



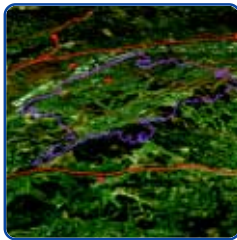
FORMA Systems databits

A Publication of the Forma Companies

GIS system Launched for newly formed public agency in record time!

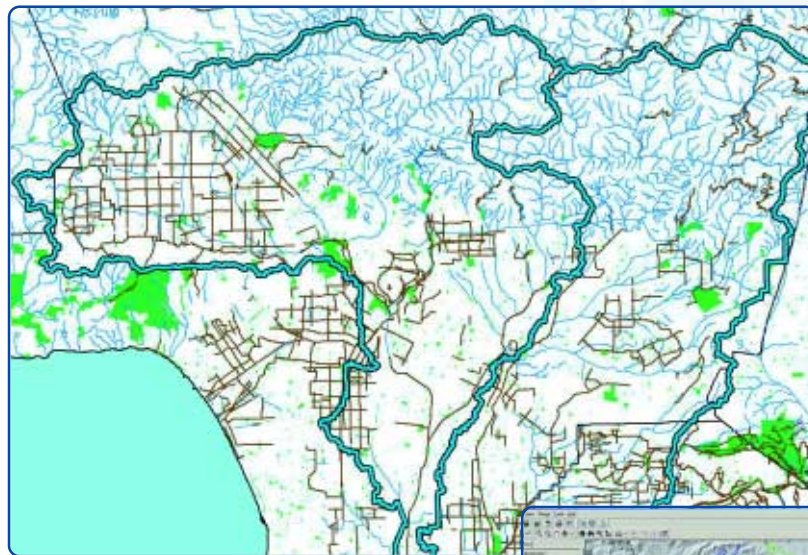
The GIS data collection and cataloging of hundreds of data sets and information covering more than 1.2 million acres within the Southern California region was completed within six months time.

The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) is an independent State agency within the Resources Agency of the State of California. State law established the Conservancy in 1999 (Chapters 788 and 789, Statutes of 1999). Its jurisdiction includes the San Gabriel River and its tributaries, the Lower Los Angeles River and its tributaries, and the San Gabriel Mountains, Puente Hills, and San Jose Hills. It was established to preserve urban open space and habitats in order to provide for low-impact recreation and educational uses, wildlife and habitat restoration and protection, and watershed improvements within its jurisdiction.



records of data in digital and hardcopy format, as well as aerial imagery at 1 meter per pixel resolution for the entire project area. Our collection of data included CAD drawings, Arc Info coverages, and Arc View shape files, in addition to hardcopy maps and other documents containing reports, studies, and summaries.

The data collected throughout the project was cataloged into the RMC California



Environmental Resources Evaluation System (CERES) on-line catalog and database. Records were entered and updated within the catalog on a daily basis. The catalog contained over 480 records of information, which included reference materials, hardcopy information, data contacts, GIS digital data and descriptions, imagery, maps and other documentation. The records within the

catalog contain a unique number, which can be linked back to the data accumulated within the GIS system. This unique number provided the link needed to access information from both the catalog and the GIS system. This process proved to be a very useful tool to the project team for updating, accessing, and printing catalog records.

In addition to working closely with the Department of Fish and Game and the RMC, FORMA Systems contacted and received data from several local and regional agencies and organizations to develop base

mapping and analysis for the region-wide Open Space Plan. FORMA Systems was responsible for the collection of data sets consisting of biological, environmental, demographical, infrastructure, planning, and open space related data. In addition to contacting over 90 local jurisdictions and 50



organizations, major federal and county agencies who have been involved with the data collection effort included the California Department of Fish and Game, Army Corp of
Continued...

...Continued

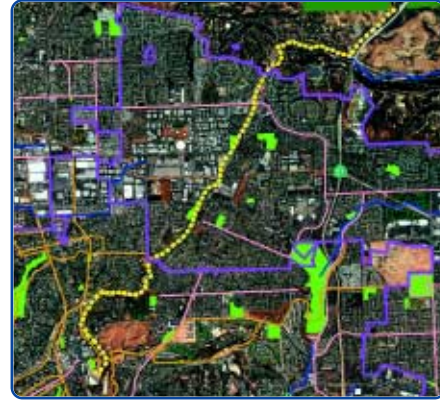
Engineers, Los Angeles County Public Works, Orange County Planning Division, United States Forest Service, United States Fish and Wildlife Service, Metropolitan Transportation Authority, Orange County Transportation Authority, and the Los Angeles Department of Transportation.

