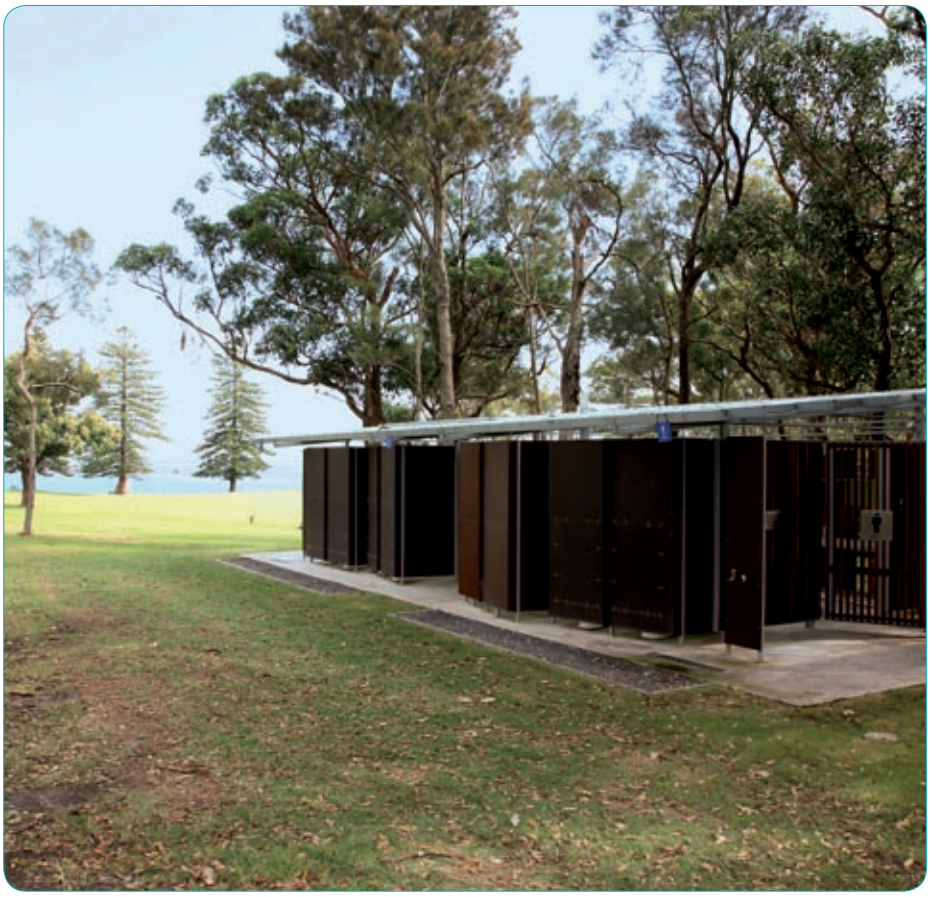
CASE STUDY

NSW NATIONAL PARKS & WILDLIFE SERVICE

Telemetry Helps Simplify Management of National Parks



The New South Wales National Parks and Wildlife Service manages over 600 parks and reserves. The service is responsible for developing and maintaining the parks and reserve system, and conserving natural and cultural heritage in New South Wales.

The Sydney South district covers the region from Botany Bay to the Illawarra and includes Botany Bay, Georges River, Heathcote and Royal National Parks as well as a number of reserves. Many of the parks are remote and not connected to the state sewer system.

The parks and reserves are becoming increasingly popular and attract many visitors, especially in the summer holiday season and this puts growing pressure on the toilet blocks in the park. Pumping out the septic tanks regularly incurs a high cost and is hard to plan effectively around burgeoning visitor numbers, weather and storm activity.

The Sydney Water Study, conducted in the late 1990s, concluded that there was a risk of effluent run off from the parks, which was unacceptable.

So it was planned to sewer the major parks such as the Royal National Park, one of the oldest national parks in the world, which includes the popular Audley village precinct.

The park was high on the list for upgrade and improvement, because of the use of absorption trenches in the park and the cost to the Parks Service of more than $60,000 a year to pump out the septic tanks.

Visitors Strain the System

Visitor numbers to all National Parks had risen and the toilet block sites weren't coping. The Parks Service identified the higher priority projects and gained funding from Treasury to upgrade Botany Bay, Georges River and Royal National Parks.

The existing sewerage systems in the parks were varied and the result of evolution over many years. The new funding offered the chance to review what was in place and establish an overall strategy for economy and best practice.

One of the problems facing management was not having trained staff with knowledge of sewerage systems. Staff were experienced in other key aspects of park maintenance and management. So any new system needed to be automated and robust, with a capacity for growth.

