4.2.2 The Use of 3D-GIS Applications for Planning and Design

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With the advent of applications such as Google Earth; transportation agencies, governmental organizations and municipalities are striving for ways to convey information in an interactive 3D environment.
While 3D planning and design technologies have been around for several years, only recently have more robust 3D applications and processes been made available. The result of these recent technology advances has been the lack of standardization and guidance in selecting and implementing 3D applications and processes.
With an eye on the future, the City of Rochester has initiated a 3D GIS Spatial Model project, which will catalog GIS based data in a 3D environment. Information such as way finding, signage placement, asset management, infrastructure improvements such as a proposed intermodal station and permitting information will now be analyzed and presented in an interactive 3D environment.
This presentation will focus on

- How 3D-GIS applications were implemented
- Esri 3D GIS software utilized for implementation
- Planned enterprise implementation of the 3D environment
- The tools and techniques used to create the 3D environment
- Barriers toward Investment Costs
- Benefits of the technology

Integrated Design + Management (IDM) can be used as a key TOOL when striving for an innovative approach to master planning and design issues to save time, money and consensus on many projects.

Key aspects of IDM that will be featured during the presentation are:

1. A 3D graphical database used from conception to operations and management. Databases include;
    a. BIM applications such as Revit
    b. 3D-GIS applications
    c. Traffic micro-simulation - Corsim, Synchro and VISSIM
    d. Scheduling (4D)
    e. Cost Estimating and Tracking (5D)
2. Unlimited viewing time from an infinite amount of viewpoints
    a. Improved campus recruiting by reaching perspective students with technology that they embrace.
    b. Greater understanding, which leads to Stakeholder consensus
    c. Enhances public involvement and community awareness
    d. Manage Multiple Databases from one application.
3. Improved Facilities Management
    a. Simplifies Project Pre-Planning reduce Silos of Data
    b. Review conceptual plan scenarios in 3D
    c. Streamline environmental impact statement process
    d. Manage asset inventories and utility data in 3D
    e. Improve Space Utilization Analysis
    f. Collision Detection
    g. Construction Sequencing
4. Featured Case Study The 3D GIS Spatial Model project for the City of Rochester, New York.