

Data Acquisition

Read the following article and answer the questions:

- 1 Describe the computer system used by Mornington Peninsula Shire to collect data on its assets.
- 2 What do you think are the goals of the system?
- 3 Explain how the data is collected.
- 4 Why is this data-acquisition method used?
- 5 How is the data entered into the computer system?
- 6 List examples of the data collected. What other data do you think could be collected?
- 7 What information is produced from the data?
- 8 How does the use of the system enhance the quality of the information produced?
- 9 How do you think this information will help the organisation achieve its goals?

ROBIN TAYLOR

Where asset managers and town planners of the past kept track of things using maps covered in colored pins, today they are more likely to use a Global Positioning System (GPS) to mark the location of their property.

The Mornington Peninsula shire has recently conducted a program to record assets such as rubbish bins, barbecues and flagpoles, using a GPS attachment in a slightly different way, fixed to a mountain bike.

For Shane Dowsett, the shire's asset engineer, the impending renewal of the contract for outdoor maintenance provided an opportunity to take stock.

'I've always been pushing to collect this sort of information and using bikes seemed the quickest and most efficient way,' he says.

Over summer, the council employed two year-12 students to carry out the recording. In one month they collected information on 530 seats, 287 tables, 349 bins, 56 barbecues, 8356 stormwater pits, 63 flagpoles, and 672 non-standard lights, covering every road and reserve from Mount Eliza to Rye, an area of 50 square kilometres.

The method employed involves a mountain bike and a pocket PC (Compaq Ipaq palm top) with a touchscreen mounted on the handlebars and Arcpad software, developed by Melbourne company IRA Terra Systems. A Leica GPS unit containing a satellite receiver and a receiver for the Cape Schanck maritime beacon is mounted on the back of the bicycles.

As the bikes move through the streets, their location is displayed on the touchscreen. To record something, the rider backs the bike up so that the GPS aerial is next to the object and the position is noted on the PC.

The unique identifier is the position coordinates, while basic attribute data – for example, construction material – can be entered from a pull-down list.

'You can walk everywhere, but that is slow, or you can drive, but you have to get in and out of cars all the time. Using the

bikes, you have a continuous signal from the satellite, you don't have to re-establish it every time you stop,' Dowsett says.

'The bikes can get to sites in parks, on beaches and other situations that a car can't access, and we don't have any fuel costs.'

Dowsett says the Compaq PC is ideal for field recording because it has an excellent display. By carrying a spare battery in their panniers, the riders can be out all day.

The computers have 32MB RAM and the council is now investing in memory extension cards, which will increase memory size to 96MB. The whole system, hardware and software, costs \$5800 for one unit, which Dowsett believes makes it a very economical proposition.

With the information they have gathered, the council will be able to supply accurate lists and locations of its roadside assets to prospective tenderers to help them cost the maintenance contract. The information will also be loaded on to the council's website, for customer use.

Dowsett says the same method can be used to carry out audits and condition reports of assets and to monitor how contractors are performing.

'Service providers will be able to plan inspections and maintenance programs better. They will be able to identify and plan inspection routes and direct maintenance crews more effectively.'

The next project is to map pathways all over the shire, which will be another big job for the bikes. Condition reports of pathways can be done by riding the bikes down the footpaths and stopping to plot any faults.

These reports can then be printed off and given to the maintenance crews.

The council's conservation section is also looking at using the system to map different vegetation types and the spread of weeds. It may also be used to map fire hazard areas, as the bikes can cover a fair amount of area and go down tracks that cars cannot navigate.

Source: The Age.
Photographs courtesy of
Mornington Peninsula Shire.

