

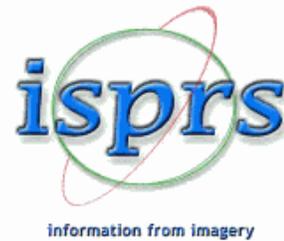
NMGIC Spring Meeting 2006

The New Mexico Geographic Information Council, Inc. (NMGIC) Spring Meeting for 2006 will be held Friday, April 28. The theme is "**Geographic Information Sciences: Technical Developments and Applications From an International Perspective**" with the general topics of Photogrammetry and Remote Sensing. The meeting will be held at the usual location ... the UNM Science & Technology Park at 801 University Blvd SE in Albuquerque, NM. Registration begins at 8:00am, and the meeting proper commences at 8:45am.

As is customary, admission is free to NMGIC members who have paid their 2006 dues (\$25/year; \$10/year for students with ID from their educational institution). Non-NMGIC-members may attend for a one-time fee of \$15, or \$7.50 for students. A box lunch and beverage is included with the admission fee. For a little added zest, door prizes will be given away at the conclusion of the meeting; one must be present to win. The door prizes consist of 1GB USB "jump drive", a Garmin eTrex GPS receiver, and an Apple iPod Nano 4GB in lustrous white. *(Continued on page 3 ...)*



Dr. Stan Morain sporting a NMGIC shirt in Thailand.



GPS CORS and NAD83 Readjustment

by William Stone, GPS Committee Chair

The nation's system of latitude, longitude, and height – known as the National Spatial Reference System (NSRS) – has evolved over time, with changes that are both necessitated and made possible by the advent of new technologies, such as the Global Positioning System (GPS). NSRS has evolved from being a network comprised solely of monumented points, with published horizontal position and/or height coordinates, to a hybrid system consisting of both monumented points and GPS installations at precisely known locations that provide GPS observational data as well as coordinates. This evolution of the network has required occasional changes to the coordinate values of control stations as well as to the geodetic datum, which serves as the foundation of the coordinates.

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NMGIC Spring 2006 Meeting *(Continued from page 1)*

The Agenda for the meeting is as follows:

8:00 - 8:45	Set up / coffee / check-in
8:45 - 9:00	Welcome and Announcements
9:00 - 9:30	ASPRS/ISPRS Introduction and Video
	Opening remarks by Ian Dowman (Great Britain), ISPRS President
	ISPRS video (15 minutes) by Orhan Altan (Turkey), ISPRS Secretary General
9:30 - 10:15	Ian Dowman - "Developments in the use of high resolution imagery to serve society"
10:15 - 10:30	Break, visit exhibits
10:30 - 11:15	Stan Morain - "Remote Surveillance of Air Quality to Forecast Respiratory Health Syndromes in the Southwest"
11:15 - 12:00	Orhan Altan - "Photogrammetry, Remote Sensing, and Spatial Information Sciences in Disaster Management"
12:00 - 1:00	Lunch (box lunches provided)
1:00 - 1:30	Unveiling NMGIC's New Website (demo by Rick Koehler)
1:30 - 1:45	Cody Wiley - "Applications of Remote Sensing in Hydrology/ Soil Moisture"
1:45 - 2:00	Mona Angel - "Viewshed Model Analysis of the Galisteo Basin using Digital Representations for Community Planning and Visual Assessment"
2:00 - 2:15	Crystal M. Krause - "Biodiversity Disturbance of Migratory Pollinator Corridors in Western North America"
2:15 - 2:30	Enrique L. Montaña - "Modeling Rangeland in New Mexico: Fusing MODIS and NEXRAD for Estimating Seasonal Grassland Variation"
2:30 - 3:15	Bill Stone, NM Geodetic Advisor - "The Global Navigation Satellite System: Where We Are and Where We Are Heading"
3:15 - ?	Drawings for door prizes (must be present to win!)

Super Fun Picture Quiz (a fabulous new feature for NMGIC members!)



One of these pictures was taken at a recent NMGIC meeting: can you guess which one?

NMGIC Spring 2006 Workshop on Remote Sensing Tools

In conjunction with the Spring Meeting, NMGIC will sponsor a Workshop on Remote Sensing Tools, on Thursday April 27, 2006 at the UNM Science & Technology Park, 801 University Blvd SE, in Albuquerque, NM. Sign-In begins at 8:30am; the Workshop begins at 9:00am.

