San Bernardino County Google Earth Enterprise Case Study

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Mike Cohen
Information Services Application Development GIS Team Leader

Introduction

San Bernardino County in California is the largest geographical county in the contiguous United States, covering over 20,000 square miles of land. The county's Information Services Department (ISD) provides a variety of professional information technology and communications services to all departments, special districts, and other federal, state and local government agencies. IT services include: twenty-four hour a day computer operations and systems support, seven days per week; countywide telephone, microwave, radio and WAN/LAN administration; access to countywide electronic mail, the Internet and the County's Web site; business system development and maintenance; management for multi-departmental automation projects; consulting for various vendor platforms; and integrating document management and workflow solutions.

Challenge

In March 2000, California voters approved a bond allocating nearly $2 billion to support safe drinking, water quality, flood protection and water reliability projects throughout the state. Some of these funds were earmarked to fund detailed drainage and land use maps of Big Bear Lake, the top freshwater tourist destination in southern California. The Geographic Information System (GIS) maps are an essential part of the overall plan to develop a Total Maximum Daily Load (TMDL) Implementation Plan for the Big Bear Lake watershed. San Bernardino County acquired high-resolution terrain data for the Big Bear Mountains in support of this project.

Since the parties involved with this effort included Local, State and Federal Agencies as well as private consultants scattered throughout the United States, the County needed an Internet solution that would enable the data to be viewed with a Web based client. In order to provide a compelling and dynamic way of displaying the data, a 3D flyover experience was needed. "It was critical that we could be able to display our imagery in a flyover type model and distribute it via an Internet interface," says Mike Cohen, Information Services Application Development GIS Team Leader for the county.

The solution needed to be both user friendly and feature powerful visual capabilities to display aerial imagery, parcel data, and street data.

Solution

At the time, a solution called Keyhole performed the desired functionality. Keyhole was then acquired by Google and shaped into Google Earth Enterprise. At this point Cohen and his team compared Google Earth to another competitive product. "It was a good product but at that time did not support the Internet delivery model that we needed for this project," Cohen says.

The decision was made to go with Google Earth.

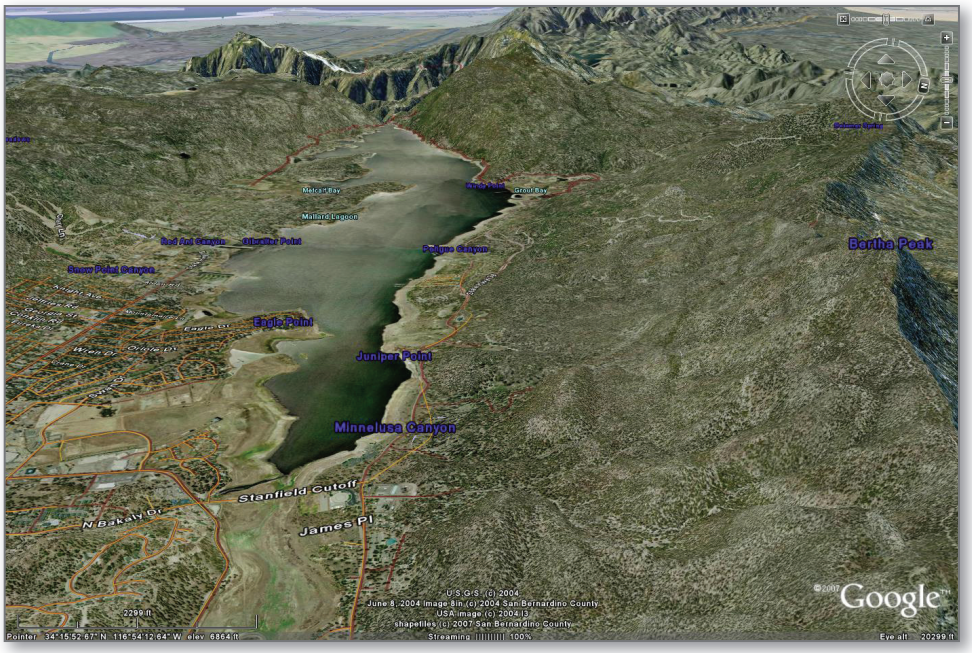
The integration process went smoothly. "Our original support person showed us how to integrate our parcel data and represent it inside of the fusion server without having to redo the entire set of data," says Cohen.

