

THE MAP LEGEND

Est. 1984

NMGIC, Inc. PO Box 9445 Albuquerque, NM 87119-

<http://nmgic.unm.edu>

Differential GPS Coverage Coming Soon To New Mexico

For the past decade, the US Coast Guard (USCG) and Army Corps of Engineers (COE) have developed a network of differential-GPS (DGPS) broadcast stations that supports real-time navigation and positioning applications in coastal and major navigable river areas throughout the country. Those of us living in the less-watery parts of the United States, like New Mexico, have been unable to make use of this federally-provided service. This situation is about to change - and very soon, indeed.

The US Department of Transportation is coordinating an effort to expand the USCG/COE network to provide real-time navigation/positioning capability for the entire country. This collection of real-time broadcast facilities is referred to as the Nationwide Differential GPS (NDGPS) network. The NDGPS network will eventually include a total of 130 stations, including the existing USCG/COE facilities. The primary impetus for this activity is the Federal Railroad Administration's initiative to provide a Positive Train Control system for the nation's rail network, thereby improving safety and efficiency of train traffic. A wide range of other positioning-related activities will benefit from the NDGPS system as well.

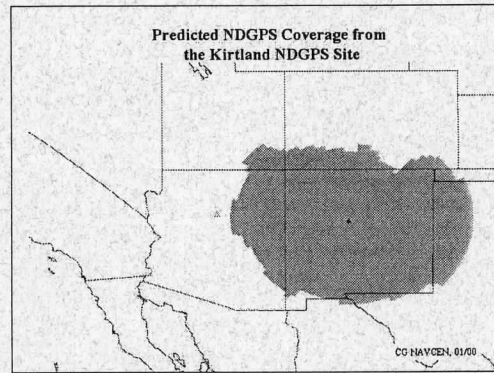


Figure 1. Anticipated Signal Coverage for the Kirtland Station.

tions. Differential corrections will be broadcast, at around 300 kHz, from 90-meter-tall GWEN transmission towers.

Predictive model results show that nearly the entire state should be within broadcast range of the Kirtland station. See Figure 1 for a plot of the anticipated signal coverage for the Kirtland station. A total of 15 additional NDGPS stations (including Flagstaff, AZ and Summerfield, TX) is slated to be brought on-line by the end of 2000. See Figure 2 for a plot of the predicted signal coverage for the entire country (filled triangles indicate operational stations and open triangles indicated future (after 2000) stations). When fully-configured, the NDGPS network will provide dual correction-signal

Although the federally-provided NDGPS funding for this current fiscal year fell short, by about one-half of the amount requested, there is ample budget to begin the process of adding new broadcast stations. Fortunately, for New Mexicans, Albuquerque's Kirtland Air Force Base will be the site of one of the first newly-established NDGPS stations. We anticipate that the Kirtland station will be operational by April 2000. Under an exemplary cooperative effort, many government agencies are contributing to this program. The US Air Force is making available a de-classified / de-commissioned network of emergency communications facilities, the Ground Wave Emergency Network (GWEN). A total of 53 GWEN sites located around the country will be converted from their old communications configurations to real-time GPS reference station installa-

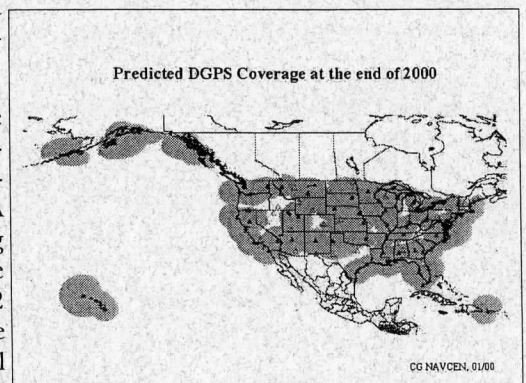
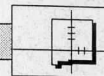


Figure 2. Predicted signal coverage for the entire country.

