

G-MAP BECOMES REALITY
PAGE 2



ARMA BETA TESTS G-MAP
PAGE 3

**MIDLAND GIS: KMEA
G-MAP PARTNER**
PAGE 4

**MUTUAL AID RESPONDS
IN WASHINGTON**
PAGE 4

**GAS AGENCY SPOTS
OPPORTUNITIES**
PAGE 5

NEWS BRIEFS
PAGE 5

STAYING CURRENT

Oct. 8 KMEA/StressCrete Golf Tournament, Turkey Creek Golf Course

Oct. 14 Executive Committee meeting, Salina Country Club

Oct. 20 EMP No. 1 meeting, KMEA office

Oct. 22 EMP No. 2 meeting, Russell

Oct. 23 G-MAP Committee meeting, KMEA office

Nov. 3-4 Annual Meeting of the Member Cities, Wichita Marriott

Nov. 17 EMP No. 1 meeting, KMEA office

Calendar continued on page 6

Annual Meeting to feature G-MAP, Smart Grid, wind generation presentations

This year's KMEA Annual Meeting of the Member Cities, Nov. 3-4 at the Wichita Marriott, will feature not only the usual business meetings, entertainment and networking, but also some meaty presentations about key current issues.

The regular KMEA and KMGA Board of Directors meetings on Tuesday will be followed by a panel discussion about the effects of wind generation on Kansas municipals. Panelists will include Susan Cunningham of Sonnenschein, Nath and Rosenthal; Bob Johnson, Executive Manager, Engineering and Energy Services for Sunflower Electric Power Corporation; and Dave Howard, Pratt City Manager.

The 2009 Gil Hanson Award will be presented during the Tuesday evening dinner, after which attendees will be entertained by the M&M Sisters from Smith Center, who have delighted audiences across Kansas and Nebraska with their quirky southern characters, Mini Pearl and Cousin Urlean.

On Wednesday morning, the KMEA G-MAP committee will provide an update on the progress of the much-anticipated G-MAP program, especially the beta test that recently concluded in the city of Arma. (Read more about the Arma beta test on page 3.)

Also on Wednesday, Ted Kelly, Principal, Burns & McDonnell Business and Technology Services, will present the most current information on Smart Grid, which uses digital technology to merge information and operations to deliver electricity from suppliers to consumers,



This year's Annual Meeting will feature an update from the G-MAP Committee, which is working to bring member cities digital mapping for their electrical utilities.

saving energy, reducing costs and increasing reliability and transparency.

For this year's meeting we're pleased to have eleven sponsors, all of whom have developed solid working relationships with KMEA over a period of time. Platinum Level Sponsors are Alliance Agency, Inc. and MCG (Minnesota Consulting Group). Gold Level Sponsors are Midland GIS Solutions and Sega, Inc. Silver Level Sponsors include Gilmore and Bell; Lutz, Daily & Brain, LLC; Mid-States Energy Works, Inc.; Midwest Energy, Inc.; Ranson Financial Consultants, LLC; Sawvel and Associates, Inc.; Sunflower Electric Power Corporation; and Westar Energy.

For more information about attending or sponsoring the KMEA Annual Meeting, go to www.kmea.com and click on "Annual Meeting" or call Lee Olmstead at (913) 677-2884.

G-MAP program becomes a reality for KMEA cities

After nine months of intensive work in plotting a GIS program for member cities, KMEA's nine-member G-MAP committee announced its first participating city.

In August, the City of Arma agreed to beta test the new G-MAP system, which locates and records and maps components of a community's electrical system in digital format. Knowing exactly where transformers and poles are located is helpful in day-to-day operations, but it's crucial when a city is confronted with power emergencies that may have moved or destroyed those components. And, it increases safety and efficiency for KMEA Mutual Aid crews that assist their neighbors in such situations.

"Sometimes there's so much destruction that workers don't know where to start to assess the damage and rebuild the system," explained Steve McGie, Interconnected Operations Manager, Coffeyville, and G-MAP committee member. "With the G-MAP sys-

tem in place, we can give Mutual Aid coordinators and responders maps that provide the exact location of power components before the emergency occurred."

Utilizing the services of Midland GIS Solutions, the G-MAP program will create a uniform, Agency-wide Geographic Information System (GIS) platform and allow inter-

maps or the memory of staff members."

Located in Maryville, Mo., Midland GIS Solutions is one of the largest, most qualified and diverse GIS development firms in the Midwest, offering a wide range of services to counties, municipalities, utility companies and private organizations. Midland has completed more than 35 countywide conversions from paper parcel tax maps to GIS and helped numerous utilities become more efficient.

