



SWUG 2012 Meeting

On October 8 – 11, 2012, New Mexico played host to the **Southwest User's Group** (SWUG) conference. SWUG is a group of geospatial technology users from a five-state area (New Mexico, Wyoming, Colorado, Utah and Arizona) that meet annually to learn more about new developments in GIS use and innovations, focusing on Esri technology, but also covering the broad spectrum of geospatial analysis, geodesy, and remote sensing. The meeting rotates from state to state every year in the order listed.

(continued page 3)

GIS Day Lightning Talks

Nov 14, 11-12:30 pm MST. Staff from INTERA will present 10 *5-minute* talks on the various ways we use GIS in our work. Topics include data analysis, modeling, software extensions, and custom application development.

<https://www4.gotomeeting.com/join/806940951>

Inside this issue:

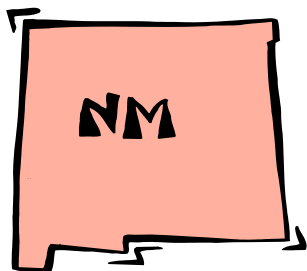
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The Map Legend

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

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NMGIC was proud to be a silver-level sponsor of the event, donating \$2,000. The event slogan was “Flying High and Bridging Divides”, and the logo and timing of SWUG coincided with the Albuquerque Balloon Fiesta. NMGIC board president Leland Pierce led off with a discussion of the importance of regional events like SWUG and was followed by New Mexico Cabinet Secretary and Chief Information Officer, Darrel Ackley, who welcomed everyone to Albuquerque. Esri provided a vision for the future of geospatial technology. Monica Smith of the US Census Bureau discussed their national mapping efforts and a panel of leaders from the five states discussed coordination of geospatial efforts in their respective state governments.

After that followed two full day’s worth of presentations, everything from parcel mapping to wildlife conservation, with three sessions going continuously. In addition, on the 8th, a full day of workshops were offered, from one by Don Padilla at NM Dept. of Transportation to how to employ Amazon.com cloud services to a variety of Esri workshops. Esri also offered their “hand’s on” lab throughout the conference. NMGIC members who attended the Spring 2012 conference will remember the 3D presentation by NMGIC board member Dan Paulsen of Wilson and Company; he and Dennis Szarka of Bohannon Huston, Inc., teamed up for wonderful workshops and talks on the same topic at SWUG.

Esri, a platinum sponsor, was also a sponsor of a sumptuous exhibitor’s social. Great food and great conversation were had by all, and everyone had the opportunity to tour booths of the more than 15 sponsors (including NMGIC). Later a few folks had a ball rolling them down the lane at the Lucky 66 Bowling Alley, courtesy of Bill Timmins of GIS Services. On the last day SWUG participants had



the opportunity to travel in swanky vehicles to go on tours of Blue Skies down in Belen, the Bosque, and Sandia Laboratories to learn how geospatial technology is being used in the state. *And*, to wrap it up, SWUG participants were able to attend the “Glowdeo” at the Balloon Fiesta; although winds kept the balloons down, everyone had a great time nevertheless.

Mark your calendars down for September 16 – 19 to attend SWUG up in Laramie, WY and keep your eyes out for more announcements. The event is going to be (continued on page 10)



Greetings,

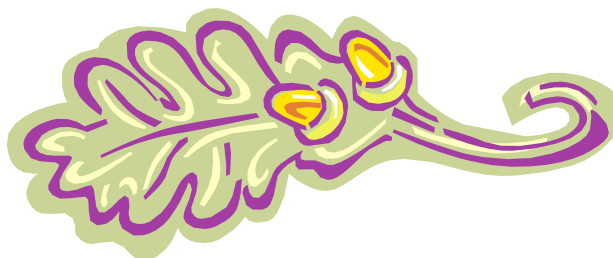
As we bring 2012 to a close, it is a time of change. Several years back a long-time board member, Kurt Menke, stepped away, and last year another, Rick Koehler, decided not to run again. And now, as unbelievable as it may seem, our two longest-running members, Rich Friedman, City of Farmington, and Amy Budge, Earth Data Analysis Center, are moving on. I'm sure we'll give them a proper send off at the spring meeting next year, but I personally want to thank Rich and Amy for their time and their camaraderie. They represent, to me, everything good about public service. I wish them all the best and thank them for their time and energy.

Rich and Amy were involved in the big event this fall, which was, of course, the Southwest User's Group conference, held at the Hyatt Regency in Albuquerque on October 8 – 11. If you didn't get a chance to attend, we have a summary later in this issue. As a co-chair of this event, along with the aforementioned Rick Koehler, I humbly submit that SWUG 2012 was a smashing success and thanks to all who attended, sponsored, and put on the show.

The NMGIC board will be meeting in December to discuss the future and to prepare for 2013. Next year we will be welcoming two new board members, Kerri Mich, USDA NRCS, and Kurt Wurm, NMSU. The beat goes on. Thanks for a great 2012 and we look forward to seeing you at the spring meeting next year.

