THE MAP LEGEND

# U.S.-Mexico Border Geographic Information System

The United States-Mexico border region, including all the states along the U.S.-Mexico border, is complex and diverse. It is one of the fastest growing regions in both countries. Along with the positive aspects of growth, a variety of negative effects including water quality degradation, outbreaks of contagious diseases, and increased traffic congestion, have been identified. An important piece of legislation for the border region is the North American Free Trade Agreement (NAFTA). The passage of the NAFTA has enhanced different types of trade across the border. If NAFTA can meet the promise of expanded economies, it may also exacerbate many of the negative effects of future growth.

In order to begin addressing the myriad border issues, one must have a comprehensive and unified vision of their geographic locations and magnitudes. Anyone who has tried to deal with binational spatial issues has experienced the daunting problem of bringing together dissimilar data sets from both sides of the border. In addition, there are few maps that view the region as a unit.

In 1993, New Mexico State University (NMSU), through its Department of Geography, developed a pilot electronic altas which demonstrated that U.S. and Mexican data could be brought together for the states of New Mexico and Chihuahua. The initial effort also showed, in an elementary way, that some of the problems mentioned above could be examined in a desktop geographic information system (GIS). Using GIS, a person could view the border region as an entity or choose to look at a portion of it. The pilot electronic atlas was constructed to present a variety of topics including: Environment–physiography, water, vegetation, surficial geology, soils, AVHRR satellite imagery; Socioeconomics–population, population change, employment; Infrastructure–highways, airports, railroads, major land use (agriculture and urban build-up); Political Entities–cities, municipios, counties. The socioeconomic, infrastructure, and political data were mapped for the entire states of Chihuahua and New Mexico, at the county level. Environmental data were mapped only for those U.S. counties and Mexican municipos adjacent to the border. In 1994 the border atlas was displayed at the University of Texas at Arlington's Central Library. It has also been presented at the Annual Meeting of the Water Resources Research Institute during Fall 1995.

In 1995 New Mexico State University's Department of Geography and the Border Research Institute obtained funding from the Southwest Center for Environmental Research and Policy (SCERP) to update and improve the quality of the Border GIS. SCERP is an environmental research consortium sponsored by EPA. It provides funding to institutions of higher education along the border in the U.S. and Mexico. SCERP institutions include: San Diego State University, University of Utah, University of Arizona, New Mexico State University, and University of Texas at El Paso.

With SCERP funding, NMSU will increase the number of topics being mapped. Some of the new topics will be diseases, land use, urban form, border crossings, traffic flows, and population projections. The original map topics will be updated and more detail will be added. The geographic coverage for the GIS will be expanded to include Otero County in New Mexico and El Paso and Hudspeth Counties in Texas. A new section will be added to the GIS that will focus on specific issues located directly on the border and that require large scale mapping. For example, a new map and associated database will identify the entire road system in southern Doña Ana County, El Paso, and Ciudad Juarez. There will also be a series of maps that describe the problems associated with the Santa Fe Intermodal Facility in El Paso. It provides a major railroad link to Ciudad Juarez. If funding allows, the GIS will be developed in Spanish and English. Currently, it is only available in English. The refined version of the GIS is scheduled to be available in September 1996. For more information about the GIS project, contact Dr. Robert J. Czerniak, Associate Professor, New Mexico State University, Department of Geography, Las Cruces, NM 88003; telephone 505 646-3509; or email rezernia@nmsu.edu

*By Robert Czerniak, NMSU*

## Inside This Issue

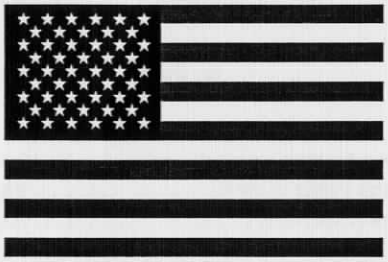
# From the President
## Amy Budge

This issue of *The Map Legend* has several articles focusing on projects and programs along the United States/Mexico border. Activity in the border area has increased in the past year as the region and its related issues have become more visible nationwide. Many projects are underway ranging from socioeconomic and environmental topics such as public health, to resource projects such as habitat studies for pronghorn antelope. Programs and projects are being designed to address many of the data needs along both sides of the border....the EPA Border XXI/Frontera XXI and the Transboundary Resource Inventory Project (TRIP) are two initiatives underway to identify and develop geospatial data for the border region. The geographic area included in the border area, known as the "worm," is illustrated on page 5.