Midland Business Developer Tim Taylor,



KMEA's new G-MAP program—designed to enhance electric system efficiency, planning and emergency response—enlists the services of Midland GIS Solutions technicians to locate and map system components for participating cities.



ested member cities to adopt the technology, at a significantly reduced cost, to better oversee their electrical systems. GIS, a technology Midland uses extensively to help local governments manage utilities, integrates hardware, software and data to manage, analyze and display geographically referenced information.

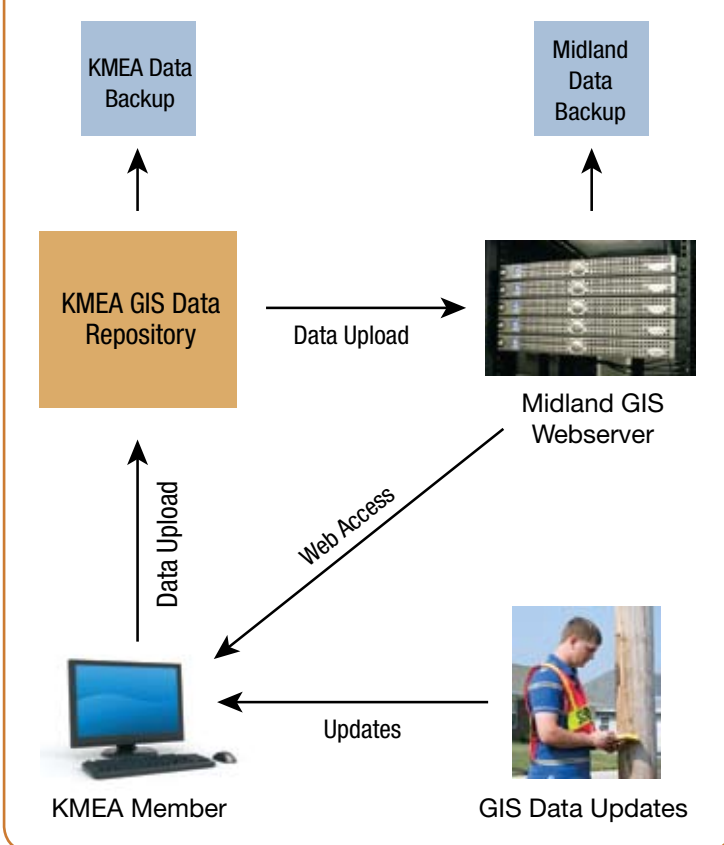
The GIS technology can help cities in a variety of ways, according to Kirk Larson, Operations Manager for Midland GIS Solutions.

"It provides accurate locations and good depictions, which help the city with asset management, capital planning and maintenance," said Kirk. "Plus, if the town has an emergency, they don't have to rely on paper

who will be the contact person for KMEA cities as they adopt G-MAP, knows firsthand the impact GIS can have on a municipality. Before joining Midland, he was a lineman and then public works director in Rock Port, Mo., for a total of 32 years.

"I would have killed for something like KMEA's G-MAP system then," Tim exclaimed. "It would be phenomenal to have that kind of information at your fingertips before you were struck by a disaster. A lot of smaller cities use the information out of Joe Smith's head. It's good to get it down on the computer so that future generations have it at their fingertips."

KMEA GIS Data Flow



Once a city signs on with G-MAP, Midland technicians travel to each of the city's "installations" to photograph and record the condition and location of power poles, transformers and pedestals. Midland's locations are survey grade, which means they are accurate to within 1 centimeter, according to Kirk.

Location information is then assimilated into a database from which the data can be retrieved in a variety of ways. For instance, a query could be made to locate all poles in need of repair or all transformers manufactured before a certain date. When they do, they will not only get the data, but also see the images at those locations. The database is fluid, so future information, such as repairs and new installations, can be added easily.

"You can get right down to street addresses and GPS location of poles, transformers and switch gears. You can even enter transformer voltages and wire sizes," said Coffeyville's McGie. "To retrieve that information, you just click on a spot, and a window pops open with all the data."

Anticipating varying degrees of interest and resources for such a project, the G-MAP program will feature a multi-tiered approach that matches city needs and budgets with different levels of service. Regardless of the number of "layers" a city adds on, though, the system will incorporate a uniform data structure, appearance and operating style to enhance ease and speed of use.

Cities will be able to access their G-MAP information via a custom web-mapping application and a Windows server on a password-protected page of the KMEA Web site, with backup data stored at

Arma to beta test G-MAP system

ON AUGUST 17, AFTER A PRESENTATION by City Administrator Tim Schook and Utility Superintendent John Gorentz, the Arma City Council voted to become the first city to participate in the KMEA G-MAP program.

