collaboration between UNM departments but also between UNM, New Mexico State University, and other users of emerging technologies within our region. For more information on NMERI's use of GIS and related technologies or NCRI, please contact John Peterson at 505 272-7295 (jpeterso@unm.edu) or Glenn Olson at 505 272-7296 (golson@unm.edu).

By John Peterson, NMGIC Vice President

New Mexico Geographic Information Council Inc.

SPRING MEETING

MAY 3, 1996

Theme: Transboundary Resources GIS

This Spring's NMGIC meeting will focus on New Mexico's border region with Mexico. Through the Transboundary Resources Inventory Project (TRIP), New Mexico's state and local authorities are collaborating with counterparts in Arizona, California, and Texas to promote a border GIS on the U.S. side, and to stimulate a bi-national collaboration with the six states on Mexico's side (Baja California Norte, Sonora, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas). The development of this GIS is embedded in NAFTA requirements for environmental assessments along the border, specifically with regard to human health, infrastructure development, natural resource assessments, law enforcement, and related issues. Presidents Clinton and Zedillo have signed an agreement to conduct a joint survey of transboundary resources along the U.S./Mexico border. Several bi-national workshops have taken place in San Diego, Tucson, and Reynosa focused on inventorying existing datasets and identifying data gaps and future data needs. A fourth workshop will be held in Ciudad Juarez on May 14th. The Program features speakers from both sides of the border.

An overview of TRIP will be given by Dr. Charles Groat, UTEP. Dr. Diego Fabian Lozano-Garcia will give a presentation on GIS activities in Mexico. Border projects in New Mexico will be described by Robert Czerniak, Bobby Creel, and David Henkle. The NMGIC Board of Directors feel that the Council's meeting on May 3 is an opportune time to acquaint its members with the TRIP initiative. **Please put May 3 on your calendar...see you there!**

PLACE: BDM Corporation, Randolph Building, 1801 Randolph Road (see Map)

Note: BDM is a secure facility. NMGIC attendees need to check in at the reception desk before proceeding to the conference center, downstairs and to the right. NMGIC registration will be downstairs. This is a lovely facility for our meeting, but access is restricted to the exhibit area and auditorium. Smoking is permitted outside the building. Parking is spacious and free on the west side of the building.

LUNCH: Lunch is no-host. There is a nice cafeteria operated by Christy's in the complex. There are several other lunch spots in the vicinity as indicated on the map.

AGENDA:

7:00-8:00	Exhibits set-up
8:00-9:00	Registration, Coffee, Exhibits
9:00-9:45	NMGIC Business Meeting (Treasurer's Report, Committee Reports, Award Presentation)
9:45-10:15	USGS Presentation (Lee Aggers)--Focus will be on *Middle Rio Grande Water Basin Initiative*, and the *Transboundary NAPP Initiative*
10:15-10:45	Break/Exhibits
10:45-11:00	TRIP Overview (Dr. Charles Groat, UTEP)
11:00-12:00	GIS in Mexico (Dr. Diego Fabian Lozano-Garcia) Instituto Tecnologico de Monterrey
2:00-1:30	Lunch/Exhibits
1:30-2:30	Border GIS Projects in New Mexico Robert Czerniak, Geography Department, NMSU

Bobby Creel, Water Resources Research Institute, NMSU

Dr. Creel is Assistant Director , New Mexico Water Resources Research Institute, NMSU. His Ph.D. degree is in Resource Economics from UNM. He has research experience in water resources planning and natural resources development in addition to his many years of research and service to WRRI. He also serves as Associate Professor of Agricultural Economics and Agricultural Business at NMSU.

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NMGIC Spring Meeting (Continued from page 8)

Trans-International Boundary Aquifers in the New Mexico Portion of the El Paso/Juarez Region. This project was initiated in October 1994 and was funded by the US EPA, Texas Water Development Board, and the New Mexico Water Resources Research Institute. The objective of the study was to identify trans-international boundary aquifers, quantify the natural and induced chemical quality of each aquifer, characterize and quantify the available water supply of each aquifer, determine the direction of ground water flow and its relationship to the flow of the Rio Grande, and develop GIS coverages of the information for the region. The process involved compiling existing information and integrating into database; characterizing each aquifer as to lateral and vertical extent, saturation thickness, volume of water in storage, direction of flow, pumpage, connection with the river, identifying potential recharge zones, characterization of water quality, and assessment of potential for contamination. A number of products of the project will be presented.