Border XXI/Frontera XXI is a binational program focusing on identifying data needs for environmental applications along the border. A series of public forums was held during fall 1995 to gather input from residents in the area for determining which environmental issues and data are considered to be a high priority. This information, along with expertise of government agencies, will be used to formulate the program framework. Status of objectives within the framework will be announced in reports that are available for public comment. EPA has a toll free number that provides additional information on the program (800-334-0741).

TRIP is a binational project that was initiated by the Texas General Land Office to create a seamless body of data pertinent to resource management problems facing the border area. Participants in the project include the four US border states (California, Arizona, New Mexico and Texas) and six Mexican states (Baja, Sonora, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas). This project has attracted attention at the White House level; President Clinton and President Zedillo have signed an agreement to conduct a joint survey of transboundary resources along the U.S./Mexico border. USGS plans to acquire NAPP photography on both sides of the border within the "worm." The U.S. side will be flown during 1996; photography will be available in early 1997. USGS will use this photography to create digital orthophoto quads (DOQs) and is committed to compiling other digital data in the region (DLGs and DEMs). Recently, TRIP has established a Board of Directors and has nominated a General Secretary to oversee the activities of the project. The Board is comprised of representatives and their alternates from state government and academia. NMGIC has been nominated as one of the alternates to the non-government representatives on the Board. TRIP functions as a partnership with public and private representation. It does not receive funds, nor does it distribute funds, however it is a conduit for obtaining funding for proposals generated by its partners. The project is described in more detail on page 5.

Other programs and projects are underway in the border area. Some are being conducted by state agencies, others by universities, and yet others by private industry. An electronic atlas of data for the border was developed by the NMSU Geography Department. They are continuing to refine that database (see cover page). A project inventorying natural resources in the Columbus-Puerto Palomas area is in progress (page 3). The theme of our Spring Meeting on May 3, 1996 will focus on the border and geospatial data for resource management....so mark your calendars!



# GIS Committee Report

The principle focus of the NMGIC GIS Committee continues to be development of large-scale digital mapping standards and guidelines for the State of New Mexico. These standards and guidelines ultimately will be adopted as state policy. They will join the already established small-scale standards in providing guidance to the New Mexico GIS community with respect to the development of high-quality, consistent digital geospatial data sets.

The joint GISAC/NMGIC Standards Subcommittee was established in July 1995 and was given the charge of completing the large-scale standard by July 1996. The Subcommittee has been meeting regularly since its inception and has developed, and is elaborating upon, a draft outline of the standard. Information about the draft standard and the deliberations of the Subcommittee can be obtained by contacting either Erle Wright, Subcommittee Chairman (505 986-6350), or Bill Baillargeon, Subcommittee Secretary (505 827-2047).

## RGIS News

RGIS is now on the network. As of January 1996, the RGIS Home Page provides information on the program and metadata for coverages in the Clearinghouse. The home page address is: http://rgis.unm.edu. Dial in and take a look. In 1996 an on-line browse file and list server will be initiated.

Four training classes, two Avenue and two ArcView 2, are scheduled for January 30 to February 8 in Albuquerque. We expect more training classes to be required in the future. If you missed these classes, contact one of the RGIS team members or the Clearinghouse to put your name on the list for future classes.

RGIS is assisting the New Mexico Museum of Natural History to develop a model of the state's topography. Bill Baillargeon, GSD/ISD, is providing contour maps at scales needed by the Museum to develop the 33' by 40' outdoor model. The project is in the beginning stages, and Bill's maps will help determine the final vertical exaggeration to be used. The Museum's project involves high schools and students from throughout New Mexico. If you are interested or want to know more, contact Tish Morris (841-2882) at the Museum.

Questions regarding the RGIS Program should be directed to Mike Inglis at the Earth Data Analysis Center (EDAC). He can be reached at 505 277-3622 (voice), 505 277-3614 (fax), or edac@spock.unm.edu (email).

## Southwest Regional Spaceport Being Planned Near Truth or Consequences

In June this year, NASA will announce its selection(s) for a contractor to build a prototype of what is being called the successor to Space Shuttle. Bidders for the X-33 craft include Rockwell International, McDonnell Douglas, and Lockheed Martin. What is interesting from NMGIC members' perspective is that the New Mexico Spaceport Commission, working with the Department of Economic Development, Office of Commercial Space, will ask the State Legislature for funds beginning in July 1996 to begin infrastructure work related to the ground segment. A significant part of these requested funds is earmarked for surveying the boundary between Sierra and Doña Ana Counties and for associated land information on ownership. Other monies would be used for building bridges and improving roads into the selected site and for architectural drawings of the initial spaceport complex. Already, the State has invested $1M to conduct an Environmental Impact Statement (EIS) and has filed commercial license applications with the U. S. Department of Transportation and other agencies. Certainly some aspects of this endeavor suggest remote sensing, GIS, and GPS technologies as part of the planning effort.