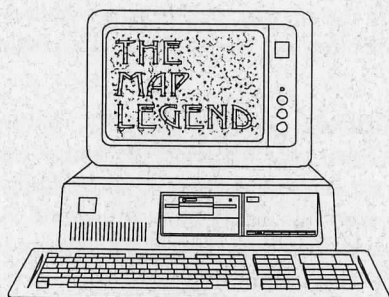
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THE MAP LEGEND



Editor: Amy Budge

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From the President

Well, by now Y2K is but a memory of basically a non-event, initially played up to the extreme by media moguls as a seemingly inevitable vehicle of doomsday and destruction. As the New Year approached it seemed as if they changed the push of the thing from all out millennial mayhem to an all-too-excellent opportunity for the terrorists and whackos of the world to whip up centennial catastrophe (especially for Americans attempting to party abroad). I've heard from several of you who had to bear the brunt of supervisors' and directors' stresses of December on the overall integrity of your systems and their ability to transition from '99 to '00 without a hitch. I'm sure that statewide EMS personnel and event contingency headquarter bunker occupants weren't the only ones who let out a collective sigh of relief at 12.01.01.00! I even received a bottle of "Celebration [soap] Bubbles" from the NM Information Technology Management Office in the mail (as many of you probably did) proudly proclaiming: "ITMO; Y2K & Beyond!!" And so its over, it came off with some minor hitches, and most importantly, I presume everyone's payroll departments were unaffected. So let's move onward!

And onward is the direction that the NMGIC Executive Board moves! In the December Board meeting, members expressed growing concerns from within the NM GIS community on the very real issue of GIS Certification. While organizations like URISA (please see their web page on this topic at <http://www.urisa.org/certific.htm>) have begun a positive dialogue on this issue amongst GIS professionals, there apparently has been at least one case where surveyors in an eastern state were successful in pushing very detrimental certification legislation through their legislature without input from the GIS community. Needless to say, while we have no indication that anything similar might be afoot here, the Board suggested that the issue needed further study and suggested a joint NMGIC/GISAC subcommittee be established to look into NM GIS Certification possibilities. I approached GISAC with this suggestion at their January meeting and, being extremely interested in the topic, they passed a resolution to establish a joint subcommittee on the spot. Please let anyone on the NMGIC Board know if you are interested in this topic and want to participate on the committee. We will definitely keep you informed!

Speaking of GISAC, I would like to conclude this preamble with two related comments. First off, after the first few largely organizational meetings in late fall of last year, GISAC is now alive and well. While it is structurally designed specifically for NM state agency GIS folks, in actuality it has become an ongoing, open monthly forum for ALL people working in NM with an interest in GIS (and all are welcome)! It usually meets on the 2nd Tuesday morning of each month from 9:30 to 12:00 at the NM State Archives Library in Santa Fe. In the January meeting, we had a turnout of over 40 folks! Kudos to GISAC's Chair, Richard Koehler, for a great job so far.

Second, those of us at January's GISAC meeting were treated to an excellent presentation by NMGIC's own GPS Committee Chair, William Stone of the U.S. National Geodetic Survey, on the current state of civilian GPS in NM and what changes GPS Modernization might bring. Exciting times lie ahead with real-time differential GPS coming to NM probably by this fall. If you want to know more, then I encourage you to come to the NMGIC Spring Meeting, which will focus on GPS and its applications in NM, from strictly low-end recreational receivers to the state-of-the-art machines. See related information on the program on page 7. I hope you'll join us!

David J. McCraw, President

The Map Legend **2000 Publication** **Schedule and** **Deadlines**

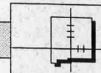
Spring/Summer Deadline for articles:
May 15, 2000
Publication date:
June 15, 2000

Fall Issue Deadline for articles:
September 15, 2000
Publication date:
October 15, 2000

Winter Issue Deadline for articles:
January 15, 2001
Publication date:
February 15, 2001

Editors of *The Map Legend* are looking for articles describing ongoing, recently completed, or recently awarded projects. "Newsy" items on your organizations, accomplishments of your personnel, event/meeting announcements.....are all welcome. Your contributions should be sent to Amy Budge either by fax (505-277-3614) or by email to abudge@spock.unm.edu by the deadlines.

