



STAYING AFLOAT

The City of Richmond, B.C.'s Edward Hung is walking on water, thanks to an intelligent mobile reporting and analysis solution powered by WebFOCUS.

WEBFOCUS

Keeps City Above Water, On Track for Future



Edward Hung's city is under water at times during the year. Or at least it would be, if the drainage pumps operated by the City of Richmond, on Canada's west coast, weren't constantly pumping water into the broad Fraser River, which surrounds the city on three sides. On the fourth side, the salt waters of Georgia Strait lap the

city shores. The city has an average elevation only one meter (three feet) above sea level.

Obviously, careful planning is essential. A leaky main or burst pipes spell trouble in a city where water can't drain downhill. Entire neighborhoods could be flooded if drainage systems are unable to meet the demands of new development, or a heavy downpour. But where should new pumps be located? Which are most vulnerable to breakdown? How much impact does a new shopping center, office building or residential development have on drainage or water usage? When Richmond planners went to answer those questions they discovered that they had millions of lines of data, but very little useful intelligence.

SNAPSHOT

Organization: The City of Richmond, pop. 160,000, with an area of 50 square miles, built on a low island in the Fraser River immediately south of Vancouver, British Columbia, Canada. Annual budget: CA\$242 million.

The Challenge: City planners needed to analyze historical and trend data from water and sanitary pumps that keep the city dry and clean. The data was locked into a proprietary database, and city staff were unable to deliver the information that planners needed to guide development and emergency response efforts.

Strategy: WebFOCUS was used to create a Web site from which city officials could retrieve reports about alerts, trends, pump status and other information. At Information Builders's suggestion, the site was wireless enabled, giving public works staff access to the data while they are in the field.

The Results: The city finally has the intelligence it needs to be able to plan effectively for the future. As a bonus, the system uses inexpensive, open standards and can be easily extended to future technologies, made widely available to city staff, and can be accessed from a wide variety of inexpensive devices.

Information Builders Solution: WebFOCUS, plus Web services from Information Builders strategic partner AvantGo.

Data into Intelligence

All that data comes from one of North America's largest supervisory control and data acquisition (SCADA) systems. Radio transmitters at 180 pumps, plus temperature sensors and river level monitors, send status reports to a receiver on the top of a high hotel, which feeds it to a control room,

those days sirens would sound and a red light would flash until someone—usually a nearby resident—would call and report the alarm. The SCADA system and wireless network improved the quality and timeliness of alerts by sending data about pump activity to a central dispatch station, but city planners still had no way to analyze most of the data the system collected.

The new system allows any city official with access to the Web site created with WebFOCUS to view recent alerts, such as pumps experiencing mechanical failures, sanitary



THE INTELLIGENT CHOICE

Edward Hung (bottom left) heads up the City of Richmond's Advanced Research and Technologies team (starting from the second row and left to right): John Lindberg, Cathrine Marchell, Mike Lederer, Ed Jantzen, Paul Sung, Neyton Lum, Eric Gilfillan and Robin Jeong.

City departments have many choices in how they will access [Internet] data. They can choose desktop or PDA, wireless or wired.

"That's a line that goes over really well with our staff: you can pick whatever device you want to use. Users love to have a choice"

-Edward Hung,
Manager, Advanced Research and
Technologies for the City of
Richmond

where alarm conditions such as failed pumps or power outages can be identified. Each week, the system collects more than 2 million records, which are stored in a proprietary database on a PC server running a real-time operating system.

To gain intelligence about that data, Richmond turned to WebFOCUS from Information Builders. WebFOCUS had two outstanding features that attracted Richmond. First, it was capable of tapping into the proprietary database in which all that data was stored and, unlike that database, WebFOCUS had powerful reporting and analysis capabilities. Second, the ability to put WebFOCUS reports on the Web means the city can put that intelligence in the hands of anyone in the city, including users of wireless devices. Today public works crews in the field or engineers in planning meetings can pull down useful intelligence about the city's infrastructure on wireless PDAs.

That's a far cry from Richmond's earliest alert systems. In

sewage tanks getting too full, or city streets approaching freezing temperatures. They also have access to trend information, such as how hard each pump is working, how often it has failed in the past, and how its load or activity changes after a frequent West Coast downpour drenches the city, or after a new parking lot is paved in its area.

Asked how Richmond assembled this information in the past, Hung says "we couldn't."

"We realized we have a great system for monitoring and control but it was weak on the reporting side. Something as simple as finding out how many alarms came in last night would take a day," says Hung, manager of the city's Advanced Research and Technologies team.

The Wireless Connection

The WebFOCUS system quickly demonstrated that it could make sense of the data that the city collected. But

Information Builders went well beyond the original scope of the project in advising city planners to make smart decisions about the future. Fred Lee, Information Builders' technical manager in nearby Vancouver, first raised the possibility of linking the data to handheld devices, such as Palm Pilots, so that managers could take the data with them or access it over wireless networks. That, in turn, led to a vision in which any city official or public works service crew would have comprehensive data about the city's public works system, whether they were sitting in council

Dave Semple, Richmond's Director of Parks, talks about the complexities of managing remote sprinkler systems or tennis court lighting in city parks in a city like Richmond, famous for its West Coast rainfalls. Automatic lighting and sprinkler systems may go on even in the middle of a downpour—and the downpour can be over by the time a parks staffer gets to the scene to turn them off.

The city, which has won national and international awards for its beautiful boulevards, parks and neighborhoods, wants to combine an intelligent database with an invento-



chambers during a budget meeting or in a truck responding to a midnight alert in the dead of winter.

Considering the dramatic increase in the quality and availability of information it delivered, the WebFOCUS system was relatively inexpensive. The new database reporting system required only six weeks of development, in the spring of 2000. The Web site has been in production since the fall of 2000, and wireless capabilities were offered in early 2001. Wireless PDAs get the data off the Web site by using Avantgo, a service that converts Web data into simple forms that can be easily displayed on the small screens of PDAs.

Although Hung's team has a solid handle now on the original problem, the WebFOCUS solution has opened the city's eyes to the potential of a system that can deliver detailed information on all public facilities, using open networks and Web standards.

ry of trees on city property. The city plans to implement this database with Information Builders' WebFOCUS.

Built for the Future

The WebFOCUS system lends itself to future development because of its adherence to open standards and use of widely available hardware. Because the data is available on the Web, and the only client software required is a Web browser—available today for many devices, including PCs and PDAs—city departments have many choices in how they will access the data. They can choose desktop or PDA, wireless or wired.

“That’s a line that goes over really well with our staff: you can pick whatever device you want to use. Users love to have a choice,” says Hung. 🌊

Paul DeGroot is a freelance writer based in Seattle, WA.