Over the past year or so, the Spaceport Commission has been marketing the concept of a southwest regional spaceport with the three X-33 bidders to convince them that New Mexico is the best place to launch their vehicle. Whoever wins the bid must indicate to NASA their preferred launch site and business plan. Among the three bidders, Lockheed Martin plans to issue an RFP in January 1996 to assess its launch site options. New Mexico is a strong contender for a variety of reasons, not the least of which is that, at 4,000 feet elevation, we're that much closer to space than competitors in Florida and California. McDonnel Douglas is already using White Sands Missile Range to test its *Delta Clipper*, and has had a series of successful lift-offs and landings. Their design, like Lockheed Martin's, is for a vertical take-off, vertical landing machine, while Rockwell International is developing a vertical take-off, horizontal landing vehicle. All are designed to be reusable launch vehicles (RLVs) for quick turn-around, commercial applications. Those closely associated with the spaceport development effort are talking eventual annual revenues in the billion dollar plus category . . . quite an attractive addition to our already strong federal laboratory and computer chip industries.

If you are interested in becoming a member of the citizen's group in support of the Spaceport effort, you should contact Dr. Jack Burns, Task Force Chairman, Box 30001, Department 4500, Las Cruces, NM 88003, or call 505 646-4438. Annual Task Force membership is $50.

*By Stan Morain, Earth Data Analysis Center*

## An Inventory of Natural Resources for the New Mexico-Chihuahua Border Region

During the summer of 1995, a team of researchers from the Program of Community and Regional Planning at the University of New Mexico will be compiling an inventory of natural resources in the vicinity of the communities of Puerto Palomas, Chihuahua, and Columbus, New Mexico.

The area of the study is approximately 30 miles (48 km) in diameter, and it encompasses the aquifer which is the common source of water for the two villages. Both Puerto Palomas and Columbus face rapid growth and must plan for increasing services despite the fact that they have limited resources. The planning research team believes the best planning begins at the local level and that it must reflect the intentions of the residents of the communities who will participate directly in this research.

The team of researchers will examine soils, plants, animals, types of land uses, farming systems, and water sources. The team will use the information to interpret photographic images from satellites and airplanes, to produce maps for use by the villages, and to create a geographic

*(Continued on page 4)*

## New Geodetic Control Standards Under Development

The Federal Geodetic Control Subcommittee (FGCS) of the Federal Geographic Data Committee (FGDC) is in the process of developing new classification standards for geodetic control survey work. These new standards, along with their supporting specifications which are yet to be developed, will replace and supersede the existing document, *Standards and Specifications for Geodetic Control Surveys*, dated September 1984. The new standards, which will hopefully be available soon, introduce accuracy classifications (15 different "ranges") for horizontal coordinates, ellipsoid heights, and orthometric heights. They retain the existing breakdowns of first, second, and third orders for gravity accuracy standards. The accuracy classifications refer to numeric values at the 95% confidence level that define specific tolerances. These changes in classification methodology, compared with the existing standards, become necessary because of modern technologies and applications, notably the global positioning system and geographic information systems. Classifications will be described as both a "local" accuracy (describing how well a point's coordinates are determined relative to those of other directly connected points) and a "network" accuracy (describing how well a point's coordinates are determined relative to the geodetic datum).

Surveys that are to be included in the National Spatial Reference System (NSRS) must comply with the official standards. Additionally, it is desirable that all geodetic or precise engineering surveys follow these standards and be rigorously tied to NSRS. A forthcoming companion to these new standards, *General Specifications, Procedures, and Guidelines for Geodetic Control Networks*, will be published in the near future. This document will address procedural issues such as equipment and techniques required to attain certain levels of accuracy, as defined by the standards document. For more information, contact Bill Stone, National Geodetic Survey, 505 768-3606.

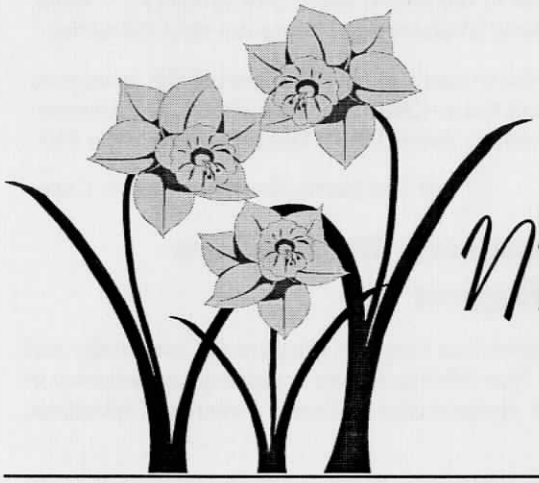
*By Bill Stone, GPS Committee Chairman*

## New Mexico Place Names Book to be Available Soon

By the time you read this (or soon after), *The Place Names of New Mexico* by longtime NMGIC member and chair of the NMGIC Geographic Names Committee, Bob Julyan, will be available in bookstores throughout the state.