Take care,

Leland Pierce,



NMGIC Election Results

2012 NMGIC Board of Directors election. There were five positions open this year. The top five were (in alphabetical order):

Jason Fink
Laura Gleasner
David Jordan
Kerri Mich
Kurt Wurm

We had 57 current members participate in the vote. For comparison, we had 53 in 2011 and 74 in 2010 (according to Rick Kohler who set up the Survey Monkey poll again this year).

The Elections Committee consisted of April Molina, Kurt Menke, and John Peterson. They independently verified the final results.

Kenny Calhoun—*Election Coordinator*



Services

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- Custom GIS application development
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505-353-9076

2012 Data Users Conference

Kevin Kagacin – Bureau of Business and Economic Research, UNM

The 14th annual New Mexico Data Users Conference will be held on Thursday, November 15th, starting 7:45 a.m. at the University of New Mexico Continuing Education Conference Center, 1634 University Blvd. NE. Registration will be located near Ballroom C. The annual event is presented by UNM's Bureau of Business and Economic Research (BBER).

Speakers are from the U.S. Census Bureau, NM Dept. of Workforce Solutions (NMDWS), Mid-Region Council of Governments (MRCOG), NM Voices for Children, and two UNM groups – Geospatial and Population Studies (GPS) and BBER.

The conference has a plenary session, nine breakout sessions and luncheon presentations. Plenary sessions will include a discussion of the upcoming 2012 Economic Census, recent and upcoming Census Bureau product releases, and SHARE New Mexico—a collaborative web site that provides socioeconomic data, organizational information on service providers and funders, and a digital library of studies relevant to community development.

Breakout sessions include a presentation on the basics of the Census Bureau's American Community Survey, the 2010 Census and an overview of data access through the American FactFinder (AFF) web site. Another session will cover advanced features of AFF. There will also be presentations on Colonia population estimation and spatial regression modeling for elementary school student performance, both applications of GIS/geographic-based data. Additional sessions will cover Census Bureau economic statistics, the KIDS COUNT Data Center web site, online economic indicators from the Bureau of Economic Analysis, interactive labor market data on the NMDWS LASER web site, and a presentation by MRCOG speakers on a strategy to address future congestion in the ABQ area that integrates land use plans with transportation plans.

Dr. Jeff Mitchell (BBER) and Dr. Jack Baker (GPS) will be the luncheon speakers. Jeff will present a review of New Mexico's recent economic performance and a short-term economic outlook. Jack will present the *(continued next page)*



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2012 Data Users Conference (continued)

expanded scope of GPS population estimates, including new census tract estimates, and related methodological research and database development.

The conference will provide information about complex socioeconomic databases and a sense of how these data are applied in practical situations. Over the years, the Data Users Conference has become a valued learning experience for businesses, government agencies, service organizations, information providers, and students.

Registration is \$55 per person and includes all conference materials, continental breakfast, beverage breaks and a luncheon buffet.

Registration: <http://bber.unm.edu/conference.htm>

Contacts: Karma Shore (505) 277-8300; e-mail address kshore@unm.edu

Kevin Kargacin (505) 277-3038; e-mail address kargacin@unm.edu

Need Data?

RGIS (Resource Geographic Information System)

The Earth Data Analysis Center (EDAC) has been administering the Resource **Geographic Information System (RGIS), New Mexico's Geospatial Data Clearinghouse**, for over 20 years. Last year, RGIS provided over 40 Terabytes of data to State, County, Municipal, Town, Commercial, Federal, and Public interests that support hundreds of projects. So, if you need New Mexico Geospatial Data, contact RGIS.

Contact: Laura Gleasner

Email: lgleasner@edac.unm.edu

Voice: 505.277-3622 Ext 230

RGIS Website: <http://rgis.unm.edu/>

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ESRI AWARD

Trust for Public Land: Breece Robertson, TPL

Our own New Mexican GeoMaven, Breece Robertson, got up in front of a daunting international crowd of 15,000 worshipers to accept The Esri Making a Difference Award that honored the work of The Trust for Public Land. Breece, the trust's director of conservation vision, and Will Rogers, chief executive office accepted the award from Jack Dangermond.

The award is given to an organization that has used GIS to bring about meaningful change in the world. For more than a decade, The Trust for Public Land has enhanced its conservation real estate expertise with Greenprinting, a community-driven GIS planning service.

Greenprinting provides a framework for communities to prioritize their parks and conservation goals and implement funding and land protection strategies. Using GIS in a transparent mapping and modeling process, The Trust for Public Land has used Greenprinting to engage local residents in a thoughtful, place-based planning exercise. In 2012, The Trust for Public Land launched its ParkScore™ project, the most comprehensive rating system ever developed to measure how well the 40 largest U.S. cities are meeting the need for parks. Using an advanced GIS model, ParkScore provides in-depth data to guide local park improvement efforts. ParkScore is online at parkscore.tpl.org and the web-based resource features U.S. demographic data provided by Esri.