The program, which will provide Agency-wide GIS (Geographic Information System) data on electric system components, is designed to help cities plan, manage and maintain their electric systems—and to enhance responses to power emergencies—at a discounted price.

"Like a lot of smaller communities, we struggle to keep our drawings up to date, so our mapping has not been sufficient," explained Tim. "We have some drawings and pencils sketches, but a lot of our information was in a guy's head. If a tornado comes through, poles and transformers can be scattered all over; mapping allows you to have exact locations of where things were."

Getting on board with the G-MAP system will cost Arma's electrical department fund approximately \$9,600. This will cover GPS data collection and mapping, as well as printing the 11-by-14-inch "truck books" the city wants to provide power workers.

But, Tim says, that cost is more than offset by the benefits the city will receive. First, there's the significant price reduction due to KMEA's group purchasing power. Then, there's the efficiencies created by enabling linemen to restore power more quickly, whether the cause is an auto accident or a major tornado. Even more important, the system will enhance safety by locating components that might present a hazard to power workers after an emergency.

To enhance responses further, the system will provide a uniform data structure that will make its blueprint-like drawings consistent from city to city, helping Mutual Aid workers read and interpret information quickly.

"The goal is to get as many Mutual Aid cities as possible to use the system," Tim said. "That way everyone is familiar with these drawings and no one has to sit around learning to read different drawings."

Cities can choose the level of G-MAP service they desire, starting with a "base" layer, and adding layers as the city deems necessary. The number and complexity of those layers, in turn, determine the cost of the system for that city.

For Arma, G-MAP will locate every pole and transformer, plus the circuits that run through town. Maps will also show the three phases that organize the city's system and the types of wire used in each. It may also incorporate service drops, if funds allow. All this electronic information will be stored for them by KMEA and accessed at the Agency Web site, www.kmea.com. Tim said his city might decide at a later date to purchase and license the GIS software so they can update their system themselves.

KMEA and Midland plan to complete the Arma beta test in October and report results at the Agency's Annual Meeting of Member Cities November 3–4 at the Wichita Marriott.

G-MAP continued on page 6

Midland GIS Solutions: KMEA's G-MAP partner

When the idea of designing an agency-wide platform for municipals to map their electric systems, one vendor kept rising to the surface as the obvious partner: Midland GIS Solutions, LLC.

With more than 36 years of mapping experience, the Maryville, Mo., company, owned and operated by Professional Land Surveyors, is clearly the most qualified and diverse GIS development company in the Midwest. It employs more than 24 highly qualified GIS staffers and in 2007 expanded to a new 7,000 square-foot building dedicated solely to GIS program development, implementation and continued maintenance for counties, municipalities, utility companies and private organizations. To date, the company has completed more than 35 countywide conversions from paper parcel tax maps to GIS; it has also provided GIS services to more than 30 municipalities in the Midwest.

Midland GIS was established in 2000 under the corporate structure of Midland Engineering, Inc., a respected mapping, surveying and engineering company for more than 30 years. Midland Engineering also encompassed Midland Surveying, Inc.

The company's Maryville location facilitates its ongoing association with the Geography and GIS Department at Northwest Missouri State University (NWMSU), where most of its staff studied. All company personnel have earned or are pursuing college degrees in related fields; many have postgraduate education. Several have interned at Midland through NWMSU. The proximity and long-term relationship with NWMSU also offer Midland access to a large pool of expert GIS and computer programming professionals.

Midland's team members include professional land surveyors, GIS project managers, GIS specialists and GIS data technicians who specialize in developing Web-based GIS applications and providing quality control and GIS training. They utilize state-of-the-art GIS equipment, as well as the latest ArcGIS software from ESRI, for which they are a licensed reseller. They also specialize in numerous GIS technologies, including ESRI's ArcView 9.3, ArcEditor, ArcServer, 3-D Analyst and ArcIMS, as well as Global Positioning System (GPS) technologies and Enterprise GIS programs. Further, staff members are accustomed to applying these innovative mapping tools to real-world situations, customizing programs and data to overcome obstacles and meet client needs.

To ensure client satisfaction, Midland GIS Solutions provides a wide range of training and support services throughout the GIS development process to promote client empowerment and create successful and functional mapping programs.

