

# How does sharing GIS data benefit a neighbor?

**K**ansas Rural Water staff visits with many different cities and rural water districts about the benefits of GPS mapping and developing a Geographic Information System (GIS). We discuss how the collection of such data can benefit the system with management, disaster relief, archiving and locating. We also discuss the benefits of sharing the data with other agencies and repositories of data to create a more expansive GIS. Sharing data is the cornerstone of acquiring data that is needed in order to manage a system. If systems don't share, they have to recreate layers or sets of data that have already been created. Recreating costs money and more importantly takes time.



*Pete Koenig  
GPS Mapping Coordinator*

There is no reason to reinvent the wheel. Just trade someone's wheel for your headlight and everyone will benefit.

GIS data is easily shared. In order to share the data, shape files, feature classes or other sets of GIS data, it is as easy as:

1. Copy the data to a disc or attach to an email
2. Hit "send."

The recipient can reformat or re-project the files into a useable data set that he/she can utilize to better serve the needs of the system. The only question that remains is "Why?"

Why wouldn't a utility want to share its data with a neighboring system, or state

emergency planners to better aide in cleanup or rescue? Why wouldn't a city or rural water district want to share its infrastructure files with a county GIS department? What benefits could come from sharing data? I've asked some experts from the Kansas Geospatial Community Commons, formerly DASC, about the legalities of sharing data. I've also investigated the Department of Homeland Security for its views on handling protected critical

subject to inflated charges. According to the Attorney General's office, any data that was acquired with taxpayer monies that is not a state required set of data (i.e. high resolution aerial photography) is subject to whatever charges the owner wants to impose. These sets of data are not subject to the Kansas Open Records Act and can therefore be "priced" out of range to some small communities. The owner must be careful, though, because small

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## Why wouldn't a city or rural water district want to share its infrastructure files with a county GIS department?

infrastructure information. And, I've asked a County GIS Department staff member for her views about what benefits a small community could realize from sharing its data with such a department.

The Kansas Geospatial Community Commons (DASC), houses data that can be accessed and downloaded via the internet. Large files can also be requested, burned to a cd and mailed to a recipient. All data stored by DASC is available to the public. The majority of the data (if not all of the data) was acquired with taxpayer monies and is therefore not subject to any other charges except recovery of time and material costs. However, some data that is collected by county GIS departments, appraiser offices, and zoning commissions can be

community and rural water district personnel have long memories. Usually, what goes around comes around. If a small community is charged an inflated rate for aerial photography by a county, when that county eventually develops it's own GIS department and is looking for data layers, that community may recoup its original losses. I think it would be beneficial to all parties involved, if they would just learn to share.

So many people in Kansas are charged with the task of supplying clean drinking water to the state's citizens. Some of their concerns include ensuring that the water is clean, making sure that it is affordable, and keeping it safe from contamination. None of these tasks can be compromised or

those managers and board members would have failed in their duties. The issue of safety is paramount and is normally dealt with by installing fences around towers, posting signs by wells and locking doors to treatment centers. In today's digital world, information can be stolen in the same manner that someone could steal a chlorine cylinder. Would the loss of this digital data be damaging to a system or small community, though? It would depend who stole it. I suppose if a group of individuals, who were intent on harming a population and had the means to introduce a potentially harmful substance into a water system, and had access to the location of a cleanout, well or hydrant, they could conceivably cause great harm. On the other hand, if a landowner just wanted to see if a water line runs through his pasture, there probably wouldn't be much need to secure the data behind a triple encrypted firewall. So, how far is too far when it comes to security?

The Department of Homeland Security speaks in length about "Information Analysis and Infrastructure Protection" on their website. The DHS does not, however, discuss water systems as being included in "critical infrastructure". The Critical Infrastructure Information Act of 2002 is an 11 page document that can be downloaded from the Homeland Security website, [www.dhs.gov](http://www.dhs.gov). It discusses "key resources and critical infrastructure of the United States, including power production, generation, and distribution systems, information technology and telecommunications systems (including satellites), electronic financial and property record storage and transmission systems, emergency preparedness communications