<http://blogs.esri.com/esri/ucinsider/2012/07/23/esri-awards-for-2012-recognize-excellence/>

ParkScore: <http://parkscore.tpl.org/>

TPL's Conservation Vision: <http://www.tpl.org/what-we-do/services/conservation-vision/>



Grant Opportunity

FGDC CAP Grant

The 2013 FGDC (Federal Geographic Data Committee) CAP (Cooperative Agreements Program) Grant Categories have been announced. Many of us have used these grants in New Mexico for data and program development. In fact, one of these \$50K Grants was what New Mexico used to create our Geospatial Strategic Plan. Regardless, the categories include meta-data training, geospatial strategic planning for tribes, geospatial platform collaborative group, and the usual business plan category.

To take a look at the schedule, categories, and requirements hit on:

<http://www.fgdc.gov/grants/2013CAP/2013CAPDescriptions>

Contact: Leland Pierce

Email: Leland.pierce@state.nm.us



Aerial Data Acquisition for Photogrammetry, Remote Sensing, and GIS

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changing in structure toward a more vendor-neutral conference, and a committee to keep SWUG (or whatever it will be called in the future) will be looking for help.

Folks bowling at the Lucky 66: Jeremiah Lindeman, Esri, former NMGIC board member Larry Layne, and current NMGIC treasurer, Amy Budge. Photograph by Leland Pierce



Gar Clarke, NM DoIT, and Natalie Runyan, INTERA, Inc, eat it up at the Glowdeo.

Photograph by Leland Pierce

Great night at the Exhibitor's Social.

Photograph by Leland Pierce



Swanky Ride to Tech Tour down at Blue Skies

Photograph by Laura Gleasner

NSGIC Update—Leland J. S. Pierce, NSGIC Board

National States Geographic Information Council

NSGIC held its annual conference in Orlando, FL, from September 8-13; Leland Pierce attended. Important issues discussed were FirstNet, a broadband/emergency response system and Map 21, whereupon US DOT will be using state DOT data to build a nationwide roads layer. For more on both initiatives, contact Gar Clarke at George.clarke@state.nm.us.

NSGIC continues to push for a national addressing dataset, and is exploring where GIT fits into state IT infrastructure and the pros and cons of buy-back billing between state agencies for GIT services. The organization is also in discussion with federal and state agencies about improving upon the use of GIT data during events such as the recent storm "Sandy" that recently hit the east coast of the United States. NSGIC is scheduled to hold its federal-oriented mid-year meeting in **Annapolis, MD on February 24 - 27, 2013**. Lastly, the "do-everything" Washington DC liaison for NSGIC, Bill Burgess, has announced his retirement as of November 2013 and the leadership of NSGIC is working to fill his (very big) shoes.

For more information on NSGIC,
visit: <http://www.nsgic.org>



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Careers in GIS: an unfiltered guide to finding a GIS job:

http://www.careersingis.com/?goback=.gde_840677_member_170402607

MIDDLE RIO GRANDE CONSERVATION INITIATIVE – A Citizens Report: Matt Dorsey, US Bureau of Reclamation

Middle Rio Grande Conservation Initiative Report that was presented to the DOI Secretary, Ken Salazar during his visit to Albuquerque on 12 July. The report includes some wonderful maps around page 100 that support recommendations to enhance conservation, recreation, and education in the Middle Rio Grande. The “flattened” version of the report can be found at:

<http://www.mrgesa.com/LinkClick.aspx?fileticket=zWjw3lgpeyE%3d&tabid=488&mid=1401>

Open Government— and transparency

Article: <http://www.whitehouse.gov/blog/2011/12/05/datagov-goes-global>

Open Source Product: <http://www.data.gov/opengovplatform>

Project: <http://www.opengovplatform.org>

Product download: <https://github.com/opengovplatform/opengovplatform>



Geocortex Users Group (GUG)

Does your organization use Geocortex? Would you like to meet other Geocortex users to share ideas and learn new tricks? We are exploring the possibility of creating GUG as a resource open to any agency interested.

contact **Michael Rock**, City of Albuquerque, at mrock@cabq.gov.

RGIS Update—Data and Services

Mike Inglis, RGIS Director and EDAC Associate Director
RGIS annual metrics report has been submitted and the Program was informed that annual funding requests are to remain at the present level.

The following files have been added to the RGIS Clearinghouse:

US Forest Service Region 3 Wilderness Areas
NM Grant Lands Index First Division
NM Grant Lands Index Second Division
All 33 NM County Landsat Satellite Mosaics, 2011
NAIP 2011 quarter quad index

The following WMS Services are running:

New link - http://edacarc10.unm.edu/ArcGIS/rest/services/RGIS_WMS_Services

1. Historical Aerial Photos Pre1941_Coverage
2. Historical Aerial Photos Pre1941_Index
3. Hydrologic Unit Code (HUC)_12
4. Hydrologic Unit Code (HUC)_8
5. Land Ownership
6. Land Ownership No Labels
7. New Mexico PLSS
8. New Mexico **7.5' Quad Grid**
9. New Mexico Major Roads





Geospatial Solutions for Managing Environmental and Water Resources

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6000 Uptown Blvd NE, Suite 220
Albuquerque, NM 87110
Contact: David Jordan
505.246.1500 x1240
djordan@intera.com



INTERA has an existing Geographic Information Technology (GIT) Services contract with the State of New Mexico (Price Agreement # 10-005-00-00051BT)

Please submit information about a project, technique, GIS and related issues, announcements, or news that you would like published in the Map Legend!

