

An immediate reply

**JIM MONTGOMERY and TOM BUEKER examine
Melbourne CityLink Motorway's new Incident
Response Management system**

“A homogenous user environment allows operators to quickly respond to incidents and emergency conditions while monitoring and safeguarding vital equipment and facilities”

Melbourne, the capital of the Australian State of Victoria is a metropolitan area of more than 3.8m people. Like most modern urban centres, the population has a need to move commuters and products from point to point on an ever-increasing basis.

For Melbourne, one answer was CityLink - one of the world's first fully electronic toll roads. CityLink is a 22km automated tollway connecting the Tullamarine, West Gate and Monash Freeways to and around the City's Central Business District, with Australia's largest seaport on Port Phillip Bay, Melbourne Airport and outlying suburbs. The tollway includes the Burnley and Domain tunnels to provide uninterrupted flow traffic under the busy CBD. (In 1995 the contract to build the tollway was awarded to Transurban, a leading international toll road developer and investor focusing on long-term ownership and management of advanced electronic toll roads in Australia and the United States.)

Commuters and freight operators benefit from reduced travel time between the central business district and other key points around the city, more predictable travel times and reduced fuel cost of an estimated 25m litres per year by the commercial sector alone. More than AU\$300m (€200m) in economic growth is attributed to development of the automated tollway.

Mission critical

In today's world, improved management of traffic including crisis prevention and emergency response plans are a necessity in protecting people and property traveling on transport facilities like CityLink. Critical infrastructure - especially confined space facilities like tunnels where delayed or inappropriate response to emergency situations can be catastrophic - require the best incident response management practices and technology in order to maximize safety and throughput. Incident Response Management (IRM) is a coordinated set of operational practices

Incident Management

enabled by software technology that recommends best course of action response plans and automates routine tasks and control functions allowing the user to maintain focus on the situation. IRM enables rapid, consistent, and appropriate responses to traffic incidents (accidents, breakdowns, etc.), emergency situations (fire, noxious air, security breaches, etc.), and scheduled events (roadwork, maintenance, etc.). IRM reduces operator stress by generating and executing coordinated real-time response plans needed to expertly manage routine or time-sensitive, critical situations.

The tragic Burnley Tunnel fire in 2007 illustrated the key role incident response management plays in fulfilling the safety goals of the CityLink motorway. When fire broke out after two semi-trailer trucks and three cars crashed inside the 3.4km Burnley tunnel, images from surveillance cameras alerted control room operators to the emergency situation in the tunnel. Operations staff activated a co-ordinated response plan that engaged water deluge and smoke exhaust systems, dispatched appropriate emergency response vehicles, and posted motorist advisory information, thereby mitigating the impact and ensuring the accident did not escalate into a much larger incident. Experts concluded that the effective emergency response and evacuation measures ensured the safety of all those not directly involved in the incident. Advanced preparation and quick response without question saved lives and allowed the tunnel to be repaired and reopened just four days later.

A modern platform

While the existing traffic management computer system had met operational goals, the aging system was reaching obsolescence. To address this risk, the CityLink system needed a modern, sustainable platform that would maximize operational efficiency and further improve safety while integrating with their existing enterprise. The new platform had to be specifically designed for multi-tier command and control environments with a proven track record of operating critical infrastructure with similar demanding life-safety requirements.

Transdyn, Inc. (www.transdyn.com), based in Metro Atlanta, Georgia, USA was awarded a contract to design and build a new Operations Management Computer System using its DYNAC® system - a high-performance, integrated software suite built with the latest open-architecture standards and open-source software technologies. DYNAC provided Transurban with a proven product which combined mission critical reliability and security with the latest decision support software technology to form a powerful software solution for its advanced transportation and facility management application.

Placed into service in 2009, the new system provides Transurban with a configurable framework tailored to the needs of CityLink while delivering the capability for command and control on multiple operational levels in a safe and secure environment. Seamless management of all aspects of traffic and facility operations is achieved through a unified operator interface. This allows operations personnel to monitor and control all of the traffic and facility equipment including automatic incident detection, video cameras, electronic message signs, weigh-in motion and counting stations, emergency telephones, motorist advisory radio messages, overheight detection, tunnel ventilation and lighting, electrical distribution, access control, fire detection and suppression, and environmental systems.