The book is the result of eight years (it was supposed to be three) of research and writing, and during that time Bob traveled countless miles in all of New Mexico's 33 counties, talking to local historians, ranchers, postmasters and postmistresses, old-timers, and anyone else who might know the stories behind the area's names. The book includes approximately 7,000 names, more than double the number in the existing place name book for the state, and when released, it will become the standard reference for New Mexico's toponymy.

Bob recognizes that writing the story of a state's place names is an unending task, and already he's begun keeping a file of corrections and revisions to this book. "I'm grateful to NMGIC for all its support in my names activities over the years," said Bob, "and I'm especially grateful to the members of the Geographic Names Committee, who always remind me that geographic names not only are important, they also are fun."



NMGIC Spring Meeting
May 3, 1996

***An Inventory of Natural Resources...*** *(Continued from page 3)*

information system (GIS). The GIS and analysis will be provided to local communities, universities, and government agencies in New Mexico and Chihuahua. These tools can help the villages to identify the most suitable uses for their land area in cooperation with one another.

The Program of Community and Regional Planning has completed projects in this region since 1992, including a guide to physical and social resources, a manual for residents of colonias, and land use ordinances for the protection of public health and safety.

For further information, please contact: Dr. David Henkel, School of Architecture and Planning, 2414 Central Avenue SE, University of New Mexico, Albuquerque, NM 87131-1226. Telephone: 505 277-2903. Fax: 505 277-0076

# TRIP: Transboundary Resource Inventory Project

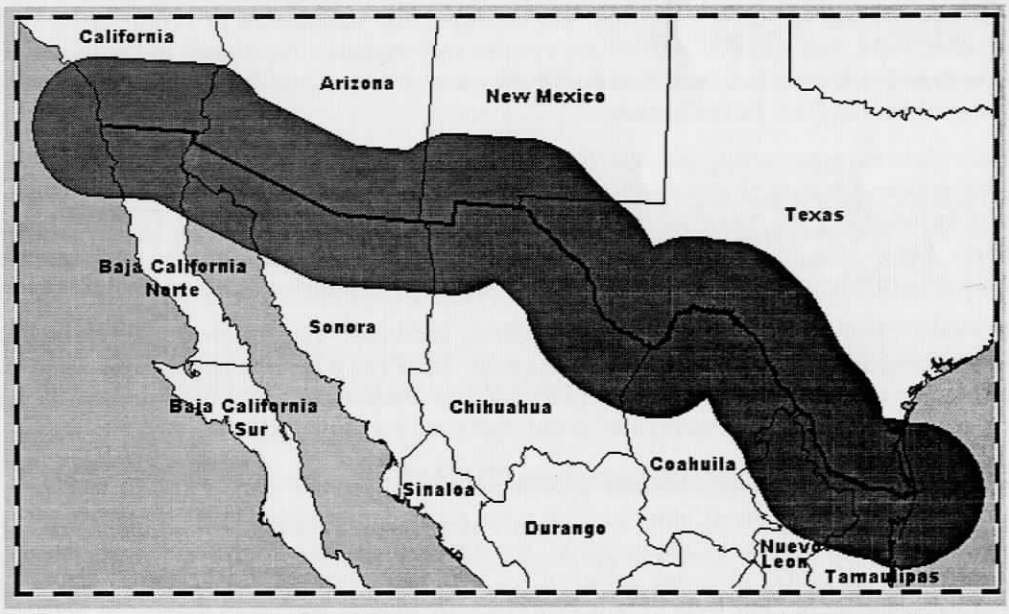
The Transboundary Resource Inventory Project (TRIP) is a regionally-based initiative which seeks to have the shared resources of the United States-Mexico border region measured, mapped, and made available through the Internet on a Geographic Information System (GIS). Special attention is paid to natural resources such as airsheds, aquifers, surface waters, hydrocarbons, ecosystems, and renewable energy resources. Aerial photography, a digitized base map, and a GIS which encompasses significant transboundary resources, ecosystems, and areas of intense cross-border interaction, pertain to public health, transportation, population movements, and economic activity.