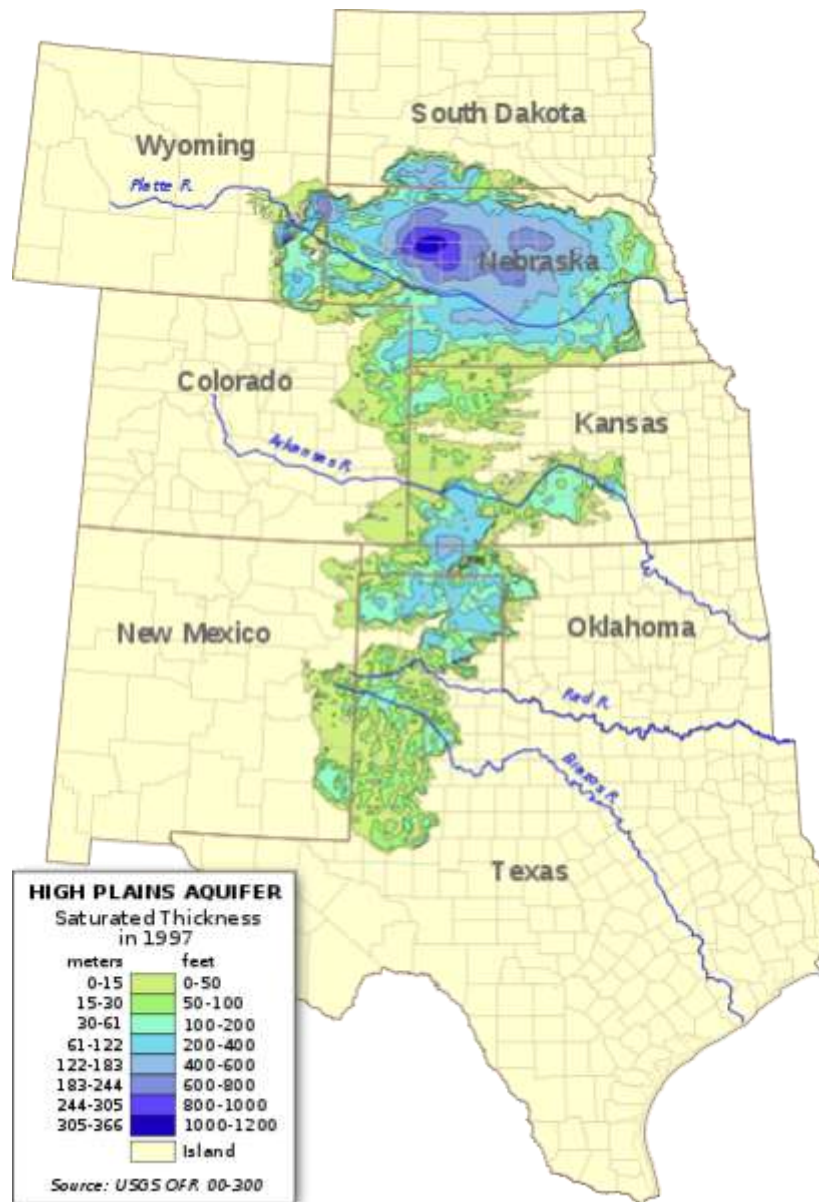


**Don't Forget to pay your
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**The membership form can be
found on our website**

*[http://nmgic.com/
membform.html](http://nmgic.com/membform.html)*

The High Plains Underground Water Conservation District (District) is the oldest and largest water conservation district in Texas, covering a 16-county region in the panhandle of Texas in the vicinity of Lubbock. The District includes 8 million acres and contains over 80,000 permitted irrigation wells pumping from the Ogallala aquifer. The Ogallala, or High Plains, aquifer underlies portions of eight states, and is an important source of water for irrigation in the Western United States. Much of the water present in the Ogallala was emplaced there after the last ice age during recession of the glaciers, and thus water is being removed from the aquifer at a much higher rate than it is being replenished. Due to this overdraft, water levels in the Ogallala have been dropping steadily over the past few decades. The District is currently seeking to control the rate of water-level decline within their boundaries, with the goal of extending the useful lifespan of the aquifer as much as possible.