The demographic and open space planning analysis was performed by FORMA Systems and the public research project

summarized by zip code and by community.

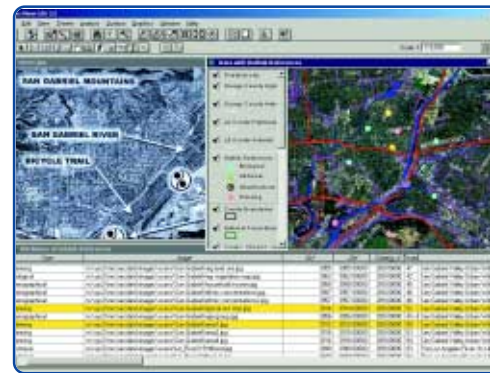
As a useful GIS tool, FORMA Systems built a relational database application using ESRI's ArcView software with Microsoft Access, which hotlinks georeferenced spatial features to images, maps, and other project documents. The RMC will use this custom-built application in the next phase of the project to analyze and organize the vast amount of

strong information base needed to research existing and future land acquisition opportunities.



The GIS system can be used as a tool to implement funding strategies for the RMC. Funding is an important financial component for the RMC to gain support for acquiring open space lands and finding other opportunities. With

the power of GIS, the RMC has the ability to research proposed sites available for acquisition. The RMC can quickly display and analyze data layers such as aerial imagery, existing park and open space locations, political or



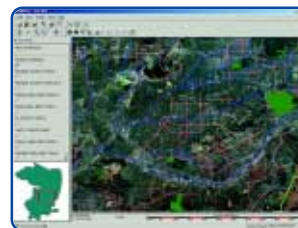
jurisdictional boundaries, and land ownership information as a whole to find information related to the funding and status of open space lands.

team of LJS Group, Inc. FORMA Systems analyzed demographic information including population, age, ethnicity, gender, and median-family income by zip code and by community within the RMC project area. These findings consisted of totals by demographic category for each zip code and community. The open space planning analysis consisted of identified and summarized land use categories by square mile within the project area. As a result, the open space land use categories were identified and

collected data for the planning of open space areas.

The information collected and cataloged will be used within Phase II of the Open Space Plan for the planning of Open Space areas. The GIS data will be utilized by the project team to locate and analyze areas for incorporation into the plan. The cataloged hardcopy information will be used, as well as GIS data, to gain additional insight and perspective within the various jurisdictions. This large collection of data created the

The benefits of such a large region-wide project provide the ability for GIS to help secure greater funding through a collaborative effort of many agencies. Funding is of vital importance to the RMC as it can affect the various stages of



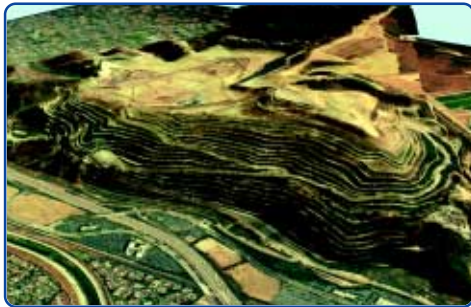
the Open Space Plan. It was important to include agencies and organizations throughout the project to help gain financial and community support. The benefits of GIS are once again remembered as GIS continues to improve the quality

of life by identifying opportunities and finding solutions, which can be used by organizations, such as the RMC, to create a better environment for our community.

3-D Modeling & Simulation

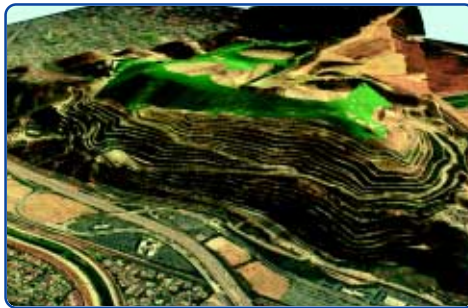
Multi-Platform 3-D Modeling and Visual Simulation

FORMA Systems is using Visual Simulations to provide “before and after” analysis of projects. Visual and Video Simulations are useful tools in the design process and in communicating the future look and feel of a proposed project.



