

KRWA Mapping efficiently helps support Kansas systems' technical issues

Every day, people from around Kansas, and even other states, call the KRWA office for technical support related to GIS mapping. I am taking this opportunity to print several recent calls as examples.

Public Wholesale Water Supply Districts

Nick Maciaszek of E-Fm Consulting, LLC, Lawrence, called to ask questions about Public Wholesale Water Supply District 13 and its boundaries. I offered the information about the boundaries and told him that he could visit the Kansas Geospatial Community Commons Web site to download several digital files that would help him add layers to his Geographic Information System of the utility. The information that I gave to Nick prompted several other questions regarding the PWWSA's boundary, transmission lines, being a "member", how customers are served and others. We discussed a number of topics associated with public wholesale water supply districts in Kansas.

GPS elevation accuracy

Pat Cox with BG Consultants, Inc., Manhattan, called to inquire about getting data files for Cowley RWD 6. KRWA does not release files without the consent of the utility's board or council. After receiving the district's approval, it was very easy to email the files to Pat.

Pat was curious about the accuracy of the elevation data for use in a hydraulic study. Elevation is not accurately calculated by mapping grade equipment. A GPS unit would have to collect data over a feature (meter, valve, etc.) for several minutes, if not hours to collect enough GPS positions to accurately acquire an elevation. KRWA staff has learned that in order to collect accurate X, Y or horizontal position data, it only takes 30 seconds over each feature. This allows KRWA staff to be very efficient thus saving money for the client utility. Pat will be able to take the RWD meter shapefile and lay it over the digital topographic

map of the region to determine meter elevation. It will take a little more effort but the results will be much more accurate.

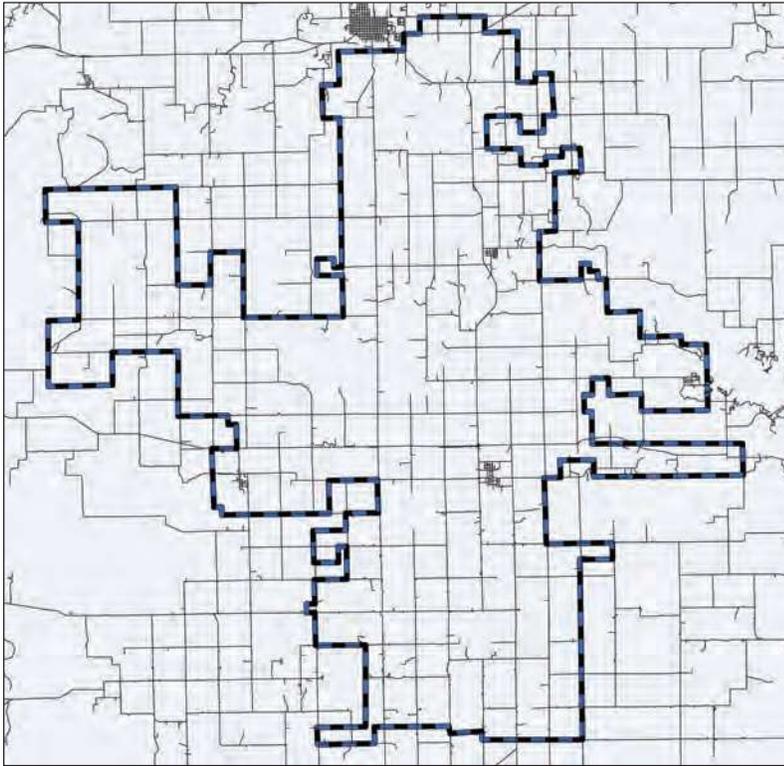
Pat and I discussed how I would get the files to his office. Most people are surprised when I tell them that shapefiles are relatively small and are easily emailed. All of the data for Cowley RWD 6 was easily zipped up, attached to an email and sent to Pat for digital modeling of the district.

One Call buffer file

Dale Newland with Labette RWD 3 called to inquire about joining Kansas One Call. KRWA had collected digital data for Labette RWD 3 and Dale was asking if that data could be sent to One Call Concepts. I informed Dale that OCC would not accept line and point data for their database but will accept and they prefer digital polygon files. It takes some time to merge the service lines, main lines and any other lines (abandoned, out-of-service, etc.) and then create a buffer around those lines, which will then be turned into a polygon for One Call. But, the system is able to decide what



This map shows the buffer (in blue) around the main water distribution pipeline that runs through a section of the Labette RWD 3. Kansas One Call will use this file to notify excavators when any locate request is made that is within the tolerance zone.



This is a map of the modified boundary for Greenwood RWD 1. KRWA and district staff were able to use the Internet to view each other's computers and make adjustments to the original boundary file. This closer polygon will reduce the number of errant locate tickets sent to the system.

tolerance it wishes to place as a buffer around pipelines. This distance is directly related to the confidence in location of the buried lines when GPS data was originally collected. If the lines were drawn into the digital file based on GPS locations that were collected in the field, then the city or RWD utility will have a high confidence of its actual location on the map, thus allowing for a "tighter" buffer. If the lines were drawn using a "best guess", then a larger buffer could be created allowing for more coverage area. I created a 50-foot buffer around all lines, meters and valves for Labette RWD 3 and sent it to One Call Concepts to be used in their database for Kansas. The alternative to creating a digital file and emailing it would be to draw an acceptable boundary on a paper map, send it to One Call and have them digitize it to the best of their ability with no knowledge of the system or city infrastructure.