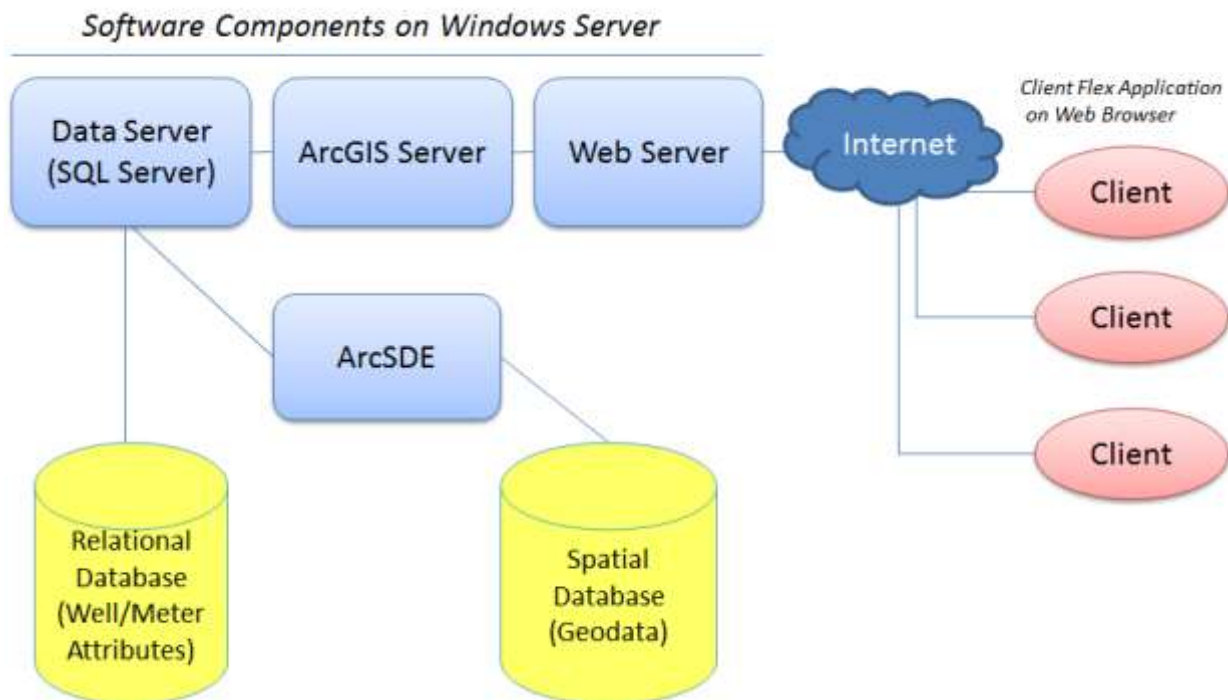
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Web Mapping For Water Conservation

Since the District oversees water use from the Ogallala Aquifer, and is seeking to extend the usable lifespan of the aquifer, it has developed a “50/50 Management Plan”, with the objective of having 50 percent of the saturated thickness of the Ogallala Aquifer as of January 1, 2010 available for use in 50 years. To facilitate this, new rules were recently implemented requiring that agricultural water use be metered, so that the District can limit irrigation water application rates to help the meet its 50/50 Management Plan. Farmers will be required to report their water usage via metering, as well as the amount of land that is being irrigated, so that the District can calculate the amount of water that is being applied on a per-irrigated-acre basis. Gathering this water-use data from farmers on a volunteer basis proved to be a significant challenge to the District.