9:00 - 10:00 Chris Ribbel, ER Mapper - "ER Mapper's Geospatial Imagery Enterprise Solutions "

Abstract:

Mr. Ribbel will be presenting ER Mapper's Geospatial Imagery Enterprise Solutions - including ER Mapper Professional, ER Mapper MBC, Image Web Server, and the Image Extraction Engine. All solutions are based on ER Mapper's leading ECW and JPEG2000 libraries, and custom solutions are available for Federal, State, Local, Tribal Governments, Academia, as well as commercial companies. Visit www.ermapper.com for more details.

Biography:

Chris Ribbel - ER Mapper - GeoSpatial Imagery Enterprise Solutions, President Americas Region

10:00 - 11:00 ENVI - "Technical Engineers will provide real world examples and live demonstrations illustrating how to get the most from multispectral and hyperspectral imagery"

Abstract:

ENVI Technical Engineers will provide real world examples and live demonstrations illustrating how to get the most from multispectral and hyperspectral imagery data. ENVI is an easy to use, advanced remote sensing software package. Tools include atmospheric correction, image registration, orthorectification, filtering, classification, radar image processing, topographic modeling, and map composition. Because ENVI's hyperspectral processing tools are derived from rigorous research and development by hyperspectral experts, it provides excellent information extraction capabilities. ENVI works with all types of remote sensing and GIS data. The ability to create, update, and query vector layers allows you to integrate GIS data information with your remote sensing data analysis.

11:00 - 12:00 Melanie Harlow, ESRI - "Introducing the ESRI Image Server"

Abstract:

This is an introduction to the ESRI Image Server product; what it is, how it works, sample applications, and more. This session will cover the basics about the Image Server components, how you can design and implement a service, about the administration and management of the services, and how to access the Image Service Services as a client.

Biography:

Melanie Harlow has been working as a product specialist with ESRI since 2002, where she has consistently worked with the raster team. She has been working with the ESRI Image Server product since ESRI acquired the technology, which she is here to discuss. Prior to ESRI she worked at Brown University in Rhode Island as the project coordinator for the NASA Affiliated Research Center. The ARC was a program which encouraged the development of commercial applications using remote sensing science and technology. Before this, Melanie worked for a few other companies as a GIS and remote sensing analyst and project leader.

Note From NMGIC President Kurt Menke

Dear NMGIC'ers:

I'm supposed to be setting up a server for delivery of the new statewide DOQQ's through RGIS, but would be remiss if I didn't take a moment to say a few words for the first MapLegend to come off the presses in quite awhile.

The geospatial community in New Mexico has always been well organized and progressive and this has enabled New Mexico to stay at the forefront of GIS and remote sensing activities nationwide, despite small numbers and low funding. I see the DOQQ acquisition as the latest example of this. Due to all the hard work of our colleagues in the Geospatial Data Acquisition Coordination Committee (GDACC) we will all have access to these color one meter images free of charge this spring. They all deserve kudos for their effort. This is certainly one of the more anticipated and exciting events this year for NM Geospatialists.

RGIS has received the first block of DOQQ images, and by the time you are reading this they will be available for download on RGIS (<http://rgis.unm.edu>). An RGIS Raster Data Viewer will also be launched shortly that will allow RGIS visitors to interactively preview the DOQQ's online in a seamless mosaic.

"The geospatial community in New Mexico has always been well organized and progressive ..."

In other news, the agendas for both our Spring Meeting and Workshop have been set. We are fortunate enough to have an international flavour at our Spring Meeting. The title is, "Geographic Information Sciences: Technical Developments and Applications From an International Perspective," and will be co-hosted by our local Rio Grande Chapter of the American Society of Photogrammetry and Remote Sensing (ASPRS). We will have the President (Great Britain), Secretary General (Turkey), and Treasurer (USA) of the International Society of Photogrammetry and Remote Sensing (ISPRS) presenting, as well as the President of ASPRS, and members of our local Rio Grande Chapter of ASPRS. The Spring Meeting is typically our vendor meeting. In keeping with this tradition the Spring Workshop will consist of several vendors presenting the capabilities of their image processing packages. These will include software from ER Mapper, ENVI and ESRI. Agendas and abstracts for both days are available from the NMGIC website (<http://nmgic.unm.edu>), and can also be found within this issue of The Map Legend.