David Henkle, School of Architecture and Planning, UNM

Dr. Henkle is Assistant Professor of Planning in the School of Architecture and Planning at UNM. His Ph.D. in Planning is from Cornell University. He also has an Industrial Development Certificate from University of Oklahoma and an International Management Certificate from the American Graduate School in Glendale, AZ. His interests are in natural resources development, bio-regional design and land suitability assessment and farming systems analysis.

Inventorying Bi-national Natural Resources. Because there is no methodical, scientific study of the natural resources in the area surrounding Columbus, New Mexico and Palomas, Chihuahua, projecting the likely impacts of proposed development is extremely difficult. Yet, the area continues to grow faster than most other parts of the two neighboring states, bringing in people and businesses which place severe demands upon already taxed infrastructure and affect soils, vegetation, and traditional land uses. The growth of Palomas alone since 1990 is locally estimated at 45%.

Working in cooperation with Chihuahua state planning officials, local ranchers, farmers, and village residents, a twelve member field research team has been constructing a GIS to examine the location of types of soils, vegetation complexes, water source points, and wildlife groups. The results will inform local residents further about their surroundings, enable university and government officials on both sides of the border to model the impact of proposed developments, and provide local governments with more information with which to make planning decisions.

A parallel initiative is being carried on with teachers in the Columbus and Palomas elementary schools, so that the children can learn about their immediate surroundings as they study the fundamentals of natural science.

Chip Groat, Center for Environmental Resource Management, UTEP

Chip Groat is Director of the Center for Environmental Resource Management at the University of Texas at El Paso. He received his Ph.D. in geology from the University of Texas at Austin and has served as State Geologist of Louisiana, Executive Director of the American Geological Institute, and Executive Director of the Center for Coastal, Energy, and Environmental Resources at Louisiana State University. He is a member of the Board on Earth Sciences and Resources of the National Research Council. He spent thirteen years working on resource and environmental programs in the Southwest prior to his move to Louisiana.

Transboundary Resource Inventory Project (TRIP): In Quest of a Binational GIS Network. TRIP is a coalition of U.S. border states, universities, non-governmental organizations, and federal agencies seeking to build a network of GIS-compatible databases useful in describing and managing resources and environmental issues shared across the U.S./Mexico border. Through a series of GIS pilot projects and workshops, and through the development of binational efforts to develop cooperation on priority topics (aerial photography, ground water and geology, airshed models, marine resources, soil and land-use classifications, cultural and historic sites, environmental health, and state/local capacity building), TRIP seeks to foster the development and exchange of information relevant to key border issues. TRIP is also working with organizations in Mexico to foster a parallel and cooperating organization there.

1996 Corporate Sponsors

AUTOMETRIC INCORPORATED
2500 YALE BOULEVARD SE
ALBUQUERQUE, NEW MEXICO 87106
505 277-8202

From its founding in 1957 as a subsidiary of Paramount Pictures, Autometric, Inc., has become a market leader in providing information systems and services for reconnaissance and remote sensor imagery-related areas. With the creation of Vision International, Autometric, Inc., has become a leading international supplier of photogrammetric and geographic information system (GIS) software for the commercial sector. Today, as an employee-owned corporation, Autometric, Inc., draws upon a wealth of professional talent and technological resources.

The company offers a full range of commercial and custom products and information services in six related areas:

- Dynamic data visualization, graphics, and animation
- Advanced modeling and simulation systems
- Remote sensor image processing, interpretation, and analysis
- Photogrammetric and spatial data systems
- Decision support systems
- System engineering, development, and integration

With headquarters in Alexandria, Virginia, office across the nation, and distribution worldwide, Autometric, Inc., has enjoyed steady business growth and increasing financial success. The company has the unique position and credentials to design, develop, integrate, and deliver solutions that can fully satisfy our customers' growing needs for geo-based information.

Autometric, Inc., develops mission-sensitive systems capable of taking complex data from satellites, aircraft, and other intelligence sources. We then put it all together in away that visually portrays and accurately conveys a complete problem set—on land, on sea, in the air, and in space.

Our geo-data imagery and spatial technology can be integrated with financial, marketing, research, and environmental data as part of a total decision support system. Autometric, Inc., imaging technology transforms static data sets into integrated, effective presentations that impart immediate understanding.