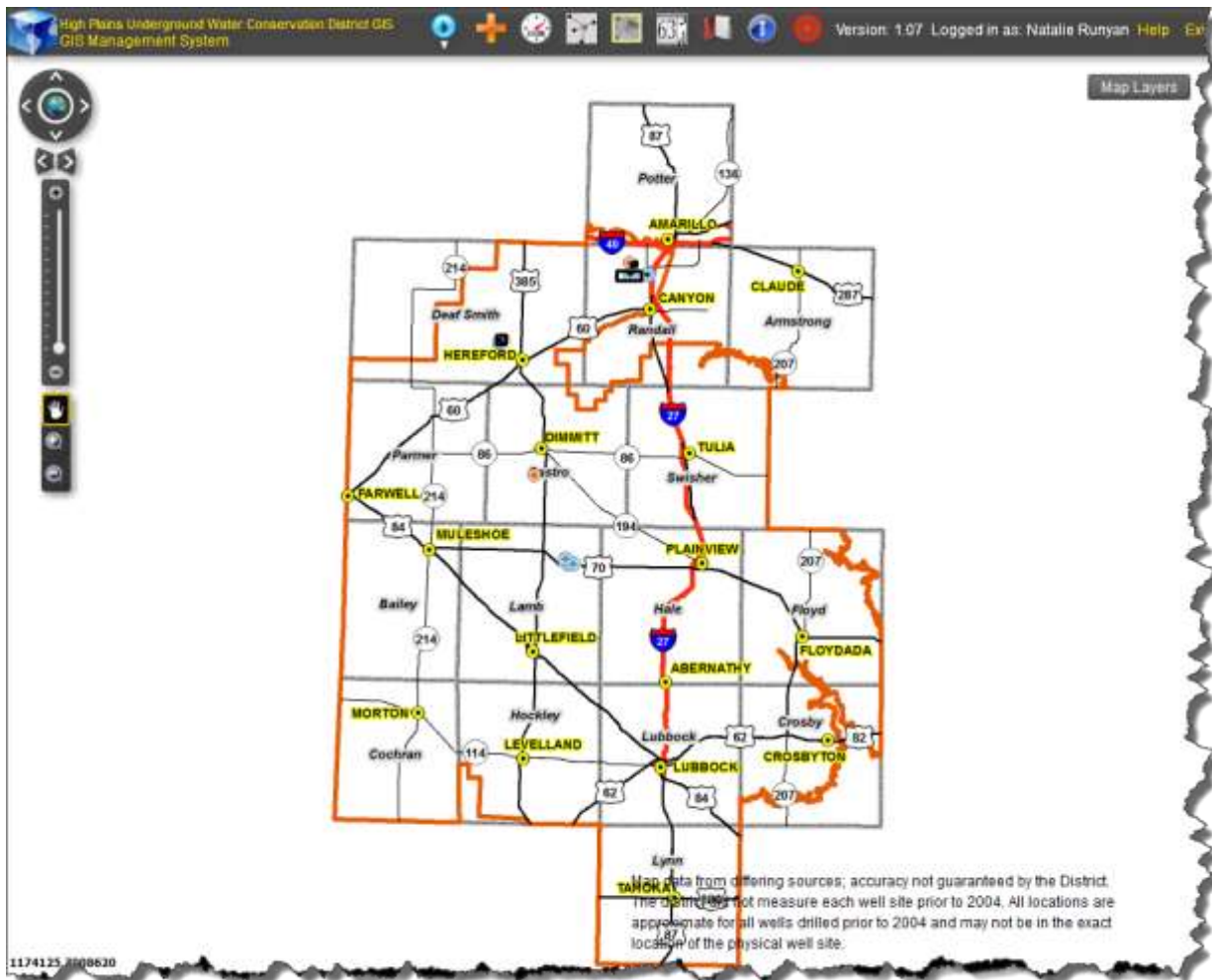
To that end, on behalf of the District, INTERA has developed an ArcGIS Server/FlexViewer-based system that allows users to interactively map and report their water meters in association with land ownership and permitted wells to calculate annual water production allowances. The web interface allows rapid and efficient reporting of production parameters by the water users directly into the GIS, which is validated by the District’s GIS staff and further analyzed and reported to ensure that the District is meeting its 50/50 management goal. The application allows user mapping of meter locations, well locations (that are not already in the District’s database), and irrigated areas. The District elected to develop an online system because it allowed input of accurate initial locations for meters, users have real-time access to well, meter, and irrigated area mapping information, and the geodatabase simplifies field validation workflows and future data analysis.

The application environment included ArcGIS Server Advanced Enterprise .NET Edition, ArcSDE, and Microsoft SQL Server running on an Amazon cloud EC2 large instance. The mapping application was built using Flex and included help documentation using both HTML and Flash videos.



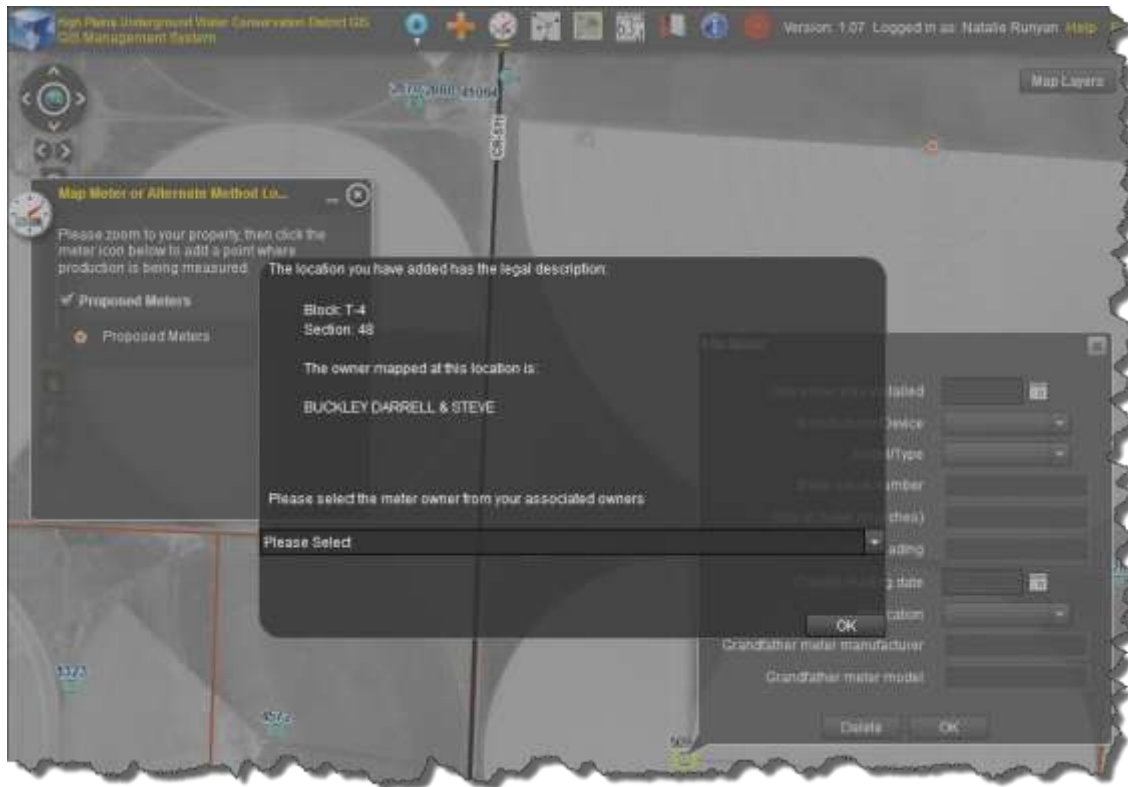
The user interface allows users to create an account with a username and password, associate property ownership with the account, implement role-based features (owner, meter installer, farm manager), map a meter and report production, and map irrigated areas. The user is also able to associate meters with wells, add missing or mis-located wells, report annual water usage, and calculate any unused water for the year that can be banked and used in a future year.