Because parks were widely dispersed and remote, another important factor was telemetry. Monitoring and control of pump stations and toilet blocks had to be easily managed from the main operation centre at Kurnell. In the past, the first knowledge of a problem may have come from park visitors or even newspapers and this was not satisfactory.

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Economy and Best Practice

The review showed that a number of sites had been using the Multitrode MT2PC pump controller for some time without major problems. So it was decided to look more closely at the experience and knowledge Multitrode, an Australian company, had gained from addressing issues of wide area pump station management and control.

MultiTrode was invited to present a case for standardising on the MT2PC. The product was Australian made, widely distributed and recognised as reliable.

The Parks Service was already using an external telemetry dial up system at some sites, covered three basic faults – high water, pump failure and power failure, so when a phone call was received somebody had to go out at any time of the day or night to see what the actual problem was. The telemetry system also monitored the Botany Bay Surf Club incorporating the smoke and intruder alarms.

Multitrode visited the operation centre at Kurnell and demonstrated the new PumpView system.

Trial at Botany Bay & Georges River

The demonstration led to the installation of the PumpView system at twelve pump stations in the Botany Bay and Georges River Parks, to allow both the existing telemetry system and the new PumpView option to be compared.

There are three pump stations at Botany Bay and nine at Georges River. During the new works, the existing pump stations were upgraded with the MT2PC and Multitrode probes and controllers were installed into the two new toilet blocks.

Construction of the new toilet blocks began in September 2006 and took four months. The new PumpView management and control system was then installed.

Off to a Flying Start

The new system has now been in place for six months covering the period of maximum visitor attendance. The environmental centre at Botany Bay National Park alone has a large number of children and student visitors every year.

Both parks are adjacent to waterways, and the potential risk of effluent run-off has to be tightly managed and controlled.

The system provides critical overview, fast response and reassurance. Any problem generates an immediate SMS message, which is sent to the Operations Manager. The manager can then log on to the internet and decide what to do. Depending on the nature of the problem, a decision can be made to deal with it immediately or leave it to a more convenient time.

Because of the thirty-kilometre distance between the parks, it can take up to forty-five minutes to drive from the operations centre at Kurnell, especially in peak drive time. The system allows for the most appropriate use of resources at the time.

Management and Control

The benefits of management and control of the pump stations across the parks in the southern region are already evident.

Every day a report is generated and emailed to the Operation Manager. The report outlines any issues that are out of the ordinary. By monitoring water use at different blocks every day, it is easy to recognise a leak and deal with it quickly. Usage patterns at individual toilet blocks also provide indicators for scheduling toilet cleaning.

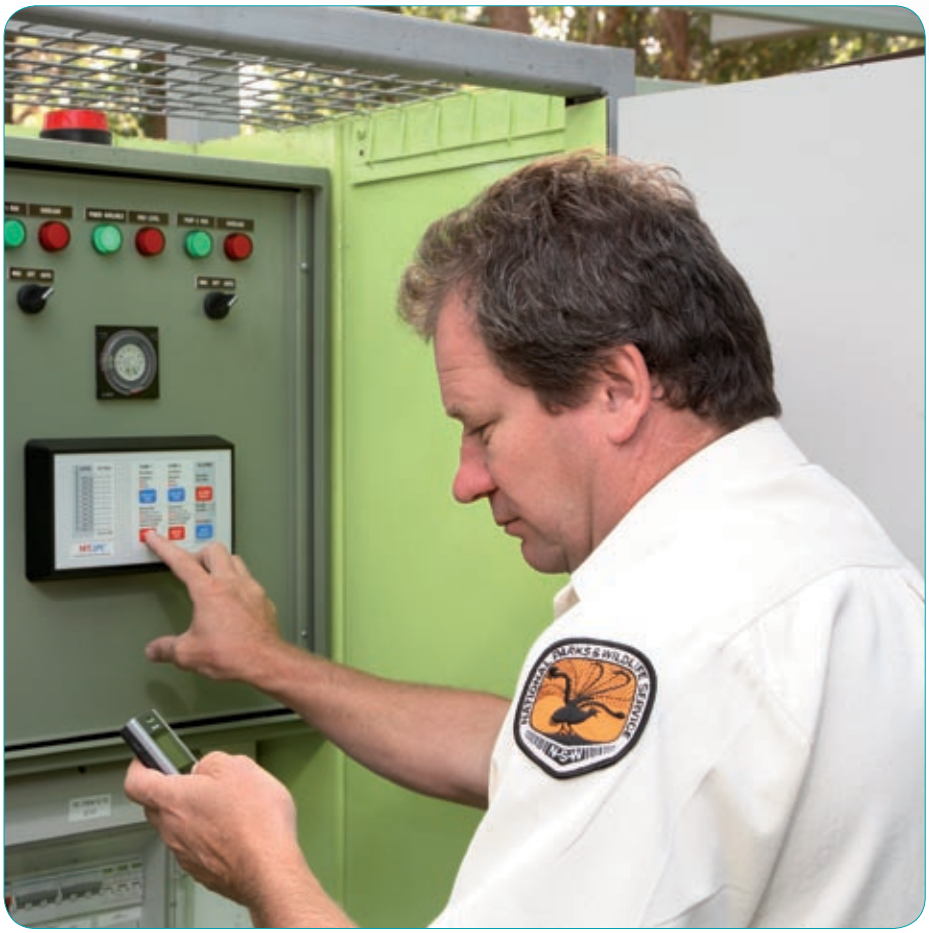
All of the stations, toilet blocks, picnic areas and the surf club can be managed from one location. With internet log in, the Park Service assets can be managed from the office, home or anywhere in the world.