Do you have information about a project, new techniques, GIS and related issues, announcements, news, etc. that you would like published in the Map Legend?



New Mexico Rides Together: Devising a State Implementation Strategy

The cities of Albuquerque, Santa Fe, and Las Cruces recently embarked upon a collaboration that improves a commuter's choice and convenience regarding alternative transportation. Over the last six months, this triumvirate of cities has negotiated the purchase and implementation of *GIS/T Rideshare*, a ride-matching database that uses ArcView. With all three cities using the same software to create databases and store data on potential carpool matches, sharing data and centralizing alternative transportation inquiries into one convenient web site or toll-free phone number becomes much more plausible.

New Mexico's rideshare "problem" was defined by its software: all three participating cities had their own custom applications, with heavy reliance on the vendor for changes, further increasing costs. Much of the existing programs were "old" technology, as evidenced by several Y2K issues, and annual costs were prohibitive in making the necessary improvements. It was obvious that needed to be done...and fast.

Collaborations occasionally are planned, but some of the best ones are not. *New Mexico Rides Together* (the state implementation strategy) falls into the latter category. The City of Albuquerque struggled for several months to find a replacement for its non-Y2K compliant ride-matching software. Most of the software packages under consideration were in the \$10K to \$20K range, and exhibited the same inherent problems that were experienced with the existing software. Of the front runners, all were custom written and altered for each property, further increasing the cost. Gar Clarke, GIS Manager for the City of Santa Fe was on a mission similar to Albuquerque's, and this is where the collaboration began.

Gar's phone call to Albuquerque was the precursor to the *NMRUG* (*New Mexico Ride Share User Group*), a collection of ride share providers and representatives from the State, who wanted to work together to find a common solution to the

shared problem, and to provide quality service for prospective carpoolers. The group began shopping for a software package that would be GIS-based, preferably using ARC/INFO or ArcView, have an open architecture, and be PC based. It was desirable to find software that would allow the greatest amount of flexibility, with a choice of configurations, and with multi-level geocoding (coordinate, address or landmark, and polygonal).

NMRUG selected *GIS/T Rideshare*—a ride-matching software within a GIS. *GIS/T-Rideshare* is an extension application written for ESRI's ArcView®. *GIS/T Rideshare* uses ArcView's standard address matching tools which can accurately locate an address, either a house number and street, intersecting streets, or landmarks (i.e., worksites, park and ride lots, hospitals, etc.). *NMRUG's* plan is for each municipality to use their existing street center-line file in addition to using ESRI's StreetMap as a "filler" for gaps in the statewide coverage. *GIS/T Rideshare* also features an easy-to-follow user interface that graphically portrays all the steps needed to perform the ride match service. Best of all, in addition to fulfilling all the requirements, the package was affordable. Available on a State contract, each of the municipalities paid about \$4000, including ESRI's StreetMap.

As of February 2000, all three municipalities are running *GIS/T Rideshare* for their carpool matching. The program may be implemented statewide as the cities become more familiar with its benefits. These benefits include better service to customers, targeting potential pooling locations for intra-city travel, and coordinating employer outreach efforts. The potential for ride-share database integration is high and the use of a 1-800 number and Internet web pages for toll free ride-matching throughout the state is likely.

Bill Slauson
City of Albuquerque Transit Department

GISAC News

Electronic Directory of GIS Resources to be on the Web

The GIS Advisory Committee (GISAC), a subcommittee of the Information Technology Commission, and the Resource Geographic Information System (RGIS) Program are collaborating to develop an online directory of GIS resources in the State of New Mexico. The directory is based on results of a survey conducted by GISAC and RGIS in late summer/early fall 1999. The survey was sent to state and local government agencies and offices, to determine the status of GIS in these agencies and to identify data that can be shared among users.