FORMA Systems recently completed a visual simulation for the Los Angeles County Sanitation District to provide a visual analysis of the Puente Hills Landfill. This analysis was completed from seven vantage points and

depicted different alternatives for the future use of landfill in the years 2001(existing), 2003, and 2013. These alternatives included alternative grading proposals, and a future golf course on the site. The simulations depicted the future height of the landfill after closure from a variety of locations in the area. These simulations were applied as part of an Environmental Impact Report for future uses of the site after closure, and for public hearings.



FORMA Systems prepared a video simulation of an existing site, with the proposed project. The video simulation was utilized to demonstrate how the project responded to the City’s Scenic Guidelines, as well as demonstrated to the local community groups and decision-makers the limited visual impact that the project would create. This video illustrated that the majority of the site will remain undeveloped, and that the grading that would be visible, would be contoured to blend into the open space areas.



Improving Public Transportation!

The Orange County Transportation Authority (OCTA) hired FORMA Systems and Excel Info Tech, Inc. to provide GIS services to their transportation planning team for:

- Project Development and Modification
- On-Site Technical Support
- Database Maintenance and Administration Support
- GIS Interface with other Transit Operation Programs
- Internet Map Server Applications

OCTA was formed in 1991 by the consolidation of seven separate transportation agencies to develop and implement unified transportation programs and services for Orange County.

OCTA has been using GIS for over 10 years. The GIS software used by the transportation planning team consists of ESRI’s suite of GIS



products including ArcInfo, ArcView, and MapObjects. OCTA has been a long supporter of hosting GIS-user group meetings within Orange County. The GIS community comes from all parts of Orange County to attend these informative meetings.

Currently, OCTA uses GIS data and applications for a variety of projects consisting of bus routing improvements, regional transportation improvement projects, and updates of bus routes, maps, and schedules, which can be accessed via maps on-line. The application development teams of FORMA Systems and Excel info tech, inc. will help OCTA improve their application user-interface, as well as the functionality of the current and future applications.

FORMA Systems is looking forward to working with OCTA providing professional GIS services to enhance and improve their existing system and applications.

Decision-Makers Get Realistic View

Unocal Land & Development Company is using new technology to spread the word about The Canyons Specific Plan. As part of the entitlement process, FORMA Systems is utilizing a variety of new technologies for the analysis and community outreach programs during



the planning phase of The Canyons. Unocal Land & Development Company, the majority landowner, with Messenger Investment Company and Big Sky Ranch, are proposing a 2,880-acre mixed use community in west Simi Valley that will contain a large business park, regional park, community park, memorial park, and four residential villages.

FORMA Systems is using 3-D Modeling and Visual Analysis to review the proposed land use concepts and to provide City staff and decision makers with a realistic view of the project after construction. This also allows additional alternatives to be reviewed, and views of the site analyzed from various locations off-site.



FORMA Systems technicians drape aerial photographs and topographic data over wire-frame terrain models to create 3-D multi-media presentations. These simulations of the various development proposals allow the City staff and decision-makers to carefully review each alternative of the plan.



FORMA Systems also set up a website for the project to provide updated information on The Canyons including a calendar of upcoming project presentations and public meetings, a detailed description of The Canyons, and a feedback section for visitors to the site to make any comments or suggestions. The site,

www.simivalleycanyons.com, has received favorable reviews as a very accessible way to provide the public with detailed information on the project and updates on the current status of the entitlement process.

In addition to the 3-D modeling and website, FORMA Systems is also using GIS technology to provide data for impact analysis in the environmental review of the project. FORMA Systems has incorporated the biological habitat data that was prepared by the project biologist and analyzed the data with the proposed project to determine impact studies. This allows the land planners the data to see what impacts are occurring where, and the ability to make adjustments to the land plan to eliminate certain impacts.



Analyze This!

FORMA Systems worked alongside Functional Solutions Group to develop the Sales Tracking and Reporting System (STARS), which consists of database functionality, designed for tracking property sales within developments.