Autometric's full range of solutions allows you to bring the power and performance of advanced imaging technology to users at every level, from desktop PCs to high-end workstations. We offer user-friendly applications tools that enable you to edit, revise, access, manipulate, and display your data with a high degree of accuracy. We provide systems software tailored specifically to meet your needs. In addition, we bring advanced imagery capabilities to other GIS providers. Staying abreast of the requirements of these leading edge commercial companies provides vital guidance in our development of new technology.

With skills and services available to you across-the-board (including those of systems engineers, software developers, integrators, image scientists, operations analysts, trainers, artists, animators, and documentation specialists), Autometric, Inc., delivers the complete benefits of advanced imaging technology.

(More Corporate Sponsors continued on page 11)

NMGIC thanks all the Corporate Sponsors for their 1996 support

Bohannan-Huston, Inc.
Courtyard I
7500 Jefferson Street NE
Albuquerque, New Mexico 87109
505 823-1000

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 - Santa Fe and Las Cruces. In response to the growing need for Geographic Information among muncipalities 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.

Our Spatial Data Technologies Group provides the following services, plus many others, throughout the United States and Western Europe:

- Large and small LIS/GIS and facility databases
- Digital orthophotography
- Digital mosaicking
- Digital terrain data
- Engineering site and corridor design data
- Graphical and attribute data translations
- 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 interactive 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 the inclusion of Diginetics, Spatial Data Technologies also has the advantage of 18 years of focussed computer applications experience in a production environment. This extensive experience led to the development of a comprehensive interactive graphics system, called DIGIMAP, capable of handling very large continous and contiguous geographic and facilities data bases.

Diginetics is also a registered Independent Software Developer with Bentley Systems, Inc. for MDLTM applications and with Intergraph Corporation for its civil products. Diginetics develops customized spatial data software for a variety of in-house, private and government clients, enabling the rapid prototyping and development of software applications, as needed.

Koogle & Pouls Engineering
Photogrammetric Engineers and Surveyors
8338A Comanche NE
Albuquerque, New Mexico 87110
505 294-5051

Since our founding in 1964, Koogle & Pouls has obtained extensive experience in geodetic surveys; site surveys; utility surveys; black-and-white, color, and color infrared aerial photography; reprographics; analytic aerotriangulation; conventional orthophoto prepreation; black-and-white and color infrared digital orthophotos; photogrammetric mapping to develop accurate planimetric and topographic databases; development of topographic data in the form of digital terrain models; geographic and attribute database construction, and computer graphic presentations. Successfully completed pojects cover a wide geographic area, from Washington State through California, to the City of Chihuahua, Republic of Mexico thence to

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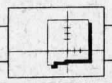

Corporate Sponsors *(Continued from page 11)*

Arkansas and Wisconsin. Our staff includes professional engineers, professional surveyors, and certified photogrammetrists whose many years of experience include projects located from the Alaskan North Slope to the Republic of Zaire. The experience of senior staff members covers from 20 to 40 years of diverse assignments covering the entire spectrum of photogrammetric engineering and allied control surveys. Since our founding, we have utilized a *Total Quality Management* approach to projects, where every staff member accepts the responsibility, within the framework of an overall program, for the accuracy of their work. Our clients receive support from experienced personnal, knowledgeable in the utilization of the advanced instrumentation available to them. Key personnel work closely with clients to ensure that they benefit from the reservoir of available photogrammetric experience and to ensure that each project is planned in the most cost effective manner to obtain the data and accuracies they require for present and future needs.

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 HE12 rectifying enlarger; Kern DSR-14/300 analytical stereoplotters; Intergraph 6040 and 6440 Interpro workstations and Precision Image 636 color electrostatic plotter.

Global Systems Modeling Limited
Post Office Box 36221
Tucson, Arizona 85740
520 575-1771

Global Systems Modeling Limited (GSM) was incorporated in the State of Arizona in January 1988. Our primary goal is to solve client problems by providing Geographic Information System (GIS) and Relational Data Base Management System (RDBMS) application solutions. We have additional expertise in remote sensing and in document image management systems.

GSM is a consulting firm. Our goal is to solve our client's problems in the most efficient and cost-effective manner, usually, but not always, involving the use of computers. In the GIS area we offer:

- User needs assessments
- Custom software programming
- Spatial feature representation and capture
- Data conversion, automation, and acquisition
- Image processing
- Data base design
- Pilot projects
- System integration and training

Our work with RDMBS applications has been extremely varied. GSM has created a number of data base applications for clients in government (at the federal, state, and local levels), Native American nations, and in the private sector, including consulting, engineering, and planning firms.