The first objective of TRIP is to build a sustainable partnership between geographic information providers and users to meet the growing need of the public and private sectors for consistent, comprehensive information about the border area and its resources. The second objective is to encourage the United States and Mexico to create a consistent digital base map of both sides of the border for use in a binational GIS.

The border is experiencing dramatic population and economic growth, and current data and maps are insufficient to meet the needs for binational project planning and communication. Current maps and data sets relating to the border region are created and maintained by separate entities and use differing, often incompatible standards. TRIP is establishing a means for the exchange of information across state and international borders, to provide accurate and comprehensive data to resource managers, research analysts, and planners in business and government.

To meet its objectives, TRIP is working with experts in government and academic institutions to develop a standardized digital base map and GIS to simplify translation, integration, storage, and display of transboundary data. Extraordinary cooperation between the United States and Mexico is needed to acquire updated aerial photography, develop a consistent base map and other data layers, and reconcile national differences in mapping standards and data management practices. TRIP is encouraging that cooperation through its participation on a binational spatial data committee created by the governments of Mexico and the United States.

Participants in TRIP include universities, non-governmental organizations, and government agencies from the four U.S. and six Mexican border states, as well as agencies of the U.S. and Mexican federal governments. Although TRIP was conceived and developed in large part by information consumers at the grass-roots level in the border region, it required U.S. and Mexican federal involvement to achieve its bilateral objectives. Consequently, much of the planning for TRIP is being coordinated through mechanisms created under bilateral agreements between the U. S. Geological Survey (USGS) and the Instituto Nacional de Estadistica, Geografia, e Informacion (INEGI), and between the Secretaria del Medio Ambiente, Recursos Naturales, y Pesca (SEMARNAP) and the U. S. Environmental Protection Agency (EPA).




*TRIP Worm which includes four U.S. border states (California, Arizona, New Mexico, and Texas) and six Mexican states (Baja, Sonora, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas).*

Formation of TRIP began in December 1994 and is now consituted to be governed by a twelve-member board. Working groups include Law and Policy, Special Funding, Binational Coordination, Federal and Interior Geographic Data Committee Liaison, U. S. Academic Committee, and Transboundary Spatial Data Inventory. It is envisioned that in due course there may be a need for two bodies, TRIP/Mexico and TRIP/USA, with the authority to convene and operate as national or binational associations and appoint joint committees.

*(Continued on page 6)*

# Turn Likely to Return to Casa Colorada

While the issue may have escaped the attention of the world at large, to the long-time residents of a village southeast of Belen the name their village bears is a matter of cultural pride and identity. And following the meeting January 19 of the NMGIC Geographic Names Committee (GNC), the village is likely to return to the name–Casa Colorada–that it has had since the 18th century, while an ephemeral postal name–Turn–likely will return to being a footnote to local history. The issue began when Raymond Baca, whose family has roots deep in the community, contacted the GNC to say that the name Turn, which appears on road signs and highway maps, is not used by local residents and is a source of confusion to outsiders. Field investigation by Bob Julyan confirmed this and the persistent use of the community's original name, Casa Colorada. Opinions expressed through the local newspaper and through phone calls and letters to Julyan were unanimous in urging formal adoption of Casa Colorada. Raymond Baca and his sister appeared at the GNC meeting January 19. He said the issue has catalyzed an increased sense of pride in the community, with interest now expressed in restoring the village's Catholic church and also its school building. Baca also said the timing of this was fortuitous, as the community is growing, and it is important that new residents learn to know the village by its true name.

San Acacia/San Acacio controversy

But resolving a similar issue at a village further south along the Rio Grande has proved more problematic. A woman from the community of San Acacia contacted the GNC saying the present name resulted from an error made when a post office

*(Continued on page 7)*

***TRIP: Transboundary Resource Inventory Project*** *(Continued from page 5)*

**The Transboundary Resource Inventory Management System (TRIMS)**

TRIMS is the automated information management system through which TRIP data are compiled and made available. As spatial and tabular data are developed, they will be stored and maintained at World Wide Web/Internet node sites, including local, regional, state, and national government entities and academic institutions in the border states. Users will be able to access and download the data and add new data to these locations for storage. Data in the TRIMS will be compliant with the standards of the National Spatial Data Infrastructure.

TRIP plans to begin making available base maps and selected data files for several areas of the United States-Mexico border. These pilot or demonstration efforts involve the Laguna Madre area on the coast of Texas and Tamaulipas; the Hueco-Mesillo Bolson area that includes El Paso, Las Cruces, and Ciudad Juarez; the Arizona-Sonora Desert Biosphere Reserve area that includes Cabeza Prieta, Organ Pipe, and the Sierra Pinacate; and the Tijuana River Watershed. As these pilot projects are developed, they can be viewed by calling up the TRIP home page on the Internet <http://www.glo.state.tx.us/infosys/gis/trip>.