During the sales process, staff members for builders or developers can use this application to analyze existing and available sites in relation to individual projects, tracts, phases, plans, or lots. This application also provides the staff with querying, reporting, editing, and printing capabilities as well. Using the tools built into the application the end-user can easily add, change, or update information on-the-fly. In addition, the interactive capabilities of this application makes it easy for staff members to perform “what-if” scenarios based upon amount of home sales, costs of existing property, and the location of future properties.

FORMA Systems plans to incorporate a mapping component to the STARS application using ESRI’s MapObjects development environment.

Project Management Now Available in 3 levels

FORMA Systems offers three levels of project management which provide the project manager with multiple levels to accommodate your current requirements. These levels are stated as follows:

- Level I Digital Brochure**
- Level II Dynamic Library System**
- Level III Interactive and Analytical Data Management System**

These different levels increase in functionality and value as they range from Level I to Level III. Each level builds upon the information and technology presented in the previous level. Level I presents the concept of a digital brochure for organizing your information. Level II focuses on the dynamic document library system with the ability to add or remove information. Lastly, Level III gives the user advanced GIS technology through interactive analysis using custom designed applications and business data.

Within these levels, a wide range of multi-media applications, files, and actions can be added to give the modules a variety of interface functions,

flexibility, and usability. Multi-media options such as movies, audio, hyperlinks, and animations can be used to increase the look and feel of the modules.

The Project Management Module provides the project manager with customized information management tool, which put all the data pertinent to your project at your fingertips. You will have increased accessibility to the data you need and the ability to manage multiple data formats in a central location with minimal computer requirements.

For example, on your desktop or notebook computer...

Click the Plans and Graphics icon and gain immediate access to your current development plans . . . or

Click the Mitigation Monitoring icon and identify (or remind yourself) which conditions of approval must be met when and by whom . . . or

Click the Parcel Library icon and access plans, statistics, reports, pictures, on a parcel or planning area basis. . .

Or make note of changes right on your plan and fax or email clear direction from your computer to your consultants. Show visual simulations to community groups. Search your project EIR by topic or key word. The Project Management Module can contribute to your productivity and keep you ahead of the pack in the information game.

Over 4 Million Acres Served

FORMA Systems recently passed the 4,000,000-acre mark in terms of mapping projects. (Four million acres is more than 6,200 square miles.) This includes mapping for GIS, Visual Analysis, and AutoCAD projects. The mapping includes Los Angeles, Orange, Ventura, Riverside, San Bernardino, and San Diego counties. The type of mapping included:

- Resource Mapping
- Land Planning
- Utilities
- Viewshed Analysis
- Digitizing
- Modeling
- Land Use Mapping

Clients include large corporate landowners to small individual landowners, government agencies, and public utilities. These maps were used for entitlements, impact analysis, environmental review documents, and litigation.

Visualization with GIS

GIS as a Tool
 Design Information Systems (DIS) is an integrated information system for the capture, storage, retrieval, analysis, and visualization of spatial information. A GIS enables users to:
 • Store Data
 • Display, Manipulate and Query
 • Querying, Printing, Measurement, Reporting
 • Analyze and Model
 • Visualization and Presentation
 When the data is processed, GIS can be used to a wide range of applications:
 • Planning Studies
 • Land Use Planning
 • Landmark Design
 • Resource Planning

Layers of Information
 GIS is composed of several layers of information, and each layer represents a different type of data. These layers are stacked on top of each other to create a 3D visualization of the data. The layers of information are:
 • User Data
 • Aerial Imagery
 • Vector-based Spatial Data
 • Vector-based Thematic or Classification Data
 • Vector-based Labels

CAD Visualization
 FORMA Systems offers advanced rendering and visualization services using AutoCAD software. Our team of experts can create 3D models of your project, allowing you to visualize your design in a realistic and interactive environment.

Benefits
 Benefits of GIS include:
 • Elimination of redundant activities, maps and data
 • Better map review and publication
 • Ability to use data from other sources within and outside the organization
 • Ability to integrate spatial data and analysis from previous projects
 • Ability to integrate output from various modeling and CAD packages
 • Better understanding and visualization of data and information
 • Improved corporate and organizational image
 • Increase project effectiveness by rapidly analyzing multi-disciplinary data sets
 • Informative sharing reduces workload

GIS Visualization
 "Visualization is an important component of GIS. It allows users to see the data they are working with in a 3D environment. This makes it easier to understand the data and to make decisions based on the visual information." FORMA Systems offers advanced rendering and visualization services using AutoCAD software. Our team of experts can create 3D models of your project, allowing you to visualize your design in a realistic and interactive environment.