This brings me to the last bit of news. Rick Koehler, along with getting this Map Legend out, has been hard at work on a new version of our website. Not only will this site have a refreshing look and feel but it will also have a lot of new features. Members will be able to update their contact information, Board Members will be able to update content remotely, and the site will also be able to handle electronic balloting for our annual Fall Elections. Rick will be showing this off at the Spring Meeting so don't miss it. Hopefully we won't have to ask Bobby Creel to set up and host our election website anymore. On this note I'd like to take this opportunity to thank Bobby Creel for generously providing this service for us for the last several years, and Rick Koehler for volunteering to tackle Plone and the development of our new site.

Hope to see you on April 27th and 28th and lets all hope for some much needed rain this spring and summer.

Kurt Menke, NMGIC President



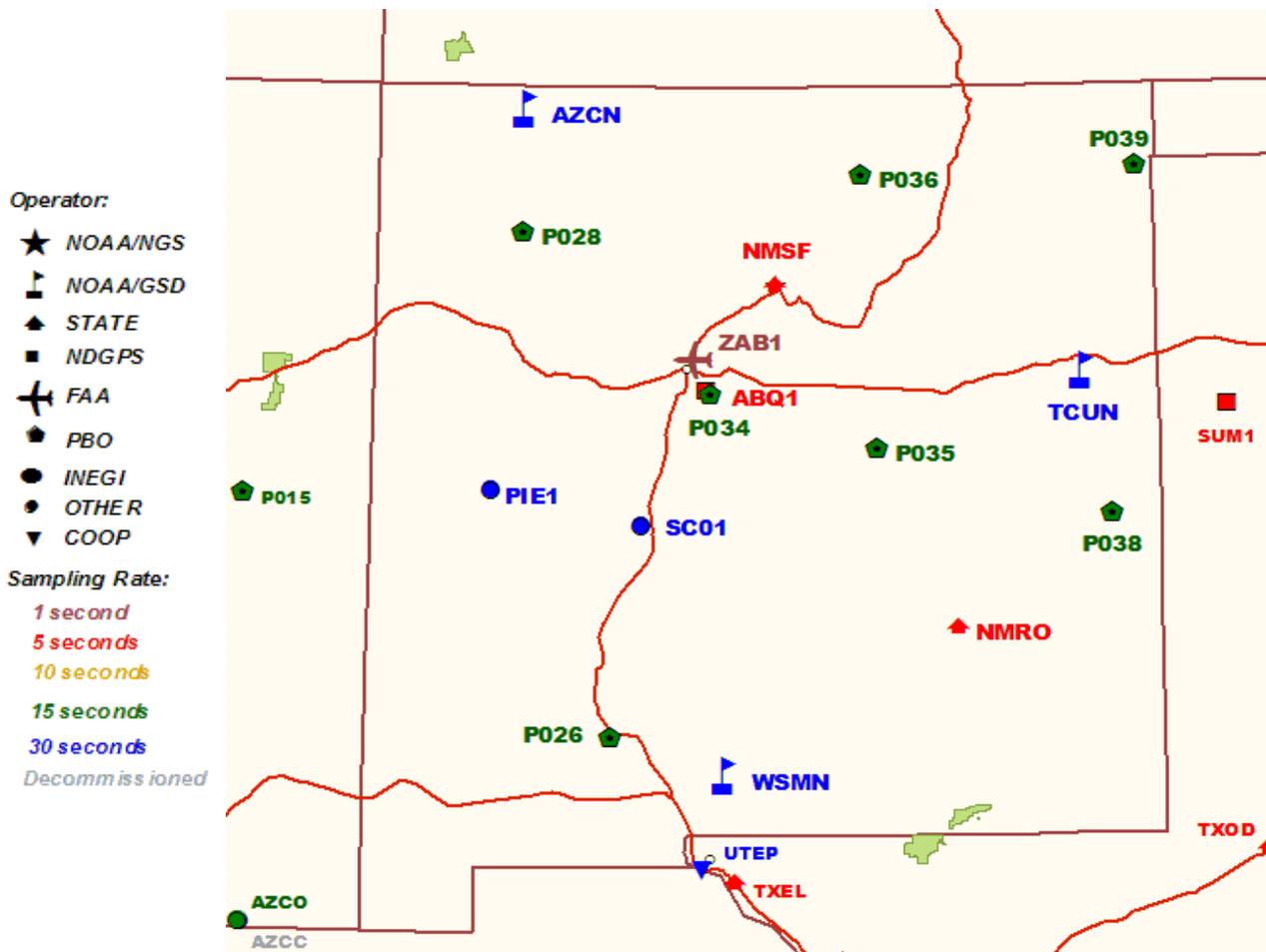
GPS CORS and NAD83 Readjustment

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In the past two decades, we have witnessed the transition from the North American Datum of 1927 (NAD27) to the North American Datum of 1983 (NAD83), as well as refinements of NAD83 in the form of the GPS-derived High Accuracy Reference Network (HARN). As the NAD83 has evolved, the National Geodetic Survey (NGS) has worked cooperatively with a number of other organizations – governmental, private, and academic – on the development of a nationwide network of GPS Continuously Operating Reference Stations (CORS). CORS are permanently installed, survey-grade GPS receivers that continuously collect and record GPS observational data that can then be web-accessed, without charge, for post-processed surveying (centimeter-level) and mapping (decimeter/meter-level) positioning applications. The CORS network represents a modernized realization of the NSRS.

GPS installations that comprise the CORS network are owned and operated by the individual participating entities. For each CORS, NGS provides data access and quality control, coordinate determination, and ancillary information through its website. As of this report (March, 2006) there are nearly 900 CORS stations in the network, with 16 located in New Mexico (see the accompanying map for CORS locations). Additional New Mexico installations (Grants, Milan, Tres Piedras, Clines Corners, Wagon Mound, Sunspot, Deming, and Carlsbad) are currently either in the queue and proceeding through the multi-week process to become a CORS or are

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New Mexico's GPS Continuously Operating Reference Station Network (3/06)

GPS CORS and NAD83 Readjustment

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in the planning stages by the NM Department of Transportation and the University NAVSTAR Consortium/Plate Boundary Observatory. Barring unforeseen complications, a New Mexico CORS network of about two dozen stations will likely be in place by year's end.

