

GIS in California's desert

Following a head-to-head competition, Palm Desert chooses MobileMapper CE for expanded GIS duties



John Urkov using the Magellan MobileMapper CE

—By Palm Desert, California, GIS Department

For the city of Palm Desert, Calif., the success of its eight-year-old GIS program has been an ongoing source of municipal pride. That's why, when the city recently 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wider variety of public works, traffic, recreational, and other municipal assets, it also decided to upgrade its aging, outdated GPS data collectors with newer, more accurate, lighter equipment. The Magellan MobileMapper CE was a clear choice.

"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. The remaining two candidates were put through an extensive head-to-head, two-month field competition."

We measured the accuracy of the two units using a city benchmark in the parking lot of the GIS Department, whose position had recently been surveyed to within one centimeter. Virtually every work day for approximately two months, under a variety of weather and satellite conditions, the two compet-

ing handheld units were compared for accuracy and reliability. The results of the daily comparisons were unmistakable. "The MobileMapper CE outperformed its lone competitor more than eighty percent of the time," Urkov said. "Both pre-processed and post-processed, MobileMapper data were 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 geo-rectified aerial photos and other GIS data which we knew were accurate. Sure enough, the Magellan 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 Magellan MobileMapper CE. But city officials were in for a pleasant surprise; it was also the least costly of all the receivers we considered and about half the cost of the unit it competed against and beat on accuracy.



Comparing the MobileMapper CE with other units

“We were delighted to find the Magellan had a competitive price tag, in addition to superior accuracy,” said Urkov. “What’s more, when we needed product support, we found Magellan engineers speedily provided solid answers and solutions to our questions. Magellan clearly had what we needed.”

Palm Desert’s 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 two new Magellan MobileMapper CEs.

The Landscape Department will benefit from complete mapping of its irrigation equipment, water meters, controllers and sensors. In addition, in order to better allocate irrigation resources, the square footage of the landscape areas the department is responsible for maintaining will be defined.

Hiking is a very popular pastime in Palm Desert. Yet, the trails are not well inventoried and maps of hiking areas are not as accurate as officials would have liked. When it was decided to lay new trails, the Planning Department needed to know exactly where these trails would traverse—whether they would go through protected wildlife areas (such as the Bighorn sheep areas where unleashed dogs are not allowed), or through adjacent jurisdictions, or private lands whose owners would need to be contacted for permission.

For trail work, the MobileMapper CE is used with the Magellan Precision Antenna carried in a backpack. John Urkov, who tried this solution, found that hands-free data capture led to higher precision. “With the antenna, trail inventorying becomes much simpler; one starts the MobileMapper CE to log continuous vertices and then hikes the trail. Putting the antenna above the head also helps log good data in tight canyons.”

The Traffic Department is undertaking a complete, city-wide inventory and mapping of 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.

Throughout Palm Desert there is a large amount of public art. A city ordinance requires such art be incorporated into the landscaping of any new developments. One of the projects being undertaken for the Art in Public Places Program aims to map the city’s public art, together with all the information about each piece. In the GIS layer, each item is hyperlinked to a picture of the art, the artist’s name, and date of acquisition, among other information.

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, Planning, and Public Works, will soon be able to log changes directly into the MobileMapper CEs, thus ensuring up-to-date GIS data. The low cost and ease-of-use of the MobileMapper CE help make this decentralization of data maintenance possible.

About Magellan

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