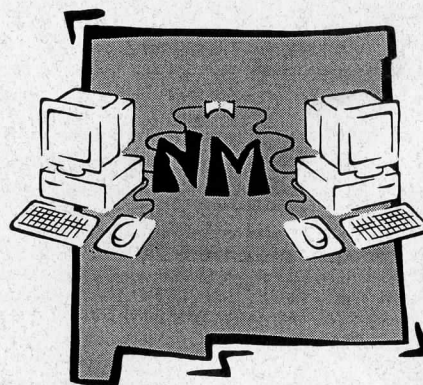
Amy Budge and Mike Inglis, RGIS, are responsible for assembling the directory, which will be served on the RGIS web page. The directory will list existing GIS data, linking users to sources of these data. It is expected that the directory will grow by providing organizations an opportunity to contribute information on their data through an electronic, online form.

For more information on the directory, or how you can contribute to it, contact:

Mike Inglis at 505-277-3622, ext 235
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abudge@spock.unm.edu

Rick Koehler at 505-827-5986



Changing Historical Errors in Names

It's not uncommon for maps to reflect confusion about Spanish orthography, but for the maps themselves to do it? Dave Love, geologist with the New Mexico Bureau of Mines and Mineral Resources and former NMGC Board and Names Committee member, passed the word along through David McCraw, also with the Bureau and present NMGC president, that the name Los Medaños for the USGS 7.5-minute quad, in southeastern New Mexico, makes no sense.

The problem is the tilde over the n—as in ñ. English uses no such diacritical, but Spanish does extensively, so much so that when English see a Spanish word containing an n bracketed by two vowels, they often assume a tilde is required. But sometimes it's not, e.g. pino.

That's likely what happened with Los Medaños. The area covered by the quad is southeast of Carlsbad, and the intended meaning is clear. After all, the correct form is Los Medanos, "The Sandhills"—exactly what's at the site. Los Medaños means,...nothing.

Normally, an obvious orthographic error such as this could be corrected through the Geographic Names Information System (GNIS), especially as the area covered by the quad has few people culturally or emotionally invested in the issue. But because the name designates a USGS 7.5-minute quadrangle, any name-change *must* go through the US

Board on Geographic Names (USBGN).

More Spanish permutations.....

The Santa Fe County Planning Office, in their desire to have community names in their jurisdiction conform to local usage, discovered three discrepancies with GNIS. Alina Bokde in the planning office contacted the NMGC Geographic Names Committee to determine how to achieve alignment. The communities' present names are:

Cerrillos. This historic ancient community north of Madrid was named for the "little hills," or *cerrillos*, nearby. No problem with that. But historically the name was Los Cerrillos, and while it might seem a small matter, of such matters are small wars made. After all, the Cerrillos form has appeared in print for a very long time, and as Roger Payne, USBGN Executive Secretary, often reminds people, correcting an historical error is not by itself sufficient reason to change a name. Still, local use and preference are among the USBGN's primary criteria.

Arroyo Seco. No, not the village north of Taos, rather, the village south of Española. And that's the issue: After all, the name Arroyo Seco occurs many times in New Mexico and this community gets lost. Thus, the local people have begun insisting on the community's full name: El Valle de

Arroyo Seco.

Quarteles. This is how the name appears on road signs, but local people say this spelling is incorrect—and indeed it is. But what is the correct spelling? Should it be Cuarteles, as some local people say? Or the form in Spanish dictionaries: Cuarteles, the plural of *cuartel*, "barracks," the clear intended meaning?

According to the USBGN, because the three communities are unincorporated, they must go through the full USBGN process, including evaluating local sentiments.

Watch this space for latest developments.

It could be worse.....

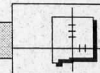
If Spanish names seem to get maimed, their meanings and pronunciations garbled, think what it would be like in a place like Hawaii, where the native names are *really* alien to English? Imagine how time will treat this name: Pu'u'ula'ula? Before an October USBGN decision restoring the native Hawaiian name, this mountain feature was called Red Hill. El Valle de Arroyo Seco should be nothing.

Anyone having knowledge or opinions about the above proposed changes, please contact me.

Bob Julyan, Chair
Geographic Names Committee

Remember to Renew Your NMGC Membership for 2000!