ABOUT GOOGLE EARTH ENTERPRISE

Google Earth Enterprise connects geographic data to your people, work and processes by providing a fast and simple to use interface for non-specialist users to explore and interact with massive datasets of your own geospatial data. Asset tracking, marketing properties and site surveying are a few examples of the business processes that Google Earth Enterprise simplifies. Data only gets used if people can find and consume it – and there's not a better way to finding and visualizing it than with Google Earth!

For more information visit http://earth.google.com/products.html.

Since that transition, Google has greatly enhanced Google Earth features. The Enterprise version features a powerful KML language, enabling powerful GIS functionality to be incorporated into the solution.



The public version of Google Earth has made the product familiar to millions of users worldwide, an added bonus for Cohen who says, "What we're leveraging is that people are comfortable with the public version already. There was no learning curve."

Cohen is impressed with how many users can access data simultaneously. "What's really important is that we can support up to 250 concurrent users in our current Google environment," he says. "I have over a hundred clients currently active and that's growing."

Results

Since the initial adoption of Google Earth, San Bernardino County has steadily increased the use and availability of the solution to other departments and the public, with across-the-board benefits. Soon, all departments in the county that have land use issues will be required to use Google Earth for presentations.

"County Leaders use it as part of their decision-making process for economic development, land use, and to view flood or fire areas," says Cohen. "It's a very powerful way to allow them to see specific terrain and the areas around it. It's a tribute to this technology that the county would recognize Google Earth as their preferred message of display."

Other departments use Google Earth to load data in and evaluate data. "Our Economic Development Agency can use it to show a new economic zone," says Cohen. "They can fly in, see where the freeways, railroads, and airports are, and get a perspective they can't get any other way. The flyover model is very powerful. It's proven to be a very successful tool for economic development."

Not only is the data more manageable, comprehensive, and accessible, it's also easier to share. "People buy a parcel in the middle of the desert and ask where it is in relation to the area. We can search by parcel number and rapidly locate any parcel in the county. I can then email the customer an overview image within seconds and they can zoom out and get a big picture."

"We have Fusion Servers set up in lab, development and production environments. We develop and process our own layers of data, including our parcel and street network," Cohen says. For example, the county's parcel base map data features information on approximately 788,000 land parcels, allowing users to type in a parcel number and then "fly over" that location to learn more about surrounding geography and tax costs.

With Google's initial support Cohen's team was able to incorporate this and other massive quantities of internal data into Google's existing product's data files. The County is now capable of managing and integrating its own data independently.

Because the County has some of the fastest growing urban areas in the country its data needs to be updated regularly. Cohen's team perfected techniques that allow them to enter new aerial imagery into the system quickly. Many departments, including Public Works, Land Use Services, and the Tax Assessor's Office use this current information to improve their workflows, efficiently manage projects, and provide better service.

San Bernardino County also allows the Army Corps of Engineers to access county data. "They've been using it very successfully to view high quality data for Big Bear," says Cohen.

Commercial clients benefit, too. "Real estate agents find it to be very helpful assisting with property sales. If someone is looking for 160 acres a certain distance from railroads and freeways, it's a successful tool they can use from outside the county," says Cohen.

In fact, anyone inside or out of the county can see such data. "I can build a networked linked KMZ file that allows any Google client worldwide to view all Assessor Book Boundaries," says Cohen. These users can view online versions of every assessor book in the county – over 500 books containing upwards of 21,000 pages referencing every single parcel in the county.

Conclusion

Cohen's satisfaction with the solution is tremendous. "It helps us in our goal to reach the public and provide better services for every citizen or entity that wants to do business with the county," he says. "And it helps county workers to work smarter and creates better decision models. The old saying 'A picture's worth a thousand words' – is so true with Google Earth. You can zoom in and look at a house or property, the slope on a mountain where a fire has burned, or fly into the canyons and see how steep that terrain is and why a flood occurred. That's the kind of thing where words don't describe it and a picture helps to clarify and support the descriptions. Users get the complete picture of what's out there. It's just amazing."

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