Notes from the field *by Dean Spindler*
The importance of Surveys to the reclamation community

Back in the 1980's our state, with OSM funding, put a significant effort into assembling the natural history resource information for Illinois into a comprehensive GIS database. The information housed in this repository included hydrologic, geologic, biologic, and historic data. This was around the time when GIS software started to become popular.

Over the 20+ years that I managed our GIS and Illinois State Geological Survey (Survey) and Illinois State Museum contract programs, the question of whether continued financial support was warranted came up often. Over the course of the past 20 years, entire spatial database libraries of historical information mining, coal drill log information and lands that have been surface and underground mined have been consolidated into one location. The other natural resource spatial databases are now maintained by their respective agencies but are available to our agency. Although the information is not maintained within our Land Reclamation Division (LRD) withing the Illinois Department of Natural Resources (IDNR), the investment has paid off many times over by providing information services to LRD as the SMCRA regulatory authority. These services provide efficient and timely access to topographic, hydrologic, geologic, biologic, cultural and historical information during permit application reviews. Both quality and timely reviews of permit applications are key components to running an efficient and high quality regulatory program.

Every year we sit down with the state museum and the survey that we provide contractual support funding to in order to ensure that the previous year's goals and objectives are met and also to discuss data gathering or delivery improvements or future data needs. Besides getting the data deposited in the various repositories, other goals discussed were to be able to extract the data in a fast and convenient manner for the regulatory and science community, and for the public, where appropriate. Cultural and historic information carry confidentiality requirements; therefore this data is only delivered to authorized persons under a separate website. On the other hand, the Survey uses a public web site (http://isgs.illinois.edu/ilmines) complete with location matching features for the public to use to determine the existence and probability of undermining. All of these are examples outgrowths of program support.

There is an additional benefit of having agencies outside our program maintaining support duties. A common occurrence is for an unexpected site condition or regulatory issue to come up where preliminary information is needed in a hurry. These support agencies that maintain the data (e.g. the Survey and other divisions within IDNR) commonly have expertise, knowledge of additional data sets including the limits of the public data usability, other programs, and staff availability to answer questions in a timely manner and the ability to offer advice for long term questions.

The best example I can think of occurred several decades ago. The Survey maintained the underground mined data layer and we asked them to differentiate the pre/post 1983 undermining areas to assist the SMCRA Title IV vs. Title V eligibility/responsibility. Prior to that, all we had available were paper maps. As time went on, the effectiveness of using this information for subsidence events was reevaluated and improved. Additionally, the data was differentiated between room and pillar mining and longwall mining.

Now we are 39 years into the permanent regulatory program and unanticipated subsidence events have occurred in post 1983 undermined areas. Unfortunately, some of these events are traced back to mining companies that no longer exist, and no entity can be found to hold liable. Initiatives are being evaluated on the best way to deal with the problem both now and into the future.

Data is needed to determine both the spatial extent of the issue and to develop a model for future financial impacts. This requires both immediate information to explain the issue to the appropriate parties, and the ability to develop long term solutions. Having an established working relationship with the Survey and many already developed high quality data layers has been helping the project move forward, although more slowly than LRD would hope.