The CORS program is a successful cooperative effort involving many organizations, all contributing to the common goal of establishing nationwide GPS reference station coverage for the nation's positioning requirements. Accessing CORS data is easy and I encourage you to consider using CORS data the next time you need to differentially correct your GPS field observations. To access CORS data and to read more about the CORS network, go to www.ngs.noaa.gov/CORS/.

As mentioned above, NAD83 has undergone some refinements in recent years and it is now time for one more. In June, 2005, NGS began working on a nationwide readjustment of NAD83, a process that is targeted for completion on February 10, 2007 - the 200th anniversary of NGS, originally known as the Survey of the Coast. This readjustment will utilize the coordinates of the CORS network stations as the constraints, or fixed coordinate values, that will control the positions of all of the monumented points in the adjustment. The readjustment will be limited to only stations that have been occupied with GPS and included in projects that have been submitted to NGS (via the standard-driven "bluebook" procedure) for inclusion in the national network. Stations that have been positioned solely by conventional surveying techniques will not be included in the readjustment. The anticipated coordinate changes, which are at the few-centimeter level, are so small that they would be insignificant relative to the uncertainty with which most of the conventionally surveyed points have been positioned.

Although the coordinate changes will generally be quite small, three of the most important and desirable results that will emerge from the national readjustment are:

1. there will be consistency in coordinate values when connecting from one state to another (each state's HARN was observed and adjusted individually so there is presently the chance of slight inconsistency in interstate projects) and all coordinate values will be identified as NAD83 (NSRS), thereby doing away with the individual year datum tags that currently exist (e.g. New Mexico uses NAD83 (1992)).
2. the CORS and the monumented network will be brought into agreement with each other. As the NSRS now exists, in some regions, there is a slight (few-centimeter) offset when comparing CORS with HARN coordinate values. Since the CORS will constrain the adjustment and since all monumented points that have been observed with GPS are tied to the CORS, these two NSRS components will be made consistent by the readjustment.
3. both network and local accuracies for all stations participating in the readjustment will be computed. Network accuracy is a measure of how well the coordinates of a point are known, with respect to the datum (as expressed by the CORS network). Local accuracy describes how well the point's coordinates are known relative to other points in the same network. The readjustment will be an important step in the migration from the historical use of relative accuracy statements (e.g. 1:100,000) to an implementation of the recent Federal Geographic Data Committee's Geospatial Positioning Accuracy Standards (e.g. 2-cm local/network).