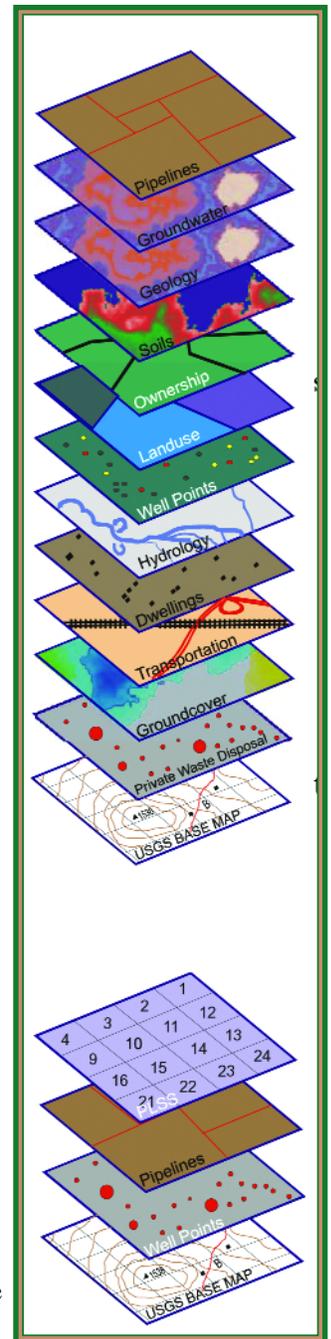
systems, and the physical and technological assets that support such systems." Nowhere in the Act does it identify "water or wastewater systems" as being included as Critical Infrastructure. Therefore, it can be concluded that water and wastewater infrastructure data is not "exempt from disclosure under section 552 of title 5, United States Code (commonly referred to as the Freedom of Information Act)" However, KORA (as discussed earlier) does not apply to data that is not required by the state, so the data can be made unavailable.

Even if a utility is obligated to release data, should it be of great concern? The process how a system releases the data could deter many individuals from obtaining that data for questionable purposes. A utility may require two forms of identification and a waiting period while a background check is performed. Any fees associated with a background check can be passed onto the individual as well as reimbursement for time spent investigating. Documents can be signed by the interested party attesting to his/her intentions and those intentions can be mailed or relayed to the patrons of the system for added oversight. It seems in rural Kansas, the best policing is performed by the citizens.

Kristen Jordan works in the Jefferson County GIS department in Oskaloosa. I asked her why a city would want to share its data with a county GIS department. Her initial response was "because it would be fun and interesting." Kristen is the kind of person who thinks writing VB script and post-processing data is exciting! But she really knows what she is talking about and, after careful thought, she came up with the following reasons to share data.

1. Our main reason for wanting cities to share data is to be able to provide them with GIS capabilities. Most cities, especially smaller cities in a rural county, do not have the financial base to build a GIS Department. Our county already has GIS set up with a robust system of software, hardware, trained personnel and GIS knowledge. With the possibilities included in ArcGIS Server, the cities can view and even edit their data over the internet. We want to be able to provide them with GIS capabilities because of the city's expertise of their own data. No one will know better where the water, sewer, gas, road, whatever infrastructure is located, so they are the best ones to double check, correct, and use the data.

2. Besides being an excellent housing point for the city data, our county would also like the data for our county Emergency Management Agency. For example, if a tornado were to



*In developing a GIS, layers of information are stacked*

**Providing accurate system infrastructure data would help maximize the engineering project's effectiveness and accuracy.**

pass through Jefferson County like in Greensburg, physical infrastructure locations are lost in the rubble. Having accurate locations stored digitally for infrastructure would be an essential part of emergency mitigation and effective, efficient relief and rebuilding.

3. John Doe who has worked for the city for 50+ years and knows (the location of) all the shutoff valves might be highly capable, but is not a great source for data integrity, data accuracy, data sharing, data analysis, city planning, emergency planning or long-term storage. By sharing data, more than one copy of the data exists, thus making a backup easier in the event that something went down, unlike

Mr. Doe who is only good as a data storage device while he is alive and functioning.

4. Most engineering firms work with AutoCAD and can easily integrate the city's infrastructure into their project models. Providing accurate system infrastructure data would help maximize the engineering project's effectiveness and accuracy.

Kristen works with GIS shapefiles everyday and is involved with the daily requests from county departments including road and bridge, zoning, the Sheriff's department, the appraiser's office and private requests from land owners and realtors. She also understands that no one knows a utility's

infrastructure and design better than the ones who work with it every day. By housing the county's data and a capability to edit that data on a central server that is connected by the internet, a city staff member who repairs a leak on Wednesday, can access the city's infrastructure on Thursday to reflect changes while those changes are still fresh in his mind.

The loss of location due to a natural disaster, like the tornado in Greensburg, can hamper cleanup and rescue efforts. KRWA staff member Charlie Scwhindamann, came back from locating water meters in Greensburg and stated, "boy, it sure would have been nice to have GPS data for all of those meters. The notes on the city maps weren't very useful because the fence that was measured from to determine the location of a meter was gone, along with every other structure in town." With GPS data for meters and valves, city personnel could have navigated back to within feet or even inches of where system features were, no matter what was piled on top of them.

Sharing data is a good practice. It promotes good relations between communities and provides added security and oversight. KRWA advises all systems for whom it conducts mapping services to share their data as it may come in useful for someone else.

If you have interest in GPS mapping, give KRWA at call at 785/336-3760 or email to me at [pete@krwa.net](mailto:pete@krwa.net).

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