

# Better. Faster. Smarter.

## GIS technologies bring new efficiencies to managing right of way projects

BY DHEERAJ KULSHRESTHA

Imagine a technology solution that could streamline some of your most costly and time-consuming business processes. A product that could actually help reduce operational costs and facilitate better decision-making, all while lowering the cost of training new personnel.

While Geographic Information Systems (GIS) have been around for roughly 40 years, until recently, they were primarily used for proprietary software applications and hardware. As technology progressed and GIS hit the desktop, its applications have essentially exploded. Today, most cell phones can deliver geographic information within seconds. With this added convenience – from locating nearby restaurants to getting directions to a movie theater – it’s hard for many of us to imagine our lives without it.

### AN IDEA EMERGES

Our team at Flairsoft had been contemplating ways to adapt the most recent and relevant technological advancements to right of way work. We pondered how to best integrate GIS functionality into the company’s propriety software solution, Flairdocs™ originally introduced in 2003.

A typical right of way project covers a large geographic region, sometimes spanning multiple states. The complexities and customizations associated with each project can sometimes seem overwhelming. The client might require specific formatting for their particular legal documents. The project may entail multiple owner negotiations by numerous agents, and communications between them becomes essential. Property appraisals often need to be accessible to various staff in different locations, along with survey documentation and geospatial data for route planning.

We recognized that clients needed a single application that could house all of the various documents involved in right of way acquisition and make them accessible to users in the field at multiple office locations anywhere in the world.

After extensive research, planning and testing, a 2010 version of Flairdocs™ software was launched with a high-tech GIS

component. The product can deploy its solution across multiple customers, while making pertinent project information accessible to clients in real time. And all of this can be accomplished without additional programming simply by configuring the GIS module according to client needs. It also provides a unique way of managing document data and geospatial data in combination with Enterprise Resource Planning (ERP) systems to manage projects from concept to completion.

### ROLE-BASED ACCESS

Given the unique requirements of our customer’s projects, the project team needed to cover all the bases. Our development team included an architect, developers, quality assurance engineers, a business analyst, GIS engineer and project manager. Throughout the process, active customer involvement was crucial to ensure their needs were being met. Following a four-month implementation cycle, client’s tested the software on multiple projects before giving the final thumbs up.

The software can be configured so that it aligns with each client’s security needs. A web interface, controlled by a strict authentication of users, can supply the level of access required for each project. This means that only those users assigned to specific tasks can view or edit data. Different users can be granted access only to their assigned area, giving added control. This type of practical workflow configuration is handled through a dynamic assignment and role scheme. The repository database is never exposed externally, and user access is controlled by a number of different authentication methods. These important safeguards protect confidentiality of data and protect corporate assets.

With configurable work flows, the right of way processes are designed and deployed within the Flairdocs environment. This insures that processes are followed and that documents are generated according to the parameters and needs of each customer. The result is a streamlined process that can be easily duplicated for every new project. With the many jurisdictional requirements regarding document formatting, this provides significant cost-saving benefits.

## REAL-TIME DECISION SUPPORT

The relevant new feature of the Flairdocs software lies within its GIS capabilities. Geospatial data typically reside in separate environments within Internet Map Servers, like ESRI ArcIMS® or Intergraph GeoMedia® or other OGC compliant systems. Another type of map server is Google® or Bing® Maps, which can be used with the proper licensing. All of these map servers have common interface specifications to retrieve and use this data. Engineering data can also be added to enable a real-time capability for tracking important changes in the planning phase.

When all the data is linked to the project database, a visual, thematic analysis capability becomes available. Thematic mapping is a process of connecting common data elements (the theme) within geographic data (the map). Thematic maps can be generated in real-time once the initial databases are configured. Themes are typically preconfigured and available to the user from a drop-down menu.

With a little training, the user can also add new spatial queries. These are built and executed in much the same way as asking important project management questions like, which properties have a survey in progress? Which have a finished survey? Where can we best use the available survey crew in southern Oklahoma? Do we need another title researcher in Arkansas to help us get caught up? What properties are in the process of closing? Which properties were acquired today? Are we paying more on properties in Creek County than in Lincoln County?

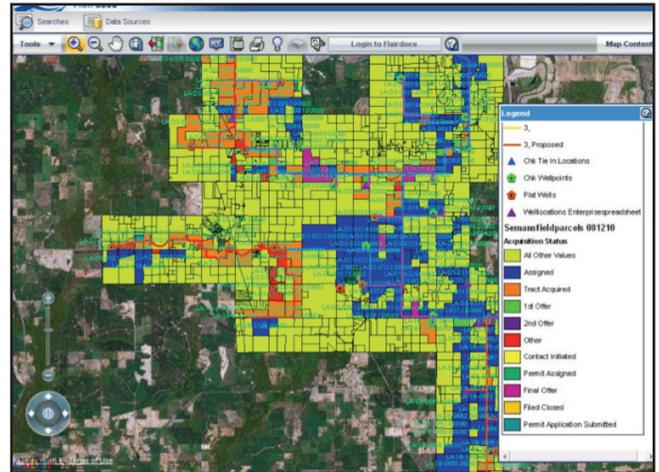
## GEOSPATIAL VISUALIZATION

One key benefit of the software is that the queries generate a visual way to address questions and give management a quick way to make key decisions. By using a number of different colors and hatching combinations, the results are communicated efficiently. They can also be used to provide executive-level reporting functions.

While working with the GIS program, new issues that arise can be quickly addressed with a point and click. For example, if there appears to be a problem property, a user can simply click on the parcel using the information tool, and the data associated with that property is instantly available. The ability to review documents, photographs, and even project journals is just a mouse-click away.

## LONG-TERM COST SAVINGS

While the return on investment in technology can sometimes be difficult to measure, one client estimated that the Flairdocs solution has saved them more than \$4.2 million each year in right of way acquisition and management. This same customer can account for another \$1.4 million in reduced training costs.



The system offers a visual way to review project information, like the location of parcels acquired.

The time and resources involved with scanning and storing documents can create a significant burden on any project. Creating electronic documents and using digital signature capability is one way to minimize these costs. Better reporting can also improve project performance and decrease project timelines, translating to lower overall project expense. Standardized forms and processes can even reduce legal and insurance costs.

Many benefits of the Flairdocs™ software tool are directly apparent, and there are others to consider, as well. With the graying of our industry, a significant amount of time and energy is spent on knowledge transfer. The time and costs associated with training new right of way personnel has been a longstanding challenge for the industry. Coupled with a shrinking workforce, the need to streamline and automate our processes has never been greater. Leveraging technology that will help capture the knowledge base of retiring personnel translates into reduced costs when it comes to training new staff.

Software solutions like Flairdocs™ offer a significant long-term return on investment. Not only does the software streamline labor-intensive processes, it frees up staff time, reduces training costs and generates ongoing efficiencies.



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*Founder and Managing Partner of Flairsoft, Dheeraj has 25 years of experience in delivering effective solutions for a variety of industries, including right of way, utilities, government and real estate services. He blends his technical knowledge and management experience in developing web-based customized solutions of businesses and clients.*