Hillside Analysis
 The visualization of slope information allows the user to see the steepness of the terrain. This information is useful for a variety of applications, including site planning, erosion control, and land use planning.

Draping
 FORMA Systems designs the 3D visualization for the 3D visualization of terrain. This includes the visualization of terrain, vegetation, and buildings. The visualization is created using AutoCAD software. Our team of experts can create 3D models of your project, allowing you to visualize your design in a realistic and interactive environment.

Landform Definition
 GIS visualization allows the user to see the terrain in a 3D environment. This information is useful for a variety of applications, including site planning, erosion control, and land use planning.

Regional Studies
 FORMA Systems is a leader in the field of regional studies. Our team of experts can create 3D models of your project, allowing you to visualize your design in a realistic and interactive environment. Our team of experts can create 3D models of your project, allowing you to visualize your design in a realistic and interactive environment.

www.formasystems.com

ESRI, A Business Partner Expert

The Environmental Systems Research Institute (ESRI) is the leading GIS software manufacturer in the world. With over 300,000 national and international organizations using their software, ESRI is the GIS leader of today, and has been for the past 32 years. ESRI is the creators of world-renowned ArcView GIS, the benchmark GIS software, ArcInfo, and the latest new development - ArcGIS.



FORMA Systems is excited about ESRI's newly-developed ArcGIS products.

The ArcGIS system has revolutionized the GIS environment by making a variety of tools available to a much broader audience. It is an integrated system of GIS functions containing three key parts, including the ArcGIS Desktop software, ArcSDE gateway, and ArcIMS software. The Desktop software includes ArcView, ArcEditor, and ArcInfo products giving the user high-level editing, data automation, mapping, and analysis tools.

FORMA Systems is currently developing Internet mapping applications using ESRI's ArcIMS software. The ArcIMS software and Internet technology gives the user the ability to deploy data, maps, and applications via the Internet. ArcIMS web sites can be accessed from the free ArcIMS Java viewer, ESRI's ArcMap application, ESRI's ArcPad (ESRI's mobile GIS application), and other wireless technologies such as cellular

phones and PDA's. Key capabilities consist of ArcIMS include the capture and delivery of aerial images directly to our clients, query building on-the-fly, real-time geographic data extraction, and geocoding functions for address searching.

With the proven analysis functionality and valuable data contained within ESRI's Business Analyst software, FORMA Systems can analyze potential markets as they relate to demographic information and our clients' market concerns. Using the Business Analyst software, our staff can create maps and reports to summarize demographic information within market areas across the United States. We can provide our clients with the information they need to make accurate and educated decisions regarding their projects.

FORMA Systems has been an ESRI business partner for over five years. With this relationship, FORMA Systems has been an ESRI authorized developer, reseller, and trainer. FORMA Systems uses ESRI software to complete its everyday operations, and with our experienced staff, we have the ability to give our clients expert advice on what steps are required to get the job done. FORMA Systems offers special software deals to Public Agencies, Corporations, Small Businesses and School Districts, etc. Please contact info@formasystems.com to find out how you can take advantage of these great deals.

Train with the best!

FORMA Systems offers an ESRI-certified GIS training class, *Introduction to ArcView GIS*. It is a two-day course that provides a conceptual overview and hands-on experience using ArcView GIS, the most popular GIS software in the world. FORMA Systems has participated in the Authorized teaching program for 4 years, and has an authorized instructor on staff. FORMA Systems and its qualified personnel have the ability to customize the training sessions by offering supplemental classes to cover topics that are not addressed in the *Introduction to ArcView GIS* course and adapt the instruction to be pertinent to the student's field of expertise. FORMA Systems has in-depth project experience using ArcView, ARC/INFO, and AutoCad and is willing to incorporate additional education in the training courses offered.

For more information on how **FORMA Systems** can help you please call us at **949/660-1900** or visit our website at www.formasystems.com



FORMA SYSTEMS

GIS
CADD
Digital Mapping
Simulations
Application Development

17500 Red Hill Avenue
Suite 100
Irvine
CA 92614
949.660.1900
www.formasystems.com