It is important to point out that the NAD83 readjustment process will not result in a new datum. The datum will still be NAD83, based on the same Geodetic Reference System of 1980 ellipsoid used all along. The same mapping equations, etc. for converting to and from State Plane Coordinate System values will continue to be used. The readjustment will simply result in a fine-tuning (changes of a few centimeters or less) of the coordinate values of points and will make the CORS and monumented point networks consistent with each other. For more information on the readjustment, visit www.ngs.noaa.gov/NationalReadjustment/.

For additional information on the National Geodetic Survey's activities, visit www.ngs.noaa.gov or contact Bill Stone, National Geodetic Survey, 505-277-3622 x252 or william.stone@noaa.gov.

Geographic Names / GNIS Topics

by Bob Julyan, GNIS Committee Chair

AN OFFENSIVE NAME IS REPLACED

Once in a great while a name issue arises wherein the decision has a major and positive impact. Buffalo Soldier Hill was such an issue.

Earlier this year Phillip Shelley, a dean and archaeology professor at Eastern New Mexico University in Portales, submitted a proposal to the US Board on Geographic Names to name a hill Buffalo Soldier Hill, which for more than 100 years had been known as Nigger Hill. The name, which while unofficial nonetheless, had longstanding local usage and appeared on some county maps, was patently offensive and painful to the local Black community.

As I wrote in *The Place Names of New Mexico*: “Known locally as *Nigger Hill* [also *Dead Nigger Hill*], this feature owes its name to the tragic ‘Lost Nigger’ expedition of 1877. In July of that year, Company A of the 10th Cavalry, commanded by Capt. Nicholas Nolan and composed of African-American troops, set out upon the waterless, sun-baked Llano Estacado in pursuit of Indians who had killed a buffalo hunter. They eventually came to this hill, where defeated, exhausted, and wracked by thirst they abandoned their search for the Indians and began a desperate quest for water. Several African-American soldiers died on the expedition, hence the name.”

The renaming issue received extensive coverage in the Portales newspaper, and few people opposed the proposal, at least publicly, though Shelley told me that some local people were very resentful at his proposing to erase what to them had been a longstanding part of their local history. At one time a Nigger Hill School District existed, and some people attended the Nigger Hill School. This is a very common and understandable response and is the main reason Raton still has its “rodent” name, despite attempts to change it to something more appealing, at least to outsiders.

I wrote to the three parties whose land includes the hill. I also wrote to the Roosevelt County Commission and a letter to the newspaper seeking input. One landowner, not wishing to expunge what he regarded as an historical name, recommended simply doing nothing. Otherwise, all the responses supported the proposal. These included Elvis Fleming, noted regional historian who once lived in the area and has written about the Nolan expedition, as well as people from the Cochran County, TX, Historical Commission. They pointed out that the site has significance for the Texas Buffalo Soldier Trail. The Roosevelt County Commission voted unanimously in favor of the proposal.

On a gray, wet day in October month I drove to Portales to see and photograph the hill and talk to people. The hill is conspicuous in being inconspicuous, with not much relief and broad, gentle slopes. Still, this is very flat country—if you stood on a thick phone book you’d double your field of vision—and the hill can be discerned from several miles around, if you’re looking for it. Eventually, the NM Historic Preservation Program plans to erect an historical marker for the hills, and there’s even a discussion about a small Buffalo Soldier memorial park being created near the hill.

The US Board on Geographic Names (USBGN) had placed Buffalo Soldier Hill on its docket for its meeting at the Council of Geographic Names Authorities (COGNA) conference in Portland, OR, in October, and I went to the meeting armed with all kinds of information and arguments in favor of the proposal and even photos, but while the board appreciated the photos—“You say there’s a hill in that picture?”—the rest was unnecessary. The USBGN staff had done an excellent job of summarizing the proposal and as I expected the decision was basically a slam-dunk.

This now means that no name other than Buffalo Soldier Hill may appear on federal maps, and it also

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GNIS Topics continued

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should mean that Blacks in Portales who had been pained by the name Nigger Hill can go to the county offices and ask them to remove the offensive name from their maps, as it has no official standing.