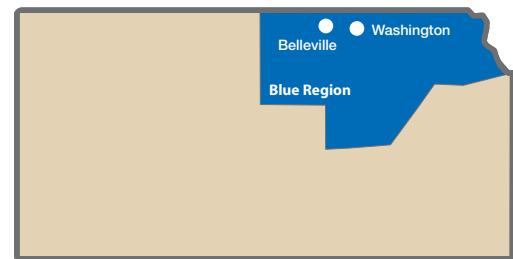
For its work, Midland has received numerous awards, including the 2008 Business/Government Partnership Award, awarded by the Missouri Association of Counties; the 2008 ESRI Business Partner of the Year Award; and the 2007 Vanguard Appraisals Technology Partner of the Year Award.

Mutual Aid Blue Region to the rescue in Washington

Things were winding down on Sunday afternoon, August 9, when straight-line winds estimated at 80 mph ripped through the city of Washington about 5 p.m. The aftermath revealed a broken power pole, along with widespread tree damage, which brought down city lines, as well as approximately 15 service drops.

As a result, about 30 percent of the town's 1,150 residents were without power—but not for long, thanks to KMEA's Mutual Aid program.

"I called Mike Wendt immediately to let him know what was going on," said Barry Finlayson, Utility Superintendent, Washington. Mike Wendt, Utility Supervisor in Herington, serves as Mutual Aid Coordinator for the Blue Region; Barry is Alternate Coordinator.



"Once we assessed the damage, I called back to ask for a crew from Belleville, which is just 30 miles away," Barry explained. "We probably wouldn't have needed help if we'd had a full crew, but we had just lost one lineman, and another was on medical leave following knee replacement surgery. That's the kind of situation Mutual Aid is designed for."

Within an hour two Belleville linemen, a bucket truck and a pickup were on the scene. They restored most of the city's power within two hours and returned the next day to reset the downed pole, which they had propped up temporarily the night before.

They stayed until 2:30 a.m. and helped to pinpoint a malfunction with a recloser that "gave us fits all night long before we figured out that the outage on that line wasn't caused by the storm."

The Mutual Aid program worked like it should, according to Barry, who indicated this was the first time Washington has utilized the program.

"The way it's set up, it's pretty easy to use. It just takes a phone call," explained Barry. "The response time was good, too, especially on a Sunday. It takes a while to round people up and get supplies put together, so for them to be here in an hour is really fast."

Even in tough times, Gas Agency staff spots opportunities for cities

Given the many hardships the recent financial market collapse has created, it's reassuring when a silver lining appears.

For the 40 KMGA (Kansas Municipal Gas Agency) member cities, economic conditions, combined with cool summer weather, have yielded plentiful gas at prices up to 70 percent below summer 2008 levels. And, KMGA staffers Christine Merritt and Joni Shadonix have worked hard to make the most of that opportunity.

"We always try to procure as much gas as possible when the prices are low," said Christine Merritt, KMGA Director of Natural Gas. Because gas prices are unpredictable, though, she and Energy Controller Joni Shadonix have to balance the amount of fixed price gas they purchase with spot market supplies so that cities are protected from market volatility.

"We want to avoid having all our eggs in one basket," explained Christine, a CPA who joined the Agency in 1997 after a number of years in public accounting and in the natural gas liquids business. "We buy on the futures market, the first-of-month index and the daily spot market. That way we even out the highs and lows of the market."

Buying gas and balancing contracts are just two of the tasks she and Joni are charged with. They also schedule gas to member cities and monitor gas storage. Right now, for instance, KMGA cities have nearly reached their maximum allotted pipeline storage capacity.

"We've never been at this level since I've been here," explained Christine, "so we have to



Christine Merritt and Joni Shadonix purchase and schedule gas, balance contracts and monitor storage for 40 KMGA member cities.

be careful. We have to monitor usage and supply to stay within the parameters the pipeline has mandated. Otherwise, we could be hit with heavy fines."

Gas is purchased and stored in warm weather when prices are typically lower and storage is available, then scheduled when the need increases during the winter. Gas still has to be purchased during the winter, but it is supplemented with the less expensive, stored summer gas.

Winter isn't the only time cities require gas supply. During the summer, peaking electricity can force cities to power up their own generators to produce more affordable electricity. And, they need gas to run those generators. So, Christine and Joni respond to city needs then, as well, scheduling the required gas supply.

While the market determines gas prices, individual pipelines charge transport rates that are set

forth in their tariffs. When pipelines raise those rates, KMGA also intervenes with FERC, when appropriate, on the behalf of member cities, to secure the most equitable prices possible. In addition, KMGA hopes to participate in the next phase of a prepaid program that will offer gas price discounts to member cities.

On a typical day—if there is such a thing—Joni figures the amount of gas that flowed through KMGA cities the previous day and compares it to the Agency's contracts and adjusts the day's gas purchases so that the contracts are constantly in balance. Prior to coming to the Agency, Joni worked for an oil and gas company. Both Christine and Joni live in Overland Park and are married with three

grown children, each. Joni has a 3-year-old grandson; Christine has two young granddaughters.

