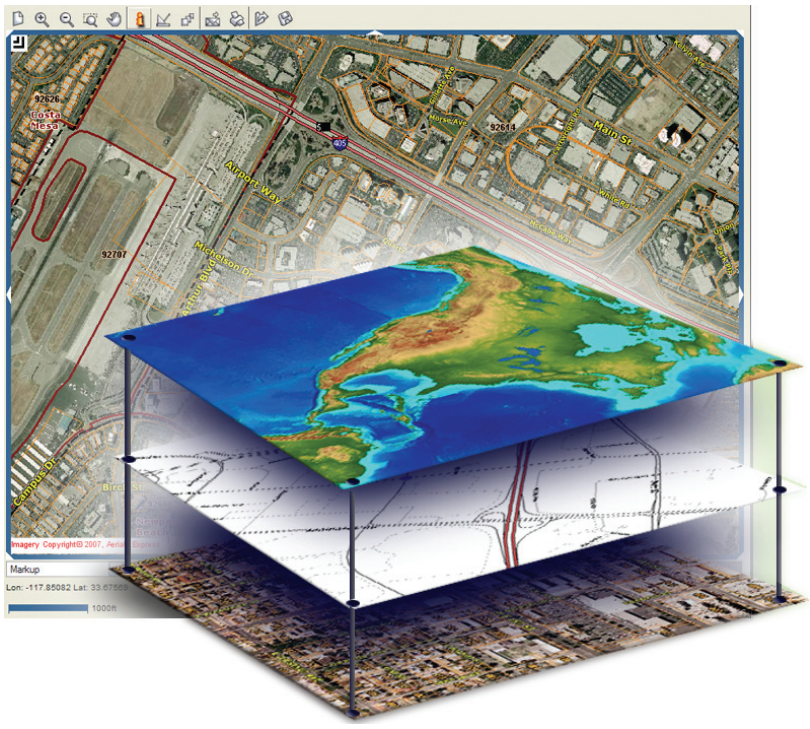


Coming Next –
The Real GIS Revolution

If you understand what GIS (geographic information system) is, chances are you are a technical type or a member of your company's GIS department. However, soon many more people in other departments will begin to make use of GIS. As organizations of all types get their GIS infrastructures running smoothly, end users in every department can begin to use GIS to make informed decisions faster than ever before. Once the infrastructure is built, the real benefits of GIS will accrue as it is disseminated to everyone involved in the right of way process, thereby streamlining their work and allowing them to solve complex land issues more quickly.

BY JAMES SKURZYNSKI

GIS sounds complicated, but it is really just a way of capturing, analyzing and displaying most forms of information. Since about 80 percent of business data has some geographic component, we can put almost all data onto a map. As Figure A shows, once information is converted into GIS language, it becomes visual. Converting tables of data into such a visual form is immediately and immensely powerful, as most people are able to understand visual information more quickly than tabular data. Visualizing data such as land use trends, property values and neighborhood landmarks in map form often leads to instantaneous insights and better solutions to complex problems.

GIS in the Right of Way Land Acquisition Process

GIS is already in use by most large and mid-sized companies in the right of way and land acquisition businesses. Consider the example of how a major utility company in California uses it. When the utility is looking for the optimal routes for new power lines, it calls up its GIS maps. These maps provide immediate insight into the company's existing infrastructure and the general state of developed and undeveloped properties.

On top of this basic view, the utility can call up layers showing additional information pertinent to the acquisition/development

process, such as wildlife protection areas that could introduce complications to the right of way initiative. From there, this California utility can generate a list of properties that will be affected by the proposed route. Already, the power of combining different databases into a visual form is obvious. From their own desk, any utility employee can view the map, click on it to get ownership information on the right of way properties and generate a list of contacts for negotiation.

Other databases can also be incorporated into traditional GIS systems to add even more features to the baseline map. For example, with access to property and sales data, the utility can create a comparables report listing recent sales prices for similar properties for each affected property to help determine fair market value and support negotiations with owners.

For many companies, this level of GIS usage has become standard and even required to compete in the marketplace today, but this is only GIS on training wheels. Now that companies are learning the true power and value of GIS, they are ready to take the next step.