Regarding the pueblo formerly known as San Juan. Several people have asked me what the NMGIC Geographic Names Committee will do regarding the recent move by San Juan Pueblo to begin using its tribal name, O'ke O-weenge, rather than the name San Juan. The answer is: nothing. When a new name or a name change has been adopted through legislative action, it is removed from the purview of the USBGN. That's why the Board can't do anything about changing the name Mount McKinley to Denali, as almost everyone agrees should be done. Years ago a congressional representative from Ohio, McKinley's home state, got passed some legislation specifying that the name remain McKinley—and so it has remained. Bummer.

Moreover, the USBGN now has a policy that names of “populated places” will be regarded as “administrative names,” which also are off-limits for board review. This leaves only three classes of features over which the board has jurisdiction: natural features, canals, and reservoirs.

Native name pronunciations. By the way, if you're concerned that the native name of San Juan Pueblo might be difficult for non-Tewa speakers to pronounce, tough. This issue was raised in Portland regarding several names proposed by Oregon tribes. The spelling of one, Qochyax, was particularly opaque regarding pronunciation (it's pronounced Koke-yah, but you'd never guess that). Other names included Tgawaals and Moo hoo 'oo (it means “owl” and is pronounced so it actually mimics the hooting of an owl).

The dilemma with weird spellings in Indian languages is that English, unlike Spanish, also is a poor guide to pronunciation; consider Bexar in Texas (Bear), Legare in South Carolina (luh-GREE), Peru in Indiana (PEE-roo), and of course Thoreau in New Mexico (tho-ROO). So if Native Americans can learn to deal with our murky spellings, we can learn to deal with theirs.

GNIS—current, comprehensive, and correct. Well, not quite, but those are the goals articulated in Portland by state and federal officials. In fact, GNIS maintenance was the conference's theme. Federal land-management agencies are mandated by law to maintain GNIS in their areas, and the Forest Service gave presentations as to how this is being attempted in several regions. Pete Martinez, with the Southwest Region's office in Albuquerque, described his work toward this goal. But despite the great work he's been doing, he was candid in admitting that GNIS maintenance isn't always a top priority with administrators, so it often gets sandwiched between other projects.

I plan to do at least a copy edit (misspellings, incorrect feature classes, duplicate records, etc.) of the New Mexico file, but I too will be doing this around other projects. You can help by alerting me to any errors and problems you've encountered in your work.

Unique identity IDs of GNIS records. In updating the GNIS database public query form, its designers have made a change of major importance to the GIS community.

As explained by Paul Veisze, member of the California Advisory Board on Geographic Names and with GIS Research for the California Department of Fish and Game, a key issue in relational database management, especially in a multi-user environment, is maintenance of a unique identifier, or primary key. Until recently, that primary key in GNIS, the Feature_ID number, was not accessible to the general public. Now it is.

This means that some situations that formerly were problematic for GIS users now can be resolved. One of these is working with linear features such as, say, the Gila River. It heads in New Mexico, but it flows out of the state, and its primary point, the mouth, is outside the state; retrieving the record by primary point

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Cool Websites - The National Grid

by Denise Bleakly

For this edition of Cool Web sites, I've chosen to focus on information resources concerning the United States National Grid (USNG). I've recently been asked about the USNG from one of my customers, and I couldn't really answer their questions about the use of the USNG, so I did a bit of research and want to share my findings with you. These are culled from a variety of articles, and weblinks. This may not be an exhaustive list and as always, if you have any additions, please feel free to contact me at drbleak@sandia.gov, 505-284-2535.

The best summary of the US National Grid comes from the "The Public XY Mapping Project" (<http://www.xyproject.org/>):

"The US National Grid (USNG) is a non-proprietary, alpha-numeric reference system that is overlaid on the UTM coordinate system, the most commonly used plain coordinate system in the world. The USNG is modeled after the Military Grid Reference System (MGRS), a reference system widely available on GPS and Geographic Information Systems (GIS). The USNG is very easy to read and use.

