

Using 3D GIS technology to communicate development solutions to a non-technical audience.

By Mike Gritz and Jorge Morteo

Paper Abstract

Public participation is an essential part of the planning process. Taking 2D GIS data and representing it in 3D "virtual reality" helps the public, elected officials and local planners understand the impact of proposed developments. This presentation will include actual live examples of how the City of Las Vegas Planning & Development department has applied "real-time" 3D GIS technology in the public participation process to build consensus between developers, planners & elected officials/planning commissioners. Examples will include a downtown Las Vegas redevelopment project, a proposed 23-court tennis complex, a proposed seven story multiuse senior housing development in the downtown Las Vegas redevelopment area, and several more, time permitting. A very visual and entertaining session, GIS users will see how to build and analyze various development scenarios before ever breaking ground. No VBA, VB, or Avenue, just ArcView.

Paper Body

Imagine being able to fly, drive or walk through significant planning projects while they are still on the drawing board! With modern GIS visualization tools, local and regional agencies and development organizations can do just that.

The City of Las Vegas Planning & Development department currently utilizes three-dimensional visualization to create urban models from their GIS data. With virtual simulations of different projects, planners can visualize sightlines, spatial relationships and traffic flow for various buildings or development project. Using "real-time" 3-D GIS visualization tools allows a user to select the viewing mode and angle rather than accept a predetermined sight pattern. By using multiple input sources such as site plans, architectural drawings, renderings and digital photography, these models contain very realistic textures and designs.

In the City's effort to spearhead implementation of this enhanced GIS functionality, the City gained a powerful tool to assist the community and city officials in making more informed decisions. Three dimensional models made from wood, cardboard or other materials are recognized as effectively communicating the intent of projects, but they are cost prohibitive, time consuming and awkward to store. This new approach offers the same or better impact at a significantly less cost than for a typical physical model. In addition, interested parties are able to look and visualize a variety of development scenarios and analysis instantly as well as take them home on CD. As fast as a GIS data layer may be turned on or off, 3D GIS offers the ability to instantly turn on or off 3-D models in the 3D scene.

This technology facilitates discussion by helping people understand and comprehend the full scope of projects and view the potential impact of long range plans and design guidelines from a wide range of perspectives. Users can immediately change their viewing perspectives from street level to several stories above ground. Details such as

building façade, landscaping, signage, walkways and streets are examined digitally before the project is built, allow the staff to identify problems and their solutions at the best possible time, before breaking ground. Using 3D GIS visualization has assisted in bringing consensus on many projects that may have never been approved, whether they be implementing new development policies (smart growth), building schools and parks or applying for development grants. ESRI GIS software with the “SiteBuilder 3D” extension by Multigen Paradigm or CommunityViz are used to generate these simulations. No additional staff and little training is required since we are really just enhancing our current GIS by adding a new way to symbolize the data.

For more information please contact:

Mike Gritz

702-229-4606

mgritz@lasvegasnevada.gov

or

Jorge Morteo

702-229-6048

jmorteo@lasvegasnevada.gov