NMGC membership dues are now payable for 2000. Annual dues for regular members is \$20; annual dues for student membership (with student ID) is \$10; and annual membership for Corporate members is \$100. Checks payable to NMGC or purchase orders should be sent to Denise Bleakly, NMGC Treasurer at: NMGC, PO Box 9945, Albuquerque, NM 87119-9445. NMGC cannot accept credit cards. See the NMGC web site at <http://nmgc.unm.edu> for a membership form.



(Continued from page 1)

coverage for any point in the country.

In order to take advantage of the NDGPS real-time capability, you will need to have a GPS receiver that can use the differential correction information. "Differential-ready" is the term that many vendors use to identify a receiver that has this capability; and most receivers, including most of the low-cost handheld units, are "differential-ready." You will also need a differential correction beacon receiver that is interfaced with your GPS receiver. This device receives the correction information that is broadcast by the NDGPS station and passes the correctors to the GPS receiver. The GPS receiver then applies this information to its observational data and displays the corrected positional data.

The positional accuracy that is supported by the NDGPS system varies with the user's distance from the reference station. A good rule of thumb is that the horizontal accuracy can be determined by the following expression: [0.5 meter + 1 meter / 150 kilometer separation + some receiver-dependent noise]. So, for example, if you are 300 kilometers from the reference station, your accuracy will typically be around 3 meters. Users in the greater Albuquerque area will probably realize accuracies of about 1 meter. This accuracy refers to the real-time information displayed by the receiver, with no need to perform

any kind of post-processing of the data. And, it's all for free - there is no subscription or user fee involved (other than a very small chunk of your tax dollars!).

Few-meter-accuracy real-time positioning applications, supported by the NDGPS network, include GIS data collection, emergency and fleet vehicle tracking, search and rescue, resource management data collection, and site/station recovery, just to name a few. The NDGPS stations will also contribute to the National Geodetic Survey's nationwide network of Continuously Operating Reference Stations (CORS) that is used for post-processed, centimeter-accuracy surveying applications. CORS stations support applications that include the establishment of geodetic control, aerial photography ground control, and the monitoring of crustal motion. With the addition of the Kirtland station, we will now have a total of five CORS stations in New Mexico (Aztec, Tucumcari, Pie Town, White Sands, and Kirtland). Together, the CORS and NDGPS networks support an extremely broad spectrum of GPS applications. GPS just keeps getting better and better all the time. Happy positioning to all...

Bill Stone

GPS Committee Chair

NMGIC Sponsors GeoMedia Workshop

1:30-4:30 May 4, 2000

Albuquerque, NM

NMGIC is sponsoring an Intergraph workshop that highlights capabilities of GeoMedia WebMap. Topics will include:

- * Smart Vector Maps on the Web
- * Live links to multiple data warehouses from multiple formats (i.e., MGE, Oracle Spatial, ArcInfo, Shapefile, Mapinfo, CAD)
- * Multiple Raster support

Intergraph's GeoMedia Web Map lets users communicate geographically through smartmaps on the Web. This exciting Windows-based technology enables users to combine and distribute GIS information from multiple sources over the intranet or Internet.

Geographic information was once only available to a privileged few in the GIS department. Clients not linked to the local GIS system, nor trained to use it, could not access the information. Now, with GeoMedia Web Map, users can share GIS data with virtually anyone in a secure, read-only environment that protects the data. Non-specialists within organizations, clients, and constituents can access and use geographic data to obtain frequently requested information such as customer service, public access, land records, and more.

The workshop will also introduce Intergraph's Program for Schools. This program, "The Power to Learn," gives students the power to communicate geographically. It enhances the traditional classroom environment by introducing tools, that make learning fun. The tools are tailored for all ages and can be introduced by teachers, who lack a technical background.

To register for the free workshop, please use the form on the NMGIC web site. Questions can be directed to Bobby Creel, NMGIC Workshop Coordinator at bcreel@wrii.nmsu.edu.

Upcoming NMGIC Board of Directors Election

Nominations are open to fill five positions on the NMGIC Board of Directors. Nominees must have a current, year 2000 NMGIC membership and, if elected, be willing to serve on the Board for two years. If you are interested, or wish to nominate someone, please contact Rich Friedman, NMGIC Elections Coordinator at 505-863-9517, or by email at gismc@cia-g.com. Ballots will be distributed by April 3, 2000 to NMGIC's members who are current for year 2000.