Visits to sites can be made when necessary to fix a problem that can't be dealt with online. In the past a visit would have been necessary to identify the problem in the first place.

The installation of a robust and reliable system has reduced the requirement for technical knowledge and skills in National Parks staff considerably. The system is user friendly and easy enough for anyone to use.

The only problem so far is losing a pump controller to a lightning strike. To manage similar problems in the future, a spare MT2PC is now kept in the office, so in the event of another strike, the spare controller can be quickly plugged it in to get things running again.

There is plenty of scope for the system in National Parks. The cost of vehicles and staff is expensive, and telemetry is the only way to deal with cost reduction effectively. This is even more relevant and useful to Parks that manage offshore islands that are visited by operations staff infrequently.



Planning for the Future

The National Parks service has moved from pump outs and septic tanks at high cost, to having a robust, monitored system that allows for the management of widely dispersed areas including remote locations.

The sewerage management and control system has now been extended to include building management. Other aspects are now under consideration.

PumpView delivers daily reports, with all history kept in an on-line database, so managers can look at trends. Comparisons of seasons, and month-by-month pump station performance allows planning for different cycles and settings that are most appropriate.

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PumpView for All

SCADA is no longer something that only large water authorities can afford to implement. The PumpView system has demonstrated the value and power of telemetry to manage and control pump stations, from the smallest to the largest, and for both water and sewer applications.

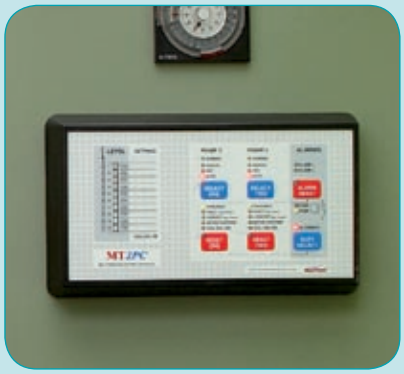
This means that skilled personnel can be best used where they are needed. And archived data and trends offer the necessary resource for planning and maintenance.

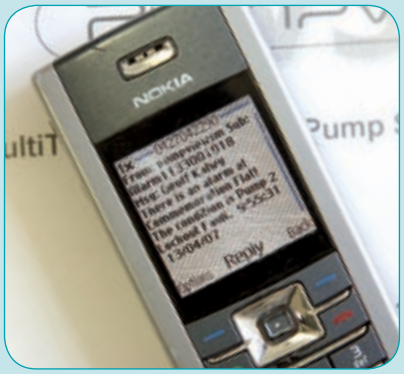
The reassurance and control experienced by the National Parks Service can now be enjoyed by organisations of all kinds, wherever they may be located.

PumpView System

MultiTrode is a leader in pump station management systems. The company designs and manufactures level sensors, pump station controllers, pump station supervisors, SCADA software and web-based monitoring - PumpView.

PumpView allows monitoring and control of pump station faults and problems over the Internet. If a problem occurs, specific alarm notification is sent via mobile phone SMS messaging or e-mail to each user on the alarm list in turn, until the alarm is acknowledged. Most problems can be addressed over the Internet from home or office PC or laptop.





PumpView generates web pages showing status of the whole network. Alarms are highlighted and a user can check pump station levels, view fault status, reset pumps and alarms.

The system also delivers a broad range of historical data that can forewarn of impending problems with pump motors, electrical supply or potential blockages and serve as the basis for a proactive maintenance program.

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