For example, the spatial address for the Washington Monument in Washington, DC is 18SUJ23480647. Those seeing this spatial address for the first time may question its value. It is not unlike a telephone number or email address though, as a spatial address is a very powerful connecting force. When used with a properly gridded map or GPS receiver it can quickly, easily, and unambiguously help you locate someplace or somebody. An address similar to this might be used by a friend to tell you over a cellular telephone where to meet them. With this simple address you could use a GPS receiver to act as your associate navigator along with a properly gridded paper map or digital moving map display to guide you to their exact location. Our communities will find spatial addresses have many uses and applications as part of the NSDI. You might be asking why not use latitude and longitude? Lat/long is certainly available in GPS receivers, but experience has shown for spatial addressing applications, lat/long is too complicated for most of us. A plain coordinate system like the UTM or USNG is much easier to use with large-scale maps, such as a US Geological Survey topographic map or city street map. "

So, here's a list of some good places to begin your search for information on the National Grid ...

- A very good summary of the National Grid, its origins and uses: The July-September 2005 Issue of ArcUser Magazine: <http://www.esri.com/news/arcuser/0705/usng1of2.html>
- Federal Geographic Data Committee (FGDC) US National Grid Homepage: <http://www.fgdc.gov/usng/index.html>
- FGDC US National Grid standard (FGDC-STD-011-2001): <http://www.fgdc.gov/standards/status/usng.html>
- Learn how to read a USNG coordinate or geocode: <http://www.xyproject.org/How%20To%20Read%20USNG/How%20to%20read%20USNG.htm>
- George Mason University : National Information and Support Center for Geoaddressing: <http://usgrid.gmu.edu/>
- The US National Grid Conversion tool from NOAA : <http://www.ngs.noaa.gov/TOOLS/usng.html>
- A URISA article giving many examples of how to read the USNG: http://www.urisa.org/Street_Smart_Conference/2003/USNG_HowtoRead_Providence_V5.PDF

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Cool Websites - The National Grid continued

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- An article in Fire Chief magazine, "Get on the National Grid": <http://firechief.com/news/national-grid-usng8376/>
- An article, in Professional Surveyor "Geoaddress: Where is it?": http://www.fgdc.gov/usng/20041101_ProSurv_Art2_NGT.pdf

Compiled by Denise Bleakly, March 2006

GNIS Topics continued

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can be difficult unless you know the GNIS conventions regarding primary points. Now all locations along the river are tied together via the primary key, or feature ID.

Similar is the issue of features, such as the Mojave Desert, that also span numerous maps and even several states. The Feature_ID, the unique identifier, now ties together all these disparate coordinates and map names. (Incidentally, GNIS has converted its locations from NAD 27 to NAD 83, so it is conceivable that a feature lying near the boundary of a map - or "cell" in GIS terminology - will fall in a different cell than previously.)

And finally, making unique feature IDs available to the public also helps resolve the problem of duplicate records, many of which exist in the New Mexico GNIS file. By using the ID as the primary key rather than the name or the location, only one record will be referenced, rather than two or even three, all referring to the same feature. "Now, coupling of the feature and the ID always takes you to the same place," said Veisze. "The GNIS query page is way up from what it used to be."

Elevations and GNIS. Formerly, elevations were available in GNIS for only two feature classes: populated places and summits. Now, however, through a linkage with the National Elevation Dataset, elevations are shown for every feature. Still, these elevations are not "official"; GNIS is official for only two things: a feature's name and its location.

Also, GNIS has a new and improved online query page, which in addition to allowing access to GNIS records (all two million of them) makes available USBGN decisions and *Principles, Policies, and Procedures*, the USBGN operating manual. It's more interesting than it sounds. And through TopZone, you can view a USGS 24-minute topographic map showing the feature.

A familiar face. Bob Bewley, former NMGIC board member and GIS honcho for the BLM in New Mexico until his promotion to the Washington, DC, office, is now the BLM's representative to the USBGN. He attended the COGNA in Portland and was present at US board's formal meeting there. It was great to see him again.

Bob Julyan, Chair, NMGIC Geographic Names Committee

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2006 GIS Calendar of Events

ESRI

ESRI 26th International User Conference, August 7th - 11th, 2006,
San Diego, California, USA

SWUG

SouthWest User Group Conference 2006, October 14th - 18th, 2006,
Flagstaff, Arizona, USA

GITA

GITA's Annual Conference 29, April 23rd - 26th, 2006, Tampa, Florida
USA

ASPRS

ASPRS Annual Conference, May 1st - 5th, 2006, Reno, Nevada, USA

NSGIC

National States Geographic Information Council 2006 Annual Conference,
October 1st - 5th, 2006, Little Rock, Arkansas, USA

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