The application itself allows standard map functionality (pan, zoom, etc.), and includes a number of custom tools developed for this application.



Web Mapping For Water Conservation— Continued

Below is shown a view of the map zoomed in to show property boundaries and individual irrigated fields. The user is able to select their property or properties, and associate those with their irrigated areas. Below is shown the user tool for mapping a meter. The meter is interactively located using the map.



Next the user associates wells with the meters. The purpose of the meter is to measure the amount of water being produced from the irrigation wells associated with it.



Web Mapping For Water Conservation

Wells that are associated with a meter are shown graphically. Once a meter has been placed and irrigation wells have been associated with it, the user can then associate the meter with an irrigated area.





Scott Verhines, State Engineer



Nabil Shafike

Denise Bleakly receives the Wheeler Peak Lifetime Achievement Award. Pictured with Amy Budge, 2009 winner



Larry Brotman and Larry Rose accept the 2012 NMGIC "Christmas" Chile Outstanding Service Award. Gathen Garcia supported their efforts.

NMGIC Spring Meeting 2012

Michael Camponovo, a SWUG Scholarship awardee.



Renne Martinez

Gary Kress announces his retirement from the USGS, and receives a bottle of fine wine from Mike Ingles. Leland Pierce, center, attempts to intercept!



An enthralled audience wears 3d glasses for a special screening of "It Came From the Cochiti Reservoir" by [Wilson and Company](#)

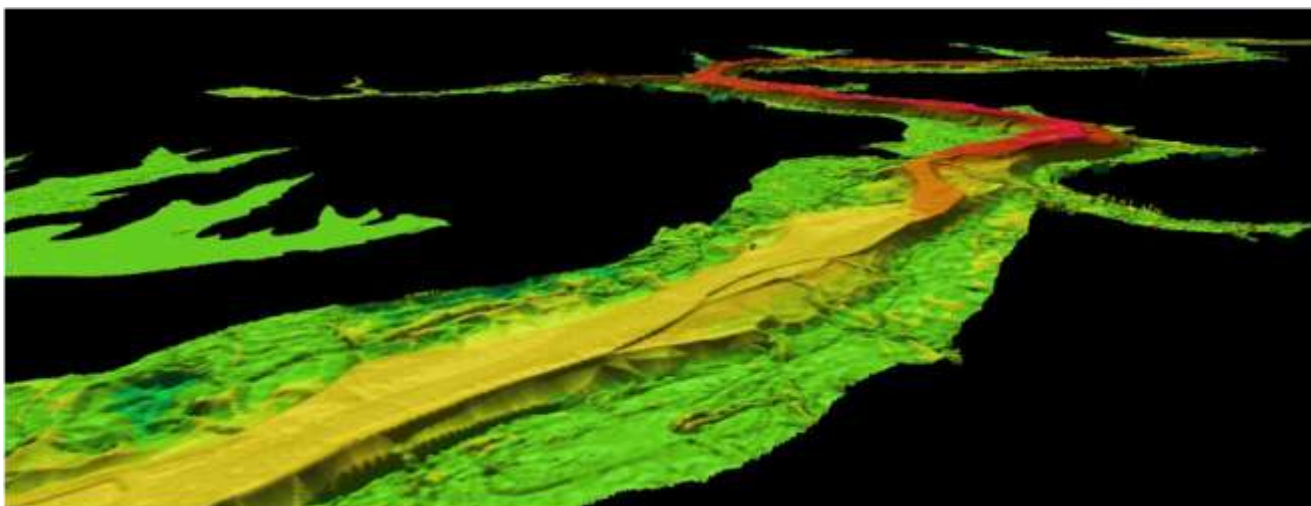


The **Albuquerque District of the US Army Corps of Engineers** is conducting an ongoing study of sediment accumulation within Cochiti Reservoir and upstream within the Rio Grande channel. **Wilson & Company** has been contracted by the Corps of Engineers to collect new aerial mapping data, and to compile existing multi-temporal and multi-sensor geospatial data into a comprehensive geodatabase. The geospatial data spans the time period from 1963 to 2012; and utilizes data collected from field survey, aerial photogrammetry, sonar bathymetry, and aerial LiDAR. In 2012, the Corps of Engineers contracted **Tetra Tech** to perform a new sonar bathymetric survey of Cochiti Reservoir; and **Wolf Engineering** to perform a new field survey of range lines upstream along the Rio Grande within White Rock Canyon. This new data will help quantify the effect of the 2011 Las Conchas wildfire on erosion and sediment deposition.