Cross Loop connection helps edit

Jim Boughner called from Greenwood RWD 1 for the same reason that Dale Newland called. He wanted to send a map to One Call for enrollment. Unfortunately, the District does not have GPS data collected for their entire system, but only part of the system that was recently installed. I suggested that we conduct a Crossloop session to refine the boundary lines of the district before sending. A "Crossloop" session is a connection between two computers located anywhere having an Internet connection.

Crossloop then allows one user to remotely view the other computer's screen, regardless of where in the world that it may be located. There are other companies that provide this service. Crossloop is a free service and simple to use. GoToMyPC, LogMeIn and ShowMyPC are other well-known providers. Since Jim and Christina Harrison (the district bookkeeper) do not have digital editing software, but they know where the boundary line is, we somehow needed to get them "in front of my computer" in Seneca, Kansas. We logged into a Crossloop session, adjusted the settings and immediately Jim and Christina were viewing my screen and telling me where to move the boundary lines in

order to make a more reasonable buffer file to send to One Call! Christina was even able to control the mouse from their office in Eureka, to show me exactly where they wanted the polygon boundary to run. We made the adjustments to the file, I printed it as a .pdf and transferred it to her computer. After they compare it to some of the notes they have kept over the years, we may refine it a little more before I send the digital polygon file to One Call.

Engineering design aided

Michael Linquist of Wilson & Company Engineers & Architects, Salina, called to request digital data to use for the design phase of new work for Weststar Energy. Originally, a locate request was sent to Washington RWD 1 to locate pipelines and any other of the RWD's facilities over a 23-mile long area. Manager Darrell Schlabach, like most other water operators in Kansas, does not have time to spend locating lines for an engineering firm that is in the design phase of a project. Such locate requests are commonly referred to as "survey locates". But, digital data works very well for this purpose! Washington 1 is realizing the benefits of collecting GPS data and having the system digitally mapped. Darrell requested that KRWA send the files of water line location to Wilson & Company. With the digital data, Michael will be able to see water district line locations as the firm designs the path of the new utility. And, due to Darrell's extensive

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knowledge of where the water lines in the district are installed, the digital files are very accurate (within feet). As a result, Wilson & Company can design the new utility path for Weststar with confidence in the locations of Washington RWD 1's pipelines. Darrell didn't even have to go to the proposed route! He can dedicate his time to more productive tasks. As construction begins and excavation locates are requested, Darrell will know which requests need to be physically located and which he can simply call with an "all clear". For a 23-mile long project that is located miles away from the home office, this will save Washington RWD 1 staff dozens, if not hundreds of man-hours.

More recently, Cherokee RWD 2 operator JW Stephenson called to request that the system files be sent to Professional Engineering Consultants, P.A. in Wichita for project design of PWWSD 19. A letter was sent to JW requesting him to "mark the pipe size and location of your waterlines that lie within the red clouded area on the enclosed map and return..." It goes on to request any "electronic copies (PDF, TIF, JPG, etc.) of your map" to be emailed to PEC. "Congratulations" to PEC for acknowledging the fact that it is more productive to access available digital files than it would be to have a busy operator hand draw infrastructure onto a small paper map or request him to answer locate requests! The letter ends by stating that the "line locations that you provide will be utilized to select a route for the new

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PWWSD 19 waterlines that will minimize disruption to your existing waterlines. We will request field locates as needed for your waterlines and perform the necessary field surveys after the final waterline route is selected." PEC recognizes that these GPS collected maps and digital files are to be used in conjunction with established locating practices like

spotting or probing to ensure line location.

KRWA phones are busy

These are just a few of the recent technical calls that I personally received and provided assistance for. The KRWA office receives dozens of calls every day. As I was writing this article, I questioned how many tech calls are received at the office. I have been here when it seems the "phones are ringing off the hook", and I have been here when it seems to be "calm". The office has four lines. Anyway, I retrieved the phone records, called the provider and even looked back through the caller ID to assemble some history. The numbers that I tallied were a little surprising. There are three regular staff members at the KRWA office. During the billing cycle of July 11 through August 10, the invoice reflects that this office made 350 long distance calls or faxes. The caller ID indicates that on the last three days (from the day this article was written) the office received 33, 35 and 47 calls respectively. An additional 17 calls came in on the toll free number. Local calls are not in this count. If the KRWA office receives 38 calls a day, and makes about 18 calls a day (again, not including any local calls as those do not log on the billing statement), it is easy to calculate that the KRWA office makes or receives a phone call at least every 8.5 minutes. KRWA is able to provide the assistance you need by answering those calls. We haven't yet touched on the emails - which far exceed the number of phone calls. So, keep dialing and sending, Kansas! We're here to help.

If your city or RWD is interested in learning more about the benefits of GPS mapping, please give KRWA a call at 785-336-3760 or email me at pete@krwa.net.

Pete Koenig is a GPS/GIS Tech at KRWA where he has been employed since 2004. He also currently serving on the board of directors for Nemaha RWD 2.



- LINE STOPPING
3/4" - 60"
- LINE TAPPING
2" - 60"
- VALVE INSERTION
4" - 16"
- VALVE TURNING
- PIPE REPAIR



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