The Next Step: Using GIS for Knowledge Capture

Going back to the California utility example, we see that most of the activity completed so far has been performed by the company's GIS experts. The next step in the GIS revolution is getting the end users inside that California utility to take advantage of the power of the technology. That end user, sitting at a desk, can pull up the map and add information pertinent to each property. For instance, a note can be attached to a property keeping a running record of the interactions with property owners.

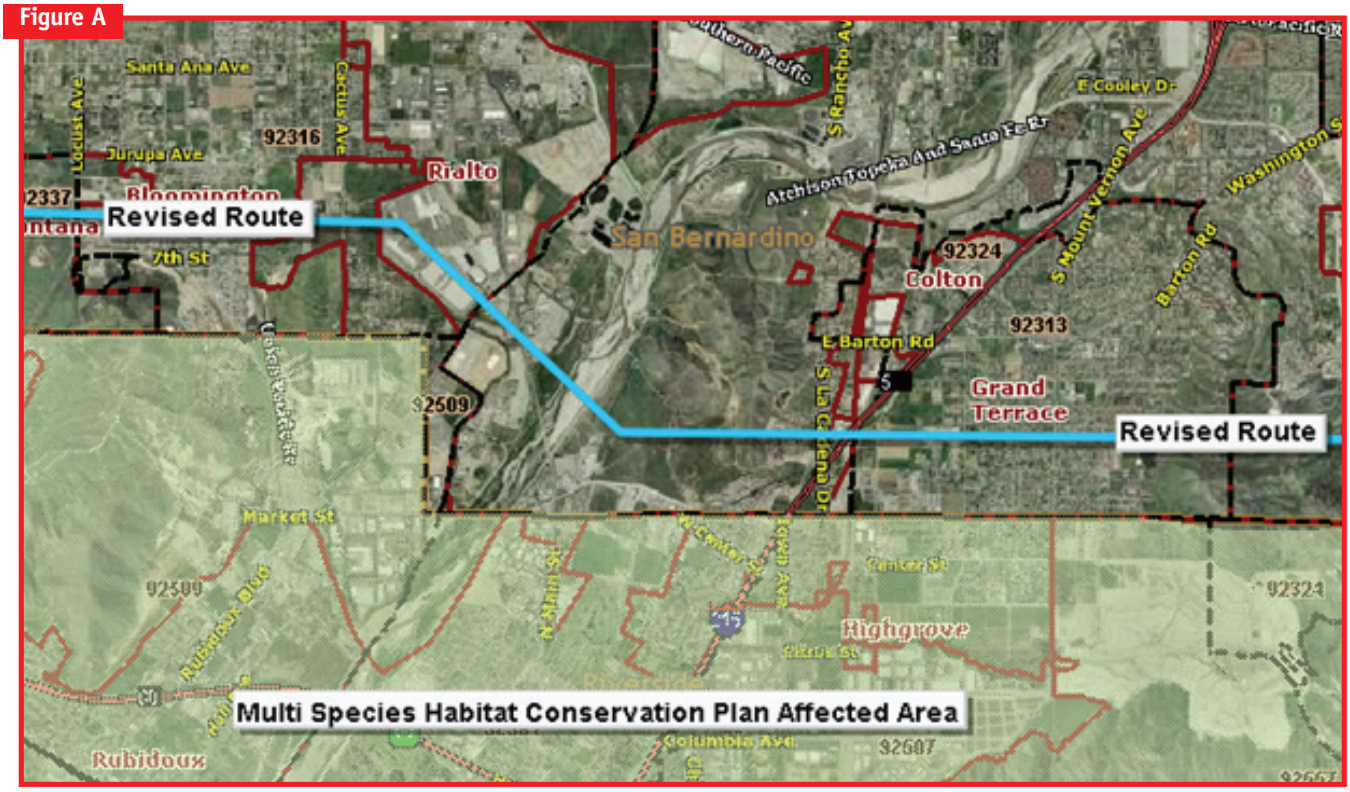
As the acquisition process continues, the company's various departments can add labels or colors to each piece of property to communicate its acquisition status. Interactive drawings can also be added to the map to illustrate and keep track of any difficulties that arise. When the acquisition is complete, the utility has a permanent record of each interaction that has taken place between one of their employees and the property owner. The utility has captured the knowledge of its workers and harnessed it as a tool for better customer service.

