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City of San Diego

"Synergy" Leads to Better Service for Street Division

For years, government agencies across the County of San Diego have been at the forefront of using geographic information system (GIS) technology to better serve their communities. This includes the City of San Diego Street Division, which has improved its SAP/GIS interface functionality program called Synergy by creating an Intranet application allowing City employees to track asset locations and the status of service requests. Employees also provide online customer service to citizens using advanced GIS Internet applications.

"We've come a long way since our first efforts to leverage GIS within the SAP environment," says Elizabeth Mueller, project manager, San Diego Street Division. "By integrating these two previously disparate systems, we can monitor overall information flow and how this information is used. Working together with ESRI business partner CyberTech Systems, Inc., we have made significant enhancements to Synergy. Our improved SAP/GIS interface, along with the Internet and Intranet applications, is the latest development in this effort."

The Street Division employs more than 350 people and maintains 2,863 miles of streets and 5,000 miles of sidewalk. It is also responsible for the operation and maintenance of street trees, storm drain pipes and channels, storm drain pump stations, storm wat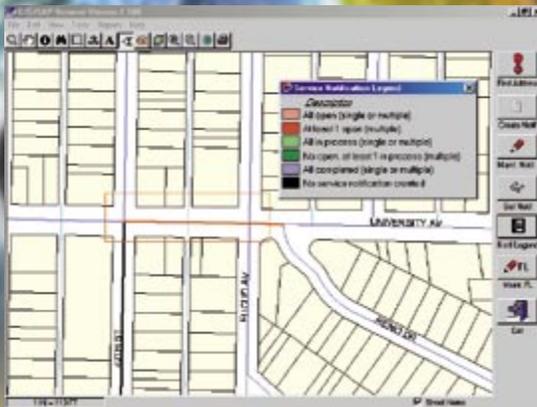er pollution control, traffic and street signs, streetlights, traffic signals, street sweeping, bridges, fences, alleys, and guardrails.

The division first integrated GIS with SAP in 1999 to leverage its GIS resources within its SAP framework. "Everything we do in SAP is location-based," said Mueller. "We integrated GIS with our SAP system to avoid the old problem of crews going out for a job request and not finding the drain, sign, or other asset because the location is not right. Maps provide an intuitive way to look for and quickly find assets."

Improved SAP/GIS Interface

The division, ever evolving its technology platform, has extended its SAP/GIS interface with improved ease-of-use and greater functionality.

"We've included commonly used layers, such as parcels and road networks, to make it easier to geographically locate infrastructure assets," says Darren Sam, the Street Division's GIS engineer. "You can quickly zoom to an asset and select it to assign a work notification. The mapped streets and parcels quickly orient the user to where the asset is located."

The address search capability is perhaps the most lauded new feature. Users can enter an address or cross streets, and instantly they are looking at a digital map with the exact location of the work order and related asset information, all managed in SAP.

"A user doesn't have to scan the whole city to find one streetlight among 30,000," says Sam. "They can select an asset, such as a storm drain, and then look at characteristics in a popup window including length of pipe, diameter, type

of material, flow direction, and more. This information is essential for operational purposes."

Advanced Internet Application

The Street Division developed a Web GIS/SAP application to provide an online work request capability to residents of San Diego. With just a few clicks of a mouse, anyone with Internet access can request service such as replacing a downed City streetlight or unclogging a storm drain.

"Using GIS, our Web site allows a citizen to pinpoint where they are requesting service using a digital map, even if they don't know the exact location," says Mueller. "This really helps people because often they're requesting service, for example, for something they see while driving on their way to work and they don't have an exact address but can locate it on a map."

Users have the option of locating assets by address, ZIP Code, or community. Once users locate the asset on the digital map, they can use a pulldown menu to request service and add any pertinent details. Users then receive a work notification number that they can use to go back online and check the status of the work request. In addition, once a work order is completed, an e-mail is automatically sent notifying the person that the request has been fulfilled. Customer service representatives also use the Web GIS application to more easily verify the asset's location before generating the work order.

Intranet Serves Employees

The Street Division also created an Intranet mapping application used by division employees and available to all City of San Diego employees. Information on work orders is available to citizens as well as employees via the Web.

GIS capabilities allow users to quickly locate work order sites, track work order status, and perform spatial queries to create digital maps. For instance, an employee in the Water Utilities Division can locate a work request sent to the Street Division on a digital map, then click on the work site icon to view related information and completion status. In another example, a user can perform a query to view all "unclog drain" work orders. The application uses SAP and the Web to integrate previously disparate data; GIS is used for spatial analysis and data visualization.

The Next Steps

The division is embarking on a mobile GIS project that will allow wireless GIS capabilities integrated with GPS out in the field. "We already use GPS technology for collecting asset data and verifying information," says Mueller. "Soon, say, for street sweeping routes, we'll get exact locations of when and where street sweeping happens. If a citizen calls with a request or question, a division employee can look at a digital map and see when and where sweeping took place because the location data is collected in real time via mobile GIS."

"With the combined capabilities of ESRI and SAP technology, we're seeing a future of efficiency, cooperation, and improved records management."

Elizabeth Mueller
San Diego Street Division

Future Applications

The Street Division is planning to broaden the use of the program. In the future, the Web application will also help City employees view all work by all divisions in a particular area via GIS. Streets scheduled for digging and resurfacing can be targeted by different agencies for a myriad of work projects. This will eliminate the need for those interested in the same kinds of information to get on the phone, request written reports, and go through them line by line, pinpointing projects that might affect them or their department.

"Departments will no longer have to conduct meetings on a regular basis to share information," says Mueller. "Information, and the ability to analyze and visualize that information geographically, will be available to anyone using the Web application. In addition to helping different divisions share information, it will help them respond more quickly to citizen requests, because they'll have quicker access to information stored online.

"With the combined capabilities of ESRI and SAP technology, we're seeing a future of efficiency, cooperation, and improved records management. However, the most important feature is the power to provide excellent customer service to our citizens."

Special thanks to Elizabeth Mueller and Darren Sam of the City of San Diego Street Division for providing information and screen shots for this case study.

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