Remember, that to be eligible to vote, you must be a paid member for the year 2000. Exercise your right to vote....pay your 2000 membership today!

(see the NMGIC web site at <http://nmgic.unm.edu> for a membership form)

Announcing the NMGIC Spring Meeting....Mark your calendars!

GPS: Determining the Appropriate Tool for the Application

Friday May 5, 2000

University of New Mexico Science & Technology Park

801 University SE

Albuquerque, NM

The Spring NMGIC meeting is devoted to Global Positioning System technology and will include presentations that introduce the technology, describe applications, and look at the future of GPS. In the afternoon, GPS vendors will have an opportunity to describe and demonstrate their products.

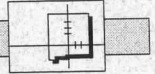
The meeting is free to NMGIC members (dues must be paid for 2000). A \$10 registration fee will be charged to non-members. Box lunches will be provided by NMGIC.

Preliminary Program

8:00-8:30	Coffee/Exhibits Open
8:30-8:45	Welcome and Announcements
8:45-9:15	GPS Overview (Jim Reilly, NMSU)
9:15-9:45	Break/Visit Exhibits
9:45	Presentations on Applications
9:45-10:15	Recreational Use (Bob Julyan)
10:15-10:45	Automatic Vehicle Location (TBA)
10:45-11:15	Photogrammetric applications and developing GIS data such as roads and hydrology (Rich Friedman and TBA)
11:15-12:00	Enhancements and Modernization (Bill Stone, NM Geodetic Advisor)
12:00-1:00	Lunch/Visit Exhibits
1:00-2:15	Prospective Vendor Presentations
	Trimble
	Ashtech/Magellan
	Sokkia
	Garmin
	Red Hen Systems
2:15	Vendor GPS Demonstrations

ONLINE GIS WORKSHOP:

On May 4 from 1:30 to 4:30 in the afternoon, NMGIC is sponsoring a workshop on Intergraph's GeoMedia tool. The workshop is free to NMGIC members, but registration is required for logistics. If you wish to attend the workshop, please register using the online form on the NMGIC web site at <http://nmgic.unm.edu>



News and Announcements From Our Corporate Sponsors

From ESRI....

Highlighted GIS User Sites in New Mexico

ESRI GIS software users in New Mexico have always been innovative users of GIS technology. Through the years, several GIS implementation sites in New Mexico have been highlighted in a variety of publications. These highlights include articles in GIS-related magazines and application-specific maps that have been included in the annual ESRI Map Book. Some recent GIS user site highlights in New Mexico include:

- "Enterprise GIS Takes Off in Bernalillo County", ArcUser magazine, July-September 1999.
- "Managing Transmission Lines" at Public Service Company of New Mexico, Enterprise GIS for Energy Companies book, 1999.
- "Formerly Glamorous" Route 66 redevelopment project, GIS for Landscape Architects book, 1999.

For more information, please contact Mark Taetz at ESRI-Denver (303-449-7779).

ESRI GIS Training Courses

Instructor-led ESRI GIS Training Courses are available in New Mexico. For more information, please contact Paige Hayes at ESRI-Denver (303-449-7779) or visit ESRI's web site (www.esri.com/training). Please register ASAP; training course size is limited.

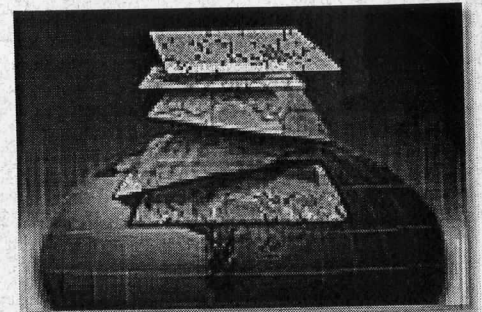
Apr 10 to Apr 12	Advanced ArcView GIS.
Apr 13 to Apr 14	Introduction to Avenue.
May 1 to May 5	Introduction to ArcInfo using ArcMap, ArcCatalog, and Arc Toolbox.