The aerial photography for base mapping is getting underway. Supplemental data layers will need to be developed and incorporated to further enhance the usefulness of the base map. State and federal government agencies, the private sector, academic institutions, and others are asked to share in development of data resources. TRIP is committed to expand the amount of information available while working diligently to assure the quality and accuracy of its TRIMS data.

**TRIP United States Academic Committee (TUSAC)**

TUSAC is comprised of nine U.S. border universities which have signed a Memorandum of Intent to cooperate as participants of TRIP in creating an inventory and geographic information system (GIS) encompassing border resources. TUSAC members are: *Arizona State University, University of Arizona, San Diego State University, New Mexico State University, New Mexico Institute of Mining and Technology, University of New Mexico, University of Texas at El Paso, University of Texas-Austin, University of Texas Pan American*. The Chair of the TUSAC is Dr. Richard Peck, President, University of New Mexico.

**TRIP Glossary**

The Texas General Land Office has published a bilingual glossary of cartographic terms to assist participants in TRIP-related projects. Also included is an English/Spanish guide to acronyms used in cartography, resource management, and government relations in the U.S./Mexico border area. To order, contact Andrea Guerrero at the Texas General Land Office, 1700 North Congress Avenue, Room 630, Austin, TX 78701-1495. Telephone: 512 305-8996. Fax: 512 463-6311. Email: aguerrer@glo.state.tx.us

# TIGER for the 2000 Census

The Denver Regional Office of the Census Bureau is currently undertaking a major effort to update the TIGER/Line files for every county in the state. We are attempting to add streets, address ranges, and feature names where they are missing or incorrect in TIGER. By contacting local officials in counties, cities, and towns thoughout the state, we hope to obtain the best information available so that the TIGER system can be improved for the 2000 Census.

This tremendous project is being approached with three separate programs tailored to fit the needs of local governments. Each of these programs is driven by the fact that the Census Bureau can conduct the most efficient census through the mail by utilizing the Post Office to deliver questionnaires. Upon their return to the Census Bureau, the questionnaires are then geocoded to a census tract and block based on the respondent's address. The Census Bureau obtains the latest address information available through a new agreement with the Post Office. Every quarter the Post Office will provide the Census Bureau with a complete list of all addresses in the county. The Census Bureau then matches these addresses to the same features in TIGER. Those that do not match are referred to as "fallout" and become the Census Bureau's workload to resolve.

The TIGER Improvement Program (TIP) is a paper-based program that allows local governments to receive the latest TIGER based address maps and a fallout list from the Census Bureau. The local government is then asked to annotate on the maps where TIGER is missing features or is incorrect.

The digital exchange program is designed to allow local governments who have built and are maintaining a GIS with address information to submit a file to the Census Bureau for incorporation into the TIGER system. This option provides great potential for local governments to update the Census Bureau TIGER files at a minimal cost.

Lastly, if the local government cannot participate in either TIP or the digital exchange program, the Denver Regional Office Census Bureau staff will attempt to update the TIGER files in-house. We will focus on those areas where the address fallout is the greatest. Depending on budget allocations, work may continue in other areas where the address fallout is smaller.

If you feel your organization can participate in any of the above programs and has not been contacted by the Census Bureau, please call Jim Castagneri of the Census Bureau at 303 969-7760.

*By Jim Castagneri, U. S. Census Bureau*

***Turn Likely to Return to Casa Colorada*** *(Continued from page 6)*

was established soon after the arrival of the railroad in 1880. The postal officials, in apparent ignorance of Spanish, gave a feminine ending to the name of a male saint. The woman said people in the community always have used and preferred the town's original name, San Acacio. It seemed an easy issue to resolve, but it soon became embroiled in local politics, with opposing factions each claiming polls showed support for their position. In December 1995, the Valencia County commissioners voted to recommend no change in the name. Neither the GNC nor the U.S. Board on Geographic Names is obliged to follow the commissioners' recommendation, though it clearly carries significant weight, and given the confusion regarding local opinion, Julyan and at least one GNC member are going to poll the residents themselves before a final decision is made.