They say they enjoy helping the "great, down-to-earth people" at municipalities.

"The biggest benefit we provide to cities is purchasing power," Christine said. "If a city went to a supplier on their own, they would have a much smaller volume. Plus, they would be charged an 'add-on' to give the supplier a profit. We are a non-profit, so city fees are lower."

With two people handling 40 cities, KMGA delivers efficiency, to be sure, but they also provide peace of mind, according to Christine.

"We basically take care of them so they don't have to worry about their gas needs at all."

NEWS BRIEFS

Cool temperatures bring low summer energy prices

This year's unusually cool summer, combined with low natural gas prices and decreased regional electrical consumption, was a real boon to KMEA cities.

July and August temperatures were 20 percent lower than normal, according to Wichita weather data. July had 417 cooling degree days (CCDs) compared to the 503 average; August had 357 CCDs, down from a 454 average. Only five days in August peaked above 95 degrees in Wichita; there was even one heating degree day.

As a result, KMEA was able to buy energy on the spot market at exceptionally low prices. Typical peak prices were in the \$20s and \$30s per MWh; off-peak prices were in the \$10s and \$20s per MWh.

WAPA post-2009 allocations finalized

After two years of applications and negotiations, WAPA (Western Area Power Administration) agreements are now in place for post-2009 allocations, which began October 1.

Under the new agreements, KMEA will provide 32 MW and 99,000 MWh to 45 cities through the WAPA Hydro Pooling Agreement. New participating cities are Arma (385 kW), Cimarron (953 kW) and Russell (5,000 kW). These new Kansas cities received 100 percent of WAPA's new allocation (6,338 kW) for a four-state region. With the addition of these cities, allocations for existing cities will be reduced just less than 1 percent, in accordance with prior agreements.

G-MAP continued from page 3

KMEA and Midland. Participating members may choose to invest in additional software and hardware to store data locally on dedicated desktop computers.

"Larger cities may want to license their own software, purchase dedicated computers and perform their own data updates, which they will also upload to the KMEA server," explained Diann Burress, KMEA Director of Member Services. "Smaller cities may decide to access their information only through the KMEA Web site; they will collect data and updates on KMEA-provided handheld devices, then send the information to KMEA for input."

The G-MAP beta test in Arma is already under way, with completion expected in October. Results of this trial run will be presented November 3-4 at the Annual Meeting of the Member Cities.

Mutual Aid luncheons attract 106

Linemen, utility superintendents, city managers and city clerks from across the state once again participated in the KMEA Mutual Aid luncheons this year. The attendance totaled 106.

The luncheons, held every summer in each of the program's four color-coded regions, are designed to recognize those who embody the program's "neighbor-helping-neighbor" philosophy. They also provide a forum for reviewing the year's emergency responses and becoming better acquainted with power workers and procedures in neighboring cities.

This year's luncheons were hosted by:

Ashland, Yellow Region—July 15

Chapman, Blue Region—July 16

Arma, Red Region—August 13

Norton, Green Region—August 18

100 Five cities celebrate centennials

Congratulations to member cities who celebrated 100 years of providing power to their residents in 2009. They are Arma, Anthony, Ashland, Holton and Moundridge. A total of 29 KMEA member cities have reached this milestone since KMEA began keeping records. All cities receive an engraved plaque from the Agency commemorating the event.

Calendar continued from page 1

Nov. 19 EMP No. 2 meeting, location TBD

Nov. 26-27 KMEA office closed for Thanksgiving holiday

Dec. 15 EMP No. 1 meeting, KMEA office

Dec. 16 Executive Committee conference call

Dec. 17 EMP No. 2 meeting, location TBD

Dec. 25 KMEA office closed on Christmas Day

Jan. 1 KMEA office closed New Year's Day

Corrections and Amplifications

In the July issue of Power Factor, Augusta was incorrectly listed as one of three KMEA cities receiving WAPA hydropower allocations starting June 1.

In that same article KMEA post-2009 WAPA allocations were inaccurate. For the current—and correct—information on these allocations, please see the WAPA article on page 6.

Our apologies for listing an incorrect location for this year's KMEA Annual Meeting, also in the July issue. The meeting will be held Nov. 3-4 at the Wichita Marriott.



Mission

KMEA's mission is to support and educate its members in fulfilling their responsibility to provide reliable electric power to their communities.

Power Factor is a quarterly publication of the Kansas Municipal Energy Agency, a member-owned organization founded in 1980 to help Kansas municipalities pool resources and needs to provide more affordable, reliable power to their communities.

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