

Resort Mecca Expands GIS Duties

Program begins gathering data for four other departments.

For the city of Palm Desert, CA, the success of its nine-year old GIS program has been an ongoing source of municipal pride. That's why, when the city voted to expand the program to include a wider variety of public works, traffic, recreational, and other municipal assets, it also decided to upgrade its aging, outdated GPS data collectors with newer, more accurate, lighter weight equipment.

"To select the right equipment for the job, we compared four well-known and competing handheld GPS receivers for accuracy, cost, and accessibility to technical support," said John Urkov, GIS technician. "Two competitors were pretty much eliminated at the outset: one we considered too costly and the other didn't run ESRI's ArcPad software (www.esri.com). The remaining two candidates were put through an extensive head-to-head, two-month field competition."

The clear choice for meeting the program's growing demands: the Magellan MobileMapper CX (Magellan Navigation, Inc., pro.magellangps.com).

To help measure the accuracy of the two units, the GIS department was fortunate to have right in its own parking lot a city benchmark whose position had recently been surveyed to within one centimeter. Virtually every work day for about two months, under a variety of weather and satellite conditions, the two competing handheld units were compared for accuracy and reliability. The daily comparisons yielded clear results. "The MobileMapper outperformed its lone competitor more than 80 percent of the time," Urkov said. "Both pre-processed and post-processed,



John Urkov, GIS Technician, City of Palm Desert, collecting data with the Magellan MMCX on Palm Desert's Hopalong Cassidy Trail.

MobileMapper data was more defined and accurate compared to the competing handheld, which produced points significantly more scattered and less accurate."

The accuracy of the two units was also compared by walking and logging GPS polyline data for city features.

"We would walk and collect GPS data with each unit simultaneously and compare the lines using all our georectified aerial photos and other GIS data which we knew was accurate. The MobileMapper lines fell right where they should be while the competing unit—when it didn't lose fix and lock up—produced lines that were jagged and all over the place."

Superior accuracy alone would have been reason enough to select the MobileMapper CXs. But city officials

were in for a pleasant surprise; it was also the low-cost solution of all the receivers and about half the cost of the unit it competed against and beat on accuracy.

"We were delighted to find the Magellan had superior accuracy since it had the lowest price by half," said Urkov. "What's more, when we needed product support, we found Magellan engineers speedily provided good solid answers and solutions to our questions. Magellan clearly offered the superior support team and experience."

"With the new MobileMapper CX, it's easier than ever to set up a simple GPS collection project and give the device to a non-GIS staffer. Magellan's MobileMapping software is extremely easy for anyone to use," adds Urkov.

Expanded GIS Program

GIS has grown in importance for Palm Desert, a wealthy residential and resort community that's home to more than its share of celebrities. Like many cities, Palm Desert has found GIS to be a vital component to city planning and administration. Four Palm Desert departments are the first beneficiaries of the expanded GIS effort using the new Magellan MobileMappers.

The Landscape Department is receiving a complete mapping of its irrigation equipment, water meters, controllers, and sensors. In addition, the landscape areas they are charged with maintaining are being defined in terms of square footage to better allocate irrigation resources.

Hiking is a popular pastime in Palm Desert. Existing trails were not well inventoried and existing maps weren't as accurate as officials would like. In laying out new trails, the Planning Department needed to know exactly where prospective trails would traverse, whether through protected wildlife protected areas, particularly Bighorn sheep areas that need to exclude unleashed dogs; through adjacent jurisdictions; and even private lands that would require permission and coordination. For trail work, the MobileMapper is



Orthophotographic image has been overlaid with points taken by two individuals walking the perimeter of the walkway. The polylines are the connected points; hence the two parallel lines that virtually perfectly match the orthophotograph, which visually shows the walkway itself.

used with the Magellan Precision Antenna carried in a backpack to allow for hands-free data capturing and an added degree of precision. With the antenna, trail inventorying is as simple as starting the MobileMapper to log continuous vertices and then hiking the trail.

The Traffic Department is undertaking a complete city-wide inventory and

mapping of all its signage, signals, and traffic control vaults. Once the inventory data base is complete, road crews will be able to maintain the data base by logging additions, removals, modifications, or location changes.

Public art has long been important to Palm Desert. Throughout the city there is a large amount of public art. A city ordinance requires public art be incorporated into the landscaping of any new developments. One of the projects being undertaken for the Art in Public Places Program is mapping of the city's public art, with all the information about each piece described. Within the GIS layer, each item of art is hyperlinked to a picture of the art with all the information about the piece, the artist's name, date of acquisition, etc.

Using ESRI's ArcPad Application Builder software, the GIS department is building a customized ArcPad application for each of the departments. Personnel from Landscape, Traffic, and Public Works, will soon be logging data directly into the MobileMappers, thus ensuring up-to-date GIS data. The low cost and ease-of-use of the MobileMapper CXs help make this decentralization of data creation possible.



A test of the Magellan MMCX, as two individuals walk on opposite edges of a Palm Desert Park sidewalk, shows how accurately and smoothly the unit captures line data.