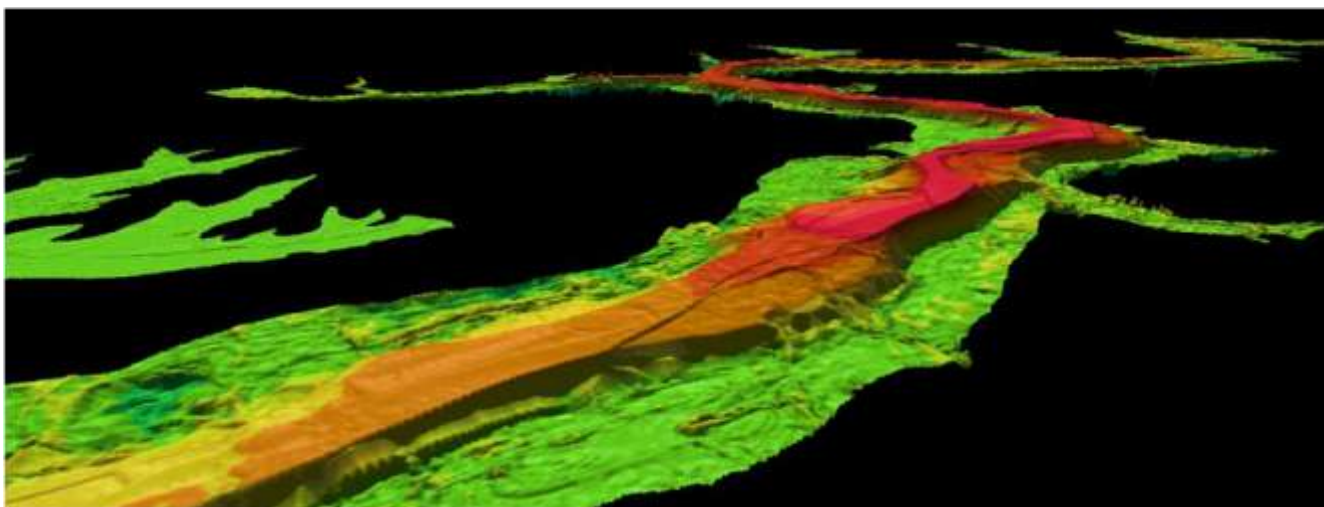
All of this data is being integrated into composite DTMs that span different segments of time; referred to as EPOCH's. The Corps of Engineers will compare the different EPOCH's to yield analysis of sediment volume and distribution within the study area over time. Various GIS and hydrologic modeling software applications are being used for this analysis. This data and analysis will provide valuable geospatial information to the Corps of Engineers for management of Cochiti Dam and Reservoir; and to **Pueblo de Cochiti** and **Van Citters Historic Preservation** for long term ecological studies.



2005 RGB Imagery



2004 Composite DTM minus 1963 Composite DTM



2012 Composite DTM minus 1963 Composite DTM

Albuquerque District of the US Army Corps of Engineers

<http://www.spa.usace.army.mil/>

Wilson & Company <http://www.wilsonco.com/>

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From Editors Desk

Greetings NMGIC Readers,

Just a short note upon completion of another issue. Many thanks to our contributors, who made this issue blossom with content, just when I thought we were going to press with nothing but an event listing and a title page. I am dependant on the GIS community to provide interesting projects to report, and folks came through again. Remember, it is not **to early to start thinking about an article for the next issue, which should begin preparations in early spring. Keep `em coming!**

This issue is the first that was prepared at home on a tiny laptop, instead of a pair of 21" monitors, and it makes a big difference! Despite many revisions, I have probably missed a few key details, but lots of effort was spent trying to keep things correct, readable, and aesthetically pleasing. Suggestions and corrections are always welcome.

Many Thanks,

Jason Fink

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Membership fee \$30
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<http://nmgic.com/membform>

2012-2013 GIS Calendar of Events

GIS Day

GIS Day , November 14th, 2012, “everywhere”

NSGIC

2013 Midyear Conference, Feb 24-27 2013, in Annapolis, Md.

ASPRS

2013 Annual Conference March 24-28 2013, in Baltimore Md.

GITA

GIS for Oil and Gas Conference, October 28-30 2013, Houston Tx.

NMGIC

Spring 2013 Workshop/Meeting, Date and Location to be determined.

ESRI

International User Conference, July 8-12 2013, in San Diego, California.

Attention Students in GIT Classes...

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