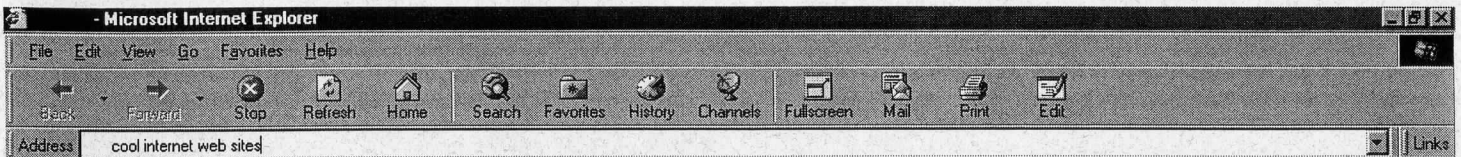
Web-based ESRI GIS Training Courses are also available through the ESRI Virtual Campus. For more information, visit the ESRI Virtual Campus (campus.esri.com).



GIS Seminars

GIS technology continues to evolve! ArcInfo 8 software is finally shipping and other new GIS-related technologies (e.g., ArcIMS) will be released in the near future. To help communicate some of the features and benefits of new GIS software products, ESRI will be conducting several education-oriented seminars in New Mexico throughout the year. For more information on seminar topics, dates, and locations, please contact Mark Taetz at ESRI-Denver (303-449-7779) or visit the ESRI web site (<http://www.esri.com>) in the Events section.



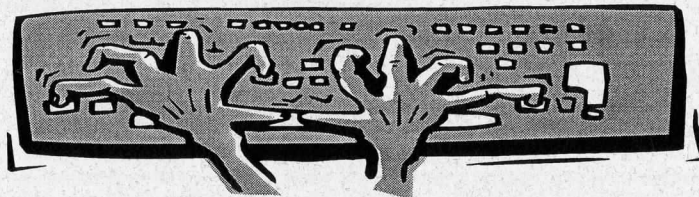


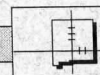
Cool Internet Web Sites

For this issue of *The Map Legend*, the "Cool Internet Web Sites" focuses on *Online* or *Distance Learning* opportunities for GIS education. I quite often get questions like, "Where can I learn about GIS online?" "Is there advanced course work I could do in GIS?" "Are there basic tutorials about GIS?" So, I spent some time looking for sites on the Web that offered all levels of training for GIS online. I also found a link to a very good article, *Is Online Training for You?* which raises some good points about online learning. As always, if you find a site you think is useful to the membership, please contact Denise Bleakly at 505-284-2535 or email drbleak@sandia.gov to add it to our list. Denise will be compiling a list of NMGC corporate sponsors for a future issue of *The Map Legend*.....please contact her.

Virtual Classrooms in GIS

- Article on "Is Online Training For You?" <http://giscenter.isu.edu/training/OnLineLearning.htm>
- USGS online overview of GIS <http://info.er.usgs.gov/research/gis/title.html>
- ESRI's virtual campus <http://campus.esri.com/campus/home/home.cfm>
- University of Kingston (UK) Distance Learning Course in GIS <http://www.crworld.co.uk/gis.html>
- University of Texas Virtual Geography Dept. online GIS courses as well as other geography classes <http://www.utexas.edu/depts/grg/virtdept/contents.html>
- California Geographic Information Association (CGIA) GIS Education Opportunities in California, other education sources <http://www.sandag.cog.ca.us/cgia/edulinks.html>
- Idaho State University GIS Training & Research Center. Has some online GIS classes. <http://giscenter.isu.edu/>
- Kentucky State GIS courses online http://www.state.ky.us/agencies/finance/depts/ogis/new_web/training/listing
- Penn State's Certificate Program in GIS; online training <http://www.worldcampus.psu.edu/pub/programs/gis/index.shtml>
- GIS Tutorials - Robert E. Kennedy Library GIS tutorial links http://multiweb.lib.calpoly.edu/research/all_databases/gis/gis3.html
- Utah State University GIS Exercises <http://www.nr.usu.edu/Geography-Department/rsgis/GIS/exer/gisexer.html>
- NCGIA's core curriculum in GIS at all levels http://ncgia.ucsb.edu/education/curricula/cctp/resources/example_courses/examples.html