Don't Take Grant for Granted

And as if incorrect Spanish spellings were not affront enough to New Mexico toponymy, USGS mappers have in recent years instituted a policy of omitting the term Grant from their topographic maps. Thus, what is labelled the Town of Manzano Grant on the 1954 Torreon 7.5-minute quad appears simply as Town of Manzano on the adjacent 1985 Punta de Agua quad. The term "grant boundary" does appear–in small letters–along the line denoting grant boundaries. GNC member Robert R. White has argued that omitting the term Grant from the name itself not only is confusing to map users but also is a distortion of the name and of the history behind it. In the past, USGS mappers have verbally conceded the above, but nothing has been put in writing, and the policy persists. Therefore, the GNC will ask that this be placed on the agenda of the next Western States Geographic Names Conference, to be held in September in Salt Lake City.

Farewell, Dave

It is with deep regret that the GNC bids farewell to Dave Love, who has been forced by work pressures to leave the committee. Dave has been a member since the committee assumed its present form more than ten years ago, and his geological knowledge, interest in names, and general good humor will be missed.

*By Bob Julyan, Chairman, Geographic Names Committee*

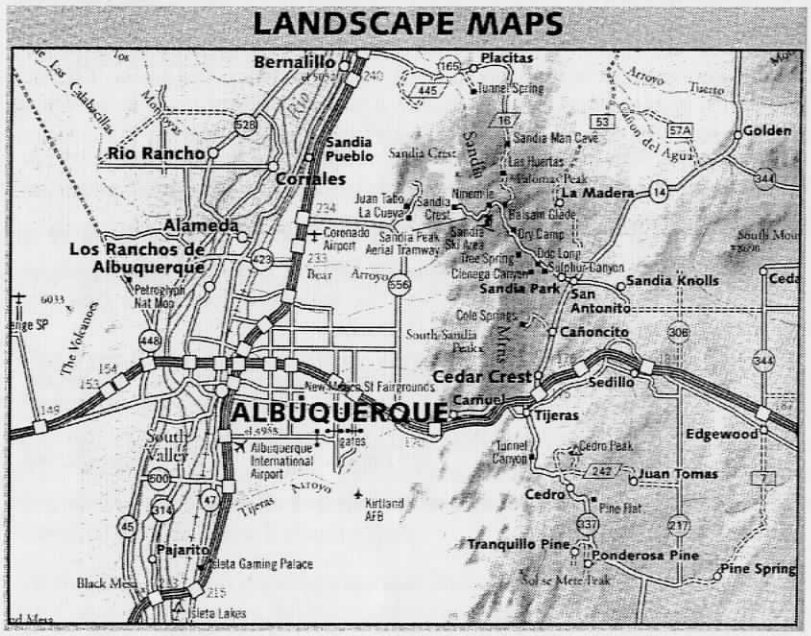
# New Mexico Road and Recreation Atlas

A new atlas for New Mexico has been published that will be of interest to the state's geographic information community. Released late in 1995, the *New Mexico Road and Recreation Atlas* is a unique portrait of the state, offering shaded relief maps of the landscape, easy-to-read land status and ownership maps, a directory of campgrounds and recreation sites, and the most current and accurate street maps for Albuquerque, Santa Fe, Las Cruces, and Roswell.

Instrumental in the development and publication of the atlas was William Tefft, a New Mexico native and former member of NMGIC who now is publications director for Map Link, the nation's largest distributor of maps and map products, based in Santa Barbara, California.

The atlas is published by Benchmark Maps, an imprint consisting of Map Link, Allan Cartography of Medford, Oregon, and Eureka Cartography of Berkeley, California.

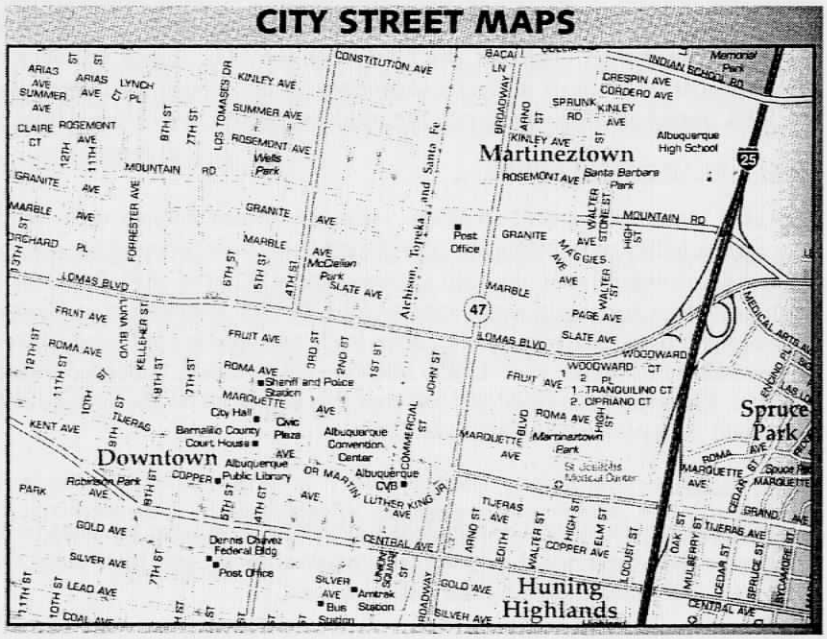
Allan Cartography, also known as Raven Maps and Images, did the cartographic production of the statewide pages--New Mexico map users probably are familiar with the Raven shaded relief map of the state–and Eureka Cartography produced the street maps.