The Evolving GIS Infrastructure

Until now, GIS technology has been in its infancy. As the infrastructure continues to be built out, it is evolving into a powerful tool for many organizational departments, not just the GIS group.

Today, a wide variety of information is available to anyone who is willing to pay for access to it. This baseline data is often collected by governments and includes information such as county tax records, property values, and aerial maps. Most companies doing right of way work can either buy these data sets or access them through a web-based interface. This baseline data is the starting point for the effective use of GIS data.

Figure A



> **"...most people are able to understand visual information more quickly than tabular data"**

The next layer of GIS data, and the next level of usefulness in the right of way process, is to integrate the proprietary data that the company collects. Gas companies would add a map layer showing their pipelines; railroads would add their railway routes; and transportation departments would show natural hazards and road networks. Putting all of this data into a visual form and interacting with it as an image, instead of in a database, has already started to revolutionize the way developers, utilities, cities, real estate experts and other professionals spot trends, assemble parcels of land and obtain the big picture of their corporate holdings.

The third stage of GIS integration involves the capture and sharing of organizational knowledge. From a user-friendly interface, end users in every department can annotate the company's GIS records with all types of useful information. Instead of attaching post-it notes to paper files, the users are beginning to see how handy it is to plug their pieces of information into the big-picture map, where anyone can access them and where they are stored for future use. The end result is better, faster decisions in the short-term as well as down the road.

Using GIS for Improved Decision-Making

Once the baseline data and company-specific information is online and everyone in the company is adding their own captured knowledge, the stage is set for testing the power of GIS technology. At Digital Map Products, we have been working with numerous government agencies to translate their data into a form that is accessible by the average professional without needing to learn any new skills. From there, specific information overlays can be added to tailor the data for specific work flow needs. This is done through a web-based software application that can be accessed from anywhere that has Internet access— from your office, home, local Starbucks or even out in the field with a wireless access card. Our company's main mission is to bring the power of GIS and location-based data to all end users, and to do so in a way that meshes seamlessly with their everyday activities. From this starting point, we're now pleased to see a variety of industries, including the right of way community, begin to use GIS infrastructures in new and exciting ways.

The magic of today's GIS interfaces is that they have become perfectly invisible to users, so that anyone anywhere can use them without much thought. Most people are familiar with maps and how to read them. Now they are learning how easy it is to organize data in this mapped form and use it to analyze and update data.

Stages of GIS Integration

Baseline data	Government information available to anyone
Company-specific data	Detailed information gathered by or developed by in-house GIS department or web based service
Knowledge capture	Input of location-based information across departments
GIS-based decision making	Use of layered information to make more efficient decisions