Job Board

GIS Student Employment Opportunity

REQUIREMENTS: An interest in GIS applications with a background in the social, natural, or earth sciences, planning, statistics, or engineering is necessary. Introductory coursework in GIS, mathematics/statistics and computer science is required. Some experience with ARC/INFO, ArcView, and SAS in a Unix and Windows NT environment would be useful. Also, knowledge of statistical mapping and programming (Arc Macro Language, Avenue and Visual Basic) is desirable. Must be a UNM undergraduate or graduate student registered for a minimum of 6 credit hours. Training will be provided beyond requirements and only students with at least one more year left before graduation will be considered.

HOW MUCH: Salary depends on experience, \$7.00-\$9.00 per hour during training. Possible Internship credit.

WHERE: University of New Mexico, Division of Government Research, 1920 Lomas NE, Room 166.

WHEN: Now. Hours are flexible.

WHAT: GIS Specialist, assists staff and other students in developing a geographic information system (GIS) for traffic safety/transportation, health-care, and various other applications. Performs map interpretation, computer based data entry and editing, and presenting statistical data in map format using various GIS software packages.

CONTACT:

Larry Spear
Division of Government Research
University of New Mexico
505-277-3305

Pick up an application at 1920 Lomas NE, Room 166,
or email lspear@unm.edu.

For more information: <http://www.unm.edu/~dgrint>



Calendar



GITA Annual Conference & Exhibition, March 26-29, 2000. Colorado Convention Center, Denver, CO. Contact: Geospatial Information & Technology Association (GITA), 14456 East Evans Ave., Aurora, CO 80014. Web: <http://www.gita.org>.

Remote Sensing & Hydrology 2000 Symposium, April 2-7, 2000. Hotel Loretto, Santa Fe, NM. Contact: Laura O'Hare, USDA-ARS Hydrology Lab, Room 104, Bldg. 007, BARC-West, Beltsville, MD 20705-2350. Web: <http://hydrolab.arsusda.gov/cf2k/conf2000.htm>

RS2000 - Remote Sensing and Geospatial Technologies for the New Millennium, April 10-14, 2000. Radisson Carlisle, Albuquerque, NM. Web: <http://www.fs.fed.us/eng/rsac/rs2000/>

NMGIC Workshop: GeoMedia by Intergraph, May 4, 2000, 1:30-4:30 pm. University of New Mexico Science & Technology Park, 801 University Blvd. SE, Albuquerque, NM. Contact: Bobby Creel, NMGIC Workshop Coordinator, 505-646-4337 (phone), bcreel@wrri.nmsu.edu (email). Web <http://nmgic.unm.edu>.


NMGIC Annual Spring Meeting, May 5, 2000. University of New Mexico Science & Technology Park, 801 University Blvd. SE, Albuquerque, NM. Contact: Bob Bewley, NMGIC Meetings Coordinator, 505-438-7481 (phone), bbewley@nm.blm.gov (email). Web: <http://nmgic.unm.edu>.

ERDAS User Group Meeting, May 22-23, 2000. In conjunction with ASPRS 2000 Annual Meeting. Omni Shoreham Hotel, Washington, DC. Contact: Connie Phillips-Gilbert, 404-248-9000, ext 2213 (phone), cphillips@erdas.com (email). Web: <http://www.erdas.com>.

ASPRS Annual Meeting "Start the 21st Century: Launching the Geospatial Information Age," May 22-26. Omni Shoreham Hotel, Washington, DC. Contact: ASPRS, 5410 Grosvenor Lane, Suite 210, Bethesda, MD 20814-2160. Web: <http://www.asprs.org/DC2000>.

ESRI Annual User Conference, June 26-30, 2000. San Diego Convention Center, San Diego, CA. Web: <http://www.esri.com/events/uc>.

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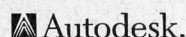
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