To produce the atlas with a high standard of accuracy, Tefft drove and field-checked almost every road shown in the atlas and consulted with county officials in each of New Mexico's 33 counties. (The atlas is the first map to represent a village southeast of Belen as Casa Colorada and not Turn; see page 6.)

He and Bill Hunt, owner of Map Link, also drove every street shown on the city street maps. This enabled them to show current neighborhoods, parks, hospitals, shopping districts, schools, and other features.

The atlas sells for $17.95 at bookstores throughout the state.

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## 1996 Corporate Sponsors



## NMGIC thanks these Corporate Sponsors for their 1996 support

# Calendar

Applications of Remote Sensing and GIS on Rangelands, Wichita, Kansas, February 10-15, 1996. Contact: 503 737-1624 or Fax 503 737-0504.

Government Technology '96, Austin, Texas, February 14-16, 1996. Contact: Government Technology Conference, Southwest Region, 9719 Lincoln Village Drive, Suite 500, Sacramento, CA 95827-9788. Telephone: 916 363-5000. Fax: 916 363-5197.

Nebraska GIS 96 Symposium, Lincoln, Nebraska, February 20-22, 1996. Contact: Larry Zink, Nebraska GIS Steering Committee, P. O. Box 94664, Lincoln, NB 68509. Telephone: 402 471-3206. Fax: 402 471-4157 Email: lzink@doc.state.ne.us

11th Thematic Conference and Workshop on Applied Geologic Remote Sensing, "Practical Solutions for Real World Problems," Las Vegas, Nevada, February 27-29, 1996. Contact: Nancy Wallman at ERIM Conference Service Department, P. O. Box 134001, Ann Arbor, MI 48113-4001. Telephone: 313 994-1200 extention 3234. Fax: 313 994-5123. Internet: wallman@erim.org.

GIS in Environmental Resource Management, Reno, NV, March 13-15, 1996. Contact: Scott Johnson, Ventura Co. Air Pollution Control District, 669 County Square Dr., Ventura, CA 93003. Telephone: (805) 645-1419. FAX (805) 645-1444.

10th Annual Conference on GIS, Vancouver, British Columbia, Canada, March 18-21, 1996. Contact: Conference Department, GIS World, Inc., 155 E. Boardwalk, Suite 250, Fort Collins, CO 80525. Telephone: 970 223-4848. Fax: 970 223-5700. Email: event-info@gisworld.com

19th AM/FM International Conference, "Thriving in an Age of Competition," Seattle, Washington, March 25-27, 1996. Contact: AM/FM International, 14456 E. Evans Avenue, Aurora, CO. Telephone: 303 337-0513. Fax: 303 337-1001.

1996 ASPRS/ACSM Annual Convention, Baltimore, Maryland, April 20-26, 1996. Contact: Denise Cranwell, ASPRS/ACSM '96, 5410 Grosvenor Lane, Bethesda, MD 20814-2122. Telephone: 301 493-0200. Fax: 301 493-8245.

**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.**

2nd 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.

Second International Airborne Remote Sensing Conference and Exhibition, San Francisco, CA, 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. 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 Grosvenor Lane, Suite 100, Bethesda, MD 20814-2122. Telephone: 310 493-0200. Fax: 301 493-8245.

*The Map Legend* is beginning its seventh year of publication with this issue. Getting this newsletter to you is a cooperative effort in the best spirit of the NMGIC. It takes an enormous amount of coordination, cooperation, and generosity from the many people willing to give their time, talents, and energy outside their normal jobs and normal working hours to bring you this newsletter. We especially appreciate all the members who send or write articles. All members are asked to keep *The Map Legend* in mind if you have news items or pertinent articles you would like to see published. Also, if you have any suggestions on what kinds of workshops you would like NMGIC to sponsor in the future, send them to *The Map Legend* % Stan Morain, Earth Data Analysis Center, 2500 Yale Boulevard SE, University of New Mexico, Albuquerque, NM 87131-6031 or email to Stan at edac@spock.unm.edu.

# THE MAP LEGEND


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