

Show Me the Property

BY BERNARD J. WARD

The findings gathered from the Right of Way and Utilities International Scan Tour to Australia and Canada, which was conducted by FHWA/AASHTO in 2008, has served as a strategic roadmap for implementing innovative best practices in the United States. Two of the nine initiatives selected for implementation include the expanded use of geospatial mapping and visualization techniques.

GIS-Based Systems

Professionals in Australia have effectively used Geographic Information System (GIS)-based systems to manage the acquisition of right of way and perform various property management activities. More specifically, the systems provide an efficient way to control the process by tracking the status, history and relationship of all parcels on a project. The use of GIS technology is further supported through public acquisition overlays used during the project planning process to illustrate the extent of the road reserve, the need to register transportation plans with the state land title registration office, and the integration of parcel databases into geo-referenced data repositories that facilitate data exchange among stakeholders.

For the property management staff, the benefits of using GIS tools include access to mapping interfaces and the ability to produce paper maps that depict the different status of each parcel, such as excess right of way, under lease, in the deposition process, and parcels that could be combined to generate a larger, more attractive parcel for disposition.

The concept of applying GIS techniques to right of way projects and asset management processes is not new. However, in the U.S., our challenge has been in developing a cost-effective comprehensive web-based system that allows users to track and share project and parcel status, as well as the ability to produce reports and GIS-based parcel documents and maps.

One key to successful implementation involves developing a national standard for depicting real property assets. This national standard would need to build on current data modeling and data standardization efforts by industry, government and academic research. A critical goal in developing this standard is to establish specific data exchange specifications to ensure that parcel data can be captured once and shared among many stakeholders without any degradation in positional accuracy and metadata content. Some of the stakeholders who would benefit from employing a national standard include transportation agencies, appraisal districts, property owners and metropolitan planning organizations.

Studies have been conducted by the National Cooperative Highway Research Program and the Texas Department of Transportation regarding the use of geospatial technologies for managing right of way asset data. The FHWA hopes to utilize the Transportation Pooled Fund Program to develop, test and report on the results of a GIS-based property asset management system using the results of recent research efforts.

Three-Dimensional Visualization

The second initiative involves the use of 3-D visualization techniques to communicate anticipated project impacts to property owners. As part of an alliance contract in Australia, the alliance team utilized 3-D visualization techniques and posted video clips on the internet to explain the project to a wider audience. Although the development of the 3-D tool was expensive, the Department of Transportation concluded that the results obtained in terms of better understanding by property owners and the public were more than enough to offset the initial investment.

The use of visualization techniques has been increasing in the U.S. The Minnesota Department of Transportation has reported positive results using 3-D video

to illustrate how a property will look in the after condition. Viewing the video gives property owners a better understanding of the scope of the project and how it will appear relative to adjacent properties.

The FHWA is exploring opportunities to expand the use of visualization techniques throughout the right of way process. To develop a clearinghouse of web-based and published resources that use visualization techniques for right of way activities, they will need to conduct a peer exchange of best practices, facilitate technology exchange and develop a scope of work for visualization contracts. The cost of developing visualization products will need to be addressed in the project development phase.

Current technologies offer innovative opportunities to more thoroughly educate the property owner and the public. In order to produce a cost-effective solution that is intuitive and user friendly, a collaborative effort must be undertaken to standardize the use of GIS and visualization systems. These visualization projects hold great promise for agents, asset managers, project information specialists and other right of way professionals who are faced with showing an accurate depiction of the property.



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