

# The future of KRWA Mapping – more than just data collection

**T**he Kansas Rural Water Association (KRWA) operates a GPS mapping department. It presently employs four staff members – David Gilley, Jesse Knight, Mark Thomas and myself. I thought I'd try to give a brief explanation of the mapping process.

KRWA collects GPS data for rural water districts and cities. After the data has been collected, it is brought back or sent to the office where it is post-processed to rectify any accuracy issues. Next the data is imported into a digital format that can be viewed with software. The data is also laid out in a format that can be printed to a map book or wall map on a large format plotter. The client city or RWD tells KRWA the type of maps the entity wishes to have printed. KRWA prints maps in whatever size and format the utility desires, and also assists in setting up the digital files on a computer with free viewing software. The processes of printing maps, post processing and connecting dots are all contingent on collecting GPS data. If there were no data collected, it would be impossible to perform any of the other functions. Does this mean that if GPS data is collected for all of the systems in the state, that there will be nothing more for the KRWA Mapping Department to do? No, I don't think so.

KRWA trains utility personnel about GPS technology and about the process of collecting data. Collecting data is a valuable service that KRWA provides and it is the cornerstone to KRWA's mapping program. But, collecting data is not the future of KRWA's mapping program. I think there will come a day when there will not be as many requests for data collection, but there will be more requests for support or assistance. KRWA already provides technical assistance, e.g., how to add a layer to a map document, or how to save a project or change the symbology. But eventually, I think calls may be answered about how to join an access database file with hyperlinks to scanned images of original documents that archive ownership information of parcels, or how to set up a valve exercise maintenance schedule with a user interface that will allow an operator to remotely access his computer from his Blackberry. These two examples are possible with digital data and the proper software, but more importantly, with the proper programming by someone who knows how to accomplish it.

City personnel and RWD staff have other duties to perform instead of concerning themselves with how to join two datasets. And programs can be set up that take all the complicated programming requirements away from the end user so all he or she has to do is "push a button".

## Web sites, mapping require time

"Digital maps are easy to use" – but only after they've been created on a computer!

Importing all of the data into a useable format, in the correct projection and joining it with the attribute information required, is the difficult part of mapping. Just ask the staff in the Jefferson County GIS Department. Dr. Chris Schmeissner and Kristen Jordan are busy designing and redesigning the county's Web site that hosts the infrastructure maps for each community in the county! They have linked different data sets to the

map so a user can log in, zoom to a specific area, identify the owner of a property, look up contact information, see lot dimensions, view any existing utilities in the area and check appraised values just to name a few! The interface is easy to use and fast enough not to frustrate the user so there's no "wait for the connection". Chris and Kristen have done an amazing job and spent many hours developing the site. (See related article on page 20 in this issue.)

There is new technology available that allows utility staff to take a digital map to the field and edit data in real-time! Digital maps can be loaded onto a handheld GPS device like a Trimble GeoXH or a Magellan Mobile Mapper and taken into the field. The maps can also be loaded on a laptop that is connected to a handheld GPS device. With either configuration, the user can navigate to a location with the GPS unit, make any repairs to the infrastructure in the area, edit the maps in the field, then connect to a central server in the office via cellular telephone and reflect those edits on the "master copy" of the digital data. From the office computer, the data can be transmitted to other mobile units that are working in the field so crews are accessing the most current and up-to-date information available! This is real-time mapping/maintenance that is on the cutting edge of technology and is being tested and perfected today in many

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areas of the country. Crews in large cities that are not required to stop at a shop to get new work orders can be more efficient. Repairs and installations can be completed after receiving a work order in the field! With the use of GPS, a laptop and a cellular or radio connection, a supervisor's vehicle can be turned into a mobile office that can maximize time. The repairs can be reflected on the mobile computer and transmitted to the central server so all crews have access to the most up-to-date information. This type of application would require a dedicated department for each utility or city and is not something that KRWA Mapping is prepared to undertake. But the technology could be applied to send RWD updates to KRWA for backup and subsequently to the Kansas Geospatial Community Commons (DASC) for archiving.

Continuity of symbology and attribute information will also be paramount in the future. It is easy to share data in a digital format but not if the files (shapefiles or feature classes) have different attribute table fields or different information populating those fields. If KRWA were to assist several different utilities in the state, it would have one standard for symbology and attribute information. This standard would be the standard set forth by the state GIS policy board. Adhering to a standard now will ensure compatible data sets in the future. It is difficult and frustrating to "figure out" what a person was doing when developing a set of data. There are many projections, transformations, formats, etc. that a person could have used to create a set of data. A standard would allow for seamless integration with other data sets and provide users with better abilities to manage or maintain their systems. In the event of a state emergency, a standard for data

sets could allow for ease of interpretation and improved response. There are hundreds of data sets available to state level emergency responders, but if those different layers are in different formats or projections, it may cause delays in what could otherwise be a very timely response.

I believe the future of KRWA Mapping lies in assisting utilities with developing customized applications to help them better manage their systems. Subsequently, as with all technology, a support system will need to be in place that users can call with questions and solve problems. As is the case now with other KRWA services, I think KRWA will be a resource systems will call on for technical assistance in the field of advanced GIS application development and assistance.

KRWA works hard to provide utilities with useable data that will allow them to maintain their systems more efficiently and effectively. The staff at KRWA will continue to be informed of the latest technology and applications that allow a utility to serve customers better. If your city or RWD is interested to learn more about GPS mapping, call KRWA at 785/336-3760. We welcome the opportunity to attend a board or council meeting and make a presentation on the service.

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