Global Systems Modeling has been involved in a wide range of project work over the last seven years. A brief summary of some of our current projects is listed here. Emphasis is given to our work with RDBMS and GIS. In the majority of our projects, we are responsible for both the analysis of client/application needs and the actual programming or product implementation.

Bernalillo County (New Mexico) Public Works Department - GIS Services Plan: GSM is processing the NAPP series of aerial photographs of the County to closely match the USGS Digital Orthoquad Quarter (DOQQ) digital imagery. This includes scanning the original photos and then using near-survey quality ground control to orthorectify the imagery for all

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Corporate Sponsors (Continued from page 12)

areas lacking USGS DOQQ coverage. Existing USGS DOQQ files are reprojected (into State Plane coordinates) and mosaicked with GSM processed photos to produce a seamless, county-wide coverage. The delivered products are quarter-township size tiled digital image files. The entire process must meet or exceed the positional quality of the USGS imagery. Road centerlines are extracted from the finished image. The final images are also used in assessing the accuracy of other GIS data layers (parcels, easements, and subdivisions) extracted from existing mylar source maps. GSM established the raster-to-vector conversion procedures used in creating these GIS layers. GSM also contributed to the data base design and attribute value assignments used for the project.

Navajo Nation - USGS Quad Sheet Data Conversion: Conversion of paper USGS Quadrangle Maps (7.5 minute series) into ARC/INFO-format coverages involves color scanning of the source maps, color processing, conversion and georeferencing of the resultant images, and raster-to-vector conversion. After conversion of ARC/INFO format, features are edge-matched across map boundaries. Contour (ipsography), hydrography, and transportation features are being converted. The resultant product will allow creation of detailed Digital Terrain Models. Only a portion of the Nation is being done; the area covered is larger than Connecticut and Rhode Island combined.

Other clients include:

- Arizona State University
- Aviation Systems Associates, California
- City of Benson, Arizona
- City of Santa Fe, New Mexico
- Cochise County, Arizona
- Competitive Engineering, Arizona
- The Dorchester Group, Arizona
- Durango County, Colorado
- JHK and Associates, Arizona
- Mental Health Resources, Arizona
- Mesa County, Colorado
- Park County, Colorado
- The Planning Center, Arizona
- Santa Fe County, New Mexico
- State of Arizona, Department of Agriculture
- State of Arizona, Department of Game and Fish
- State of Arizona, Department of Weights and Measures
- State of Oregon, Land Department
- Sulpher Springs Valley Electric Cooperative
- Southwestern Field Biologists, Arizona
- Town of Oro Valley, Arizona
- Town of Prescott Valley, Arizona
- University of Arizona
- U. S. Fish and Wildlife Service

For further information, please contact Curtis White, President, or Tom McConnell, Director of Client Services, at the above address or phone number.

Holman's, Inc.
6201 Jefferson Street NE
Albuquerque, NM 87109
505 343-0007

Holman's has undergone a world of changes since it opened in Albuquerque in 1955. Now, in its fourth decade, Holman's remains locally owned and is still a visionary leader, providing advanced technology and services for science, engineering, and business. Holman's sells computers, printers, plotters, software, global positioning systems, surveying instruments and supplies, and professional publications and maps. Holman's is an authorized dealer for Hewlett-Packard, Apple, Compaq, Sokkia, Autodesk, Softdesk, and many more. Staffing levels have expanded to over 48 full-time, knowledgeable employees. A new facility was recently built to better serve our customers' needs. The new Holman's is positioned for better service, competitive pricing, quality, and excellent delivery.

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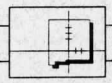

Corporate Sponsors (Continued from page 13)

Clint Sherrill & Associates
Land Surveying, GPS/GIS and Scanning Services
730 San Mateo SE
Albuquerque, NM 87108
505 256-7364

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 land surveying services. At present, the expanding staff possesses capabilities in a wider variety of related fields.

Survey Activities - The company has 22 years of experience in all phases of surveying that includes topographic surveys, photogrammetric mapping support, boundary surveys, construction layout, and engineering surveys. It also has comprehensive experience in right-of-way mapping necessary to compile and generate maps for easement and right-of-way acquisitions acceptable to public agencies and various private utility companies.