Figure C

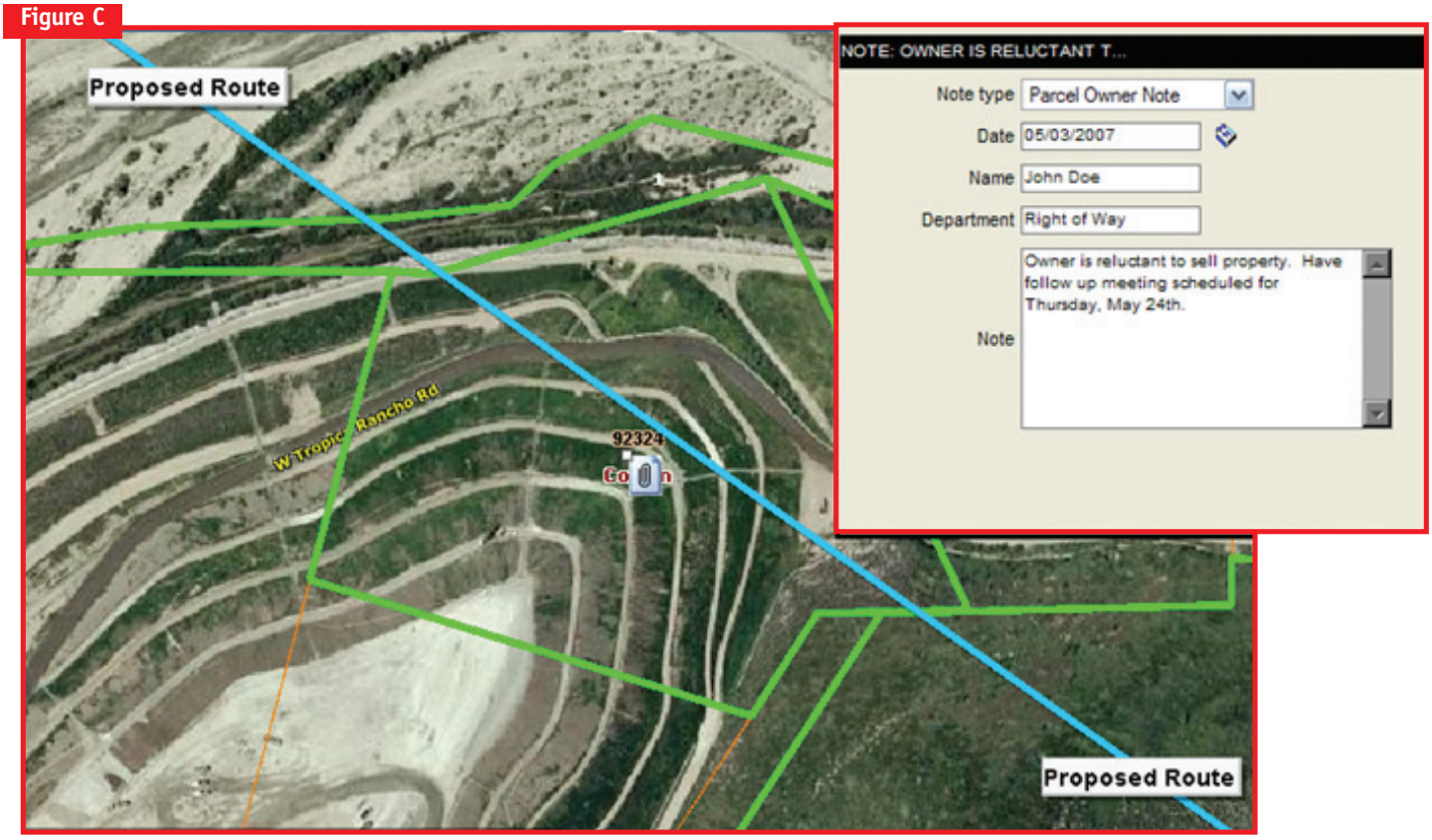


Figure C shows a typical map generated by a utility employee.

Some of the many useful ways GIS is being used for decision making include:

- Getting a handle on the basic infrastructure of a company's assets
- Developing lists and tracking contacts during the public information process
- Tracking issues and contacts with property owners along rights of way
- Recording tree trimming, fence mending and other routine activities
- Documenting land purchases that are pending and completed
- Identifying developments, road projects and other activities in the vicinity that could impact a project
- Spotting potential sites that could be developed as potential revenue streams
- Overlaying multiple project details
- Collaborating across departments

These uses, however, are just the tip of the iceberg. We encourage people in every aspect of right of way work to start experimenting with GIS to realize its full potential.

Think of it this way. The GIS departments and vendors have been acting as technical librarians, putting volumes of GIS data onto the shelves where they are available to all users throughout the company. In the past, users had to contact their GIS department to request any data that they wanted to see combined in visual form. In other words, the GIS reports being requested were limited to the information the end user could envision needing and request, thereby restricting its effectiveness.

Today, as more and more GIS books are "on the shelf," a user can easily access all the maps available and browse through them without ever leaving their desk. This enables anyone viewing these maps to discover new and creative ways to combine the data available. As a result, we will start to see even more uses for visual data and we can expect new trends to evolve—those that would have never otherwise shown up from databases—as the GIS revolution filters down to every part of the right of way process.