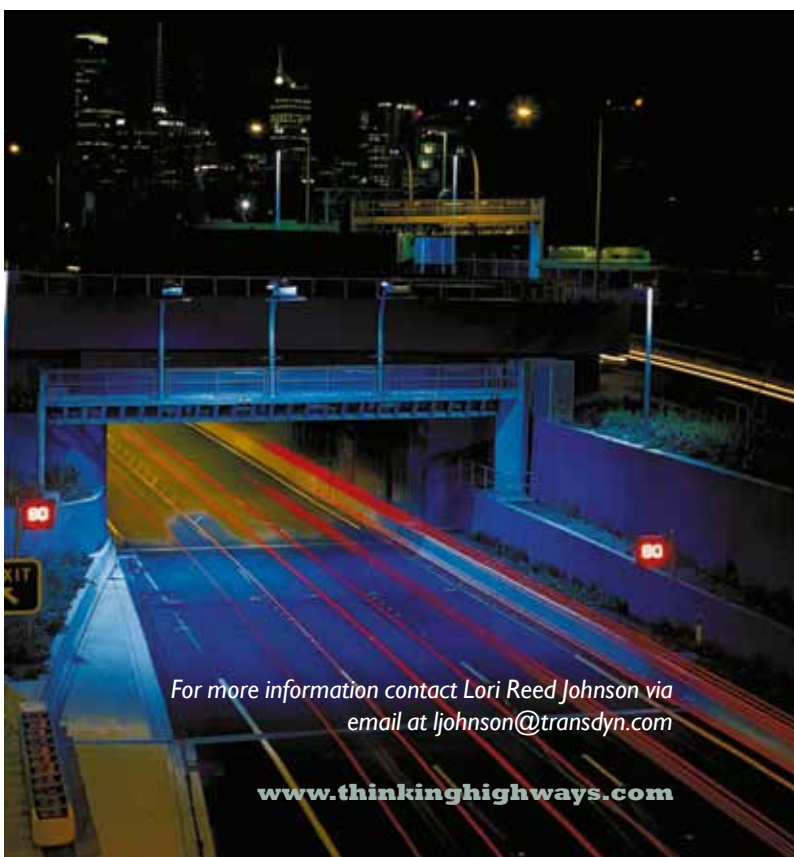
The required response

The DYNAC Incident Response Management application aids operational staff in responding consistently and appropriately to incidents ranging from flat tyres to severe situations. A homogenous user environment allows operators to quickly respond to incidents and emergency conditions while monitoring and safeguarding vital equipment and facilities. The fusion of video surveillance and real-time data enhances situational awareness - a critical requirement in extreme emergencies. Alarm notification is fully automated so the right personnel are notified and response management data is logged and reported for forensic examination that drive operational performance improvement.

The new system includes an interface with VicRoads (Victoria's road agency) which operates the motorway connecting to CityLink. This interface allows both CityLink and VicRoads to monitor all traffic devices in each area and provide joint management over shared messaging devices. The IRM application facilitates the goals of CityLink by allowing staff in both control centres to provide optimal response to incidents in each area. Once operators activate a response plan through IRM, incident alerts can be displayed on electronic driver messaging signs that warn drivers of conditions on motorways and surrounding areas. This centre-to-centre connectivity is important because unplanned incidents, even small situations such as engine stalls, breakdown, chemical spills or minor accidents, can impact drivers on either motorway. This gives drivers knowledge of traffic conditions when planning travel within both motorways and helps keep total drive time to a minimum.

Effective Incident Response Management is essential to the safe operation of confined space road transport facilities. Leading transportation management companies like Transurban use best industry practice and advanced decision support software technology to increase life-safety and reduce property damage risks while improving outcomes in emergency situations. **TH**

“Advanced preparation and quick response without question saved lives”



For more information contact Lori Reed Johnson via email at ljohnson@transdyn.com