GPS Activities - Clint Sherrill & Associates has extensive experience in aerial mapping and has performed numerous projects wherein the responsibilities were to provide GPS control monumentation as well as provide ground panels for aerial photography. For large-scale projects, the company has its own GPS receivers and is proficient in establishing geodetic control networks to use as a basis for cadastral and route surveys. The project team is a cost-effective combination of experienced professional surveyors, field personnel, and office GIS/survey technicians. Individually, they offer a wealth of expertise and the support necessary to make the firm successful, and together bring a team of professionals that has demonstrated its proficiency in managing large and small survey projects.

The principal objective is to provide clients with responsive services of the highest professional standards and technical excellence. To accomplish this goal, the staff possesses individual expertise, as well as the technical skills and abilities required for the successful completion of an assigned project. The company combines this advantage with the latest in automated design and drafting technology and its state-of-the-art electronic survey and data collection system.

GIS Activities - Clint Sherrill & Associates is currently working on a multi-phase contract to develop GIS base coverages for Bernalillo County Public Works Department. These coverages consist of road centerlines, parcels, subdivisions, easements, geodetic control, project control, color aerial photo panel point control, Bernalillo County Zone Atlas cells, and the relevant New Mexico USGS quads for Bernalillo County. Additionally, color orthophoto images have been developed that are referenced, aligned, and sized to fit one-quarter township areas. The project is managed by the firm's GIS manager who has over seven years of experience in GIS.

Scaning Activities - Clint Sherrill & Associates has the capability to scan and store both small and large size documents. It is recognized that paper management is a major problem for many clients. The firm is currently developing a process to scan, store, and retrieve this information digitally. Ultimately, the scanned documents can be linked to GIS databases, providing a one-stop shop to meet clients' survey, GPS, GIS, and scanning needs.

THE MAP LEGEND

Editors: Stan Morain
Jeanette Albany
Amy Budge
Bob Julyan

The Map Legend is published quarterly 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. The mention 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:

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% Amy Budge

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THE MAP LEGEND

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

Calendar

NMGIC Spring Meeting, Albuquerque, New Mexico, May 3, 1996. Contact Bob Bewley, Bureau of Land Management, P. O. Box 27115, Santa Fe, NM 87502. Telephone: 505 438-7481. Fax: 505 438-7843.

Second International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Fort Collins, Colorado, May 21-23, 1996. Contact: H. Todd Mowrer, Spatial Accuracy Symposium, Rocky Mountain Forestry and Range Experiment Station, 240 W. Prospect Road, Fort Collins, CO 80526-2089. Telephone: 970-498-1100. Fax: 970-498-1010.

International Geoscience and Remote Sensing Symposium, Lincoln, Nebraska, May 27-31, 1996. Contact: IEEE Geoscience and Remote Sensing Society, 2610 Lakeway Drive, Seabrook, TX 77586. Telephone: 713-291-9222. Fax: 713-291-9224. E-mail stein@harc.edu

Leica Helava Digital Photogrammetry Systems Workshop, Denver, Colorado, June 2-7, 1996 [repeated July 19-21, October 23-25]. Contact: Roger Pacey, Leica Inc., 2 Inverness Drive East #106, Englewood, CO 80112. Telephone: 800-475-3422. Fax: 303-799-4809.

Sixth International GPS/GIS Conference, Billings, Montana, June 22-29, 1996. Contact: Carol Fisher, GeoResearch, 7913 MacArthur Boulevard, P.O. Box 220, Cabin John, MD 20818. Telephone: 406-248-6771. Fax: 406-248-6770.

Second International Airborne Remote Sensing Conference and Exhibition, San Francisco, California, June 24-27, 1996. Contact: Robert Rogers, Environmental Research Institute of Michigan, P.O. Box 134001, Ann Arbor, MI 48113-4001. Telephone: 313 994-1200, ext. 3234. Fax: 313 994-5123. Internet: rrogers@erim.org

URISA '96, Salt Lake City, Utah, July 27-August 1, 1996. Contact: URISA, 900 Second Street NE, Suite 304, Washington, DC 20002. Telephone: 202 289-1685. Fax: 202 842-1850.

Pecora 13 Symposium, "Human Interactions with the Environment: Perspectives from Space," Sioux Falls, South Dakota, August 20-22, 1996. Contact: Internet: http://edcwww.cr.usgs.gov/pecora13.html Telephone: 605 594-6551. Fax: 605 594-6083.

GIS/LIS '96 Annual Conference and Exhibition, Denver, Colorado, November 19-21, 1996. Contact: GIS/LIS '96, 5410 Grovsenor Lane, Suite 100, Bethesda, MD 20814-2122. Telephone: 310 493-0200. Fax: 301 493-8245.