Traffic management

Traffic management in Queensland

Effective traffic management is essential for the safety and convenience of the travelling public.

The department manages the state-controlled road network of 33,337km to ensure it operates with maximum efficiency at peak travel times, special events, road closures and unplanned incidents.

The department uses state-of-the-art technology, including advanced communication and traffic flow systems, to provide up-to-date information, help road users choose the right route and plan trips, and clear road incidents as quickly as possible.

We keep people informed on planned changes to traffic arrangements through radio broadcasts, variable message signs, traffic hotline 131940, websites www.tmr.qld.gov.au and www.131940.qld.gov.au, and digital media such as SMS messages to mobile phones.

STREAMS

STREAMS is the department’s integrated intelligent transport system and is installed throughout Queensland.

STREAMS integrates the following functions in one system:

- traffic signal management
- motorway management
- incident and event management
- vehicle priority systems
- traveller information
- parking guidance systems.

By including all these functions in one integrated system, STREAMS offers road authorities a total solution to their intelligent transport system needs. It provides improved efficiency, lower risk and lower costs when compared to separate systems performing the same set of functions.

STREAMS offers significant benefits to the road operator, road user and broader community. By offering greater efficiency of the transport network as a whole, the following benefits can be realised:

- reduced travel time
- reduced vehicle operating costs
- improved safety
- reduced emissions
- increased capacity
- the ability to accurately measure and compare performance of the road network.
Intelligent Access Program - Innovation in action

The Intelligent Access Program is a national program developed in partnership with all Australian road agencies. It uses satellite tracking and wireless communication technology to remotely monitor where, when and how heavy vehicles are being operated on the road network.

The Intelligent Access Program provides heavy vehicles with improved access to the Australian road network in return for monitoring compliance with specific access conditions. This is done using vehicle telematics - a way of monitoring a vehicle using global positioning.

The purpose of applying the program to higher mass limits vehicles is to protect vulnerable road infrastructure while allowing innovative and higher productivity vehicles, designed to maximise the freight task, access to the road system.

The department has developed the higher vehicle management system on the Pacific Motorway. It uses fibre optic cabling to link:
- weigh-in-motion detectors
- remotely controlled changeable message signs
- closed-circuit television cameras
- transport inspectors’ control centres (on-site)
- Gold Coast Traffic Management Centre.

The system is used for targeted (mass) and random (fatigue, safety and dangerous goods) compliance activities on a high-speed limited access road. This is possible by using weigh-in-motion sensors and changeable message signs. Stage one has been installed. Plans for stages two and three include:
- enforcement-grade digital cameras
- real-time upload of data and images for offence processing
- fully automated system using high-speed weigh-in-motion detectors.

Motorway management

The STREAMS Motorway Management System aims to reduce travel time and accident rates, prevent congestion and enhance traffic flow for motorists by providing:
- adaptive on-ramp metering
- off-ramps integrated with traffic signals to prevent queuing onto motorways
- automatic congestion notification via variable message signs
- integration with all motorway intelligent transport system equipment
- variable speed limit management
- lane use management.

Traffic Response Units (TRU and TRU Max)

Traffic Response Units (TRUs) and TRU Max are roaming “on road” services that provide first response, quick clearance solutions for road incidents across south east Queensland. TRUs provide basic breakdown assistance, incident clearance and traffic control services. TRU Max vehicles are fitted with an additional vacuum pump to remove spills and road debris such as broken glass, gravel and diesel from the road.

These services are a joint initiative of the Department of Transport and Main Roads and Brisbane City Council, and are delivered by the Royal Automobile Club of Queensland.

The department’s Heavy Vehicle Recovery Units (HVRUs) can move or lift overturned trucks and semi-trailers from the road quickly and safely, significantly alleviating congestion during peak traffic periods. Two HVRUs service the area within an approximate 80km radius of the Brisbane city centre. TRUs and HVRUs work closely with the Queensland Police Service and other emergency services at incident scenes to keep the area safe and traffic moving.
**Monitoring traffic**

The department's Traffic Management Centres monitor and manage traffic across the major arterial roads and intersections so that the best possible travel times can be achieved by the majority of road users. This saves road users millions of dollars through reduced travel times. The centres provide real-time, relevant and accurate information about road conditions.

The centres play a vital role in managing traffic in the event of traffic incidents. With camera locations situated in strategic locations, console operators can advise emergency services of the fastest way to the scene.

Centre staff also can restrict traffic from entering the area through careful and pre-planned traffic light manipulation, allowing emergency services to concentrate on matters other than traffic control.

In the event of a major incident or natural disaster, the Traffic Management Centre can become a command centre for Queensland Police and other emergency services, enabling them to more effectively coordinate activities to help the community deal with the situation.

Traffic Management Centres are located in Metropolitan Region (Brisbane), North Coast Region (Sunshine Coast), South Coast Region (Gold Coast) and Far North Region (Cairns). The centres have close links with local government to enable information provision on other roads.

Real-time traffic camera feeds in various locations can be seen on websites www.tmr.qld.gov.au and www.131940.qld.gov.au.

**Parking guidance**

The Car Park Guidance System provides real-time information about the availability of parking spaces, for example at the Sunshine Plaza Shopping Centre. This information is displayed on large signs for motorists approaching the Maroochydore CBD.

The system counts vehicles entering and leaving the car park and calculates when the car park is full. It will then display the 'full' message on the electronic sign. The system eases traffic congestion, redirecting some of the traffic flow to less congested areas.

**Traffic signal management**

STREAMS optimises the management of traffic signals by ensuring the routes, intersection groups, intersections and movements within the surface street network operate in synergy. This is achieved by providing:

- adaptive cycle time, splits and offsets to suit current traffic conditions
- traffic signal coordination and performance measurement
- public transport vehicle priority and pre-emption for emergency vehicles
- time of day and/or adaptive operational modes.

STREAMS automatically responds to changes in traffic conditions. Benefits include:

- reduced travel times
- reduced stops, delays and queuing
- increased fuel efficiency
- reduced exhaust emissions
- improved level of service at intersections
- better coordination.

**It’s a green light**

The Emergency Vehicle Pre-emption System interrupts normal traffic signal operations to provide a green signal to emergency vehicles as quickly as possible. This improves both response times and safety for Emergency Services personnel and the general public, as it minimises the need for drivers to take risks by running red lights.
**Brisbane Metropolitan Transport Management Centre**

The Brisbane Metropolitan Transport Management Centre is the principal transport management centre for south east Queensland. To keep traffic moving, the centre coordinates traffic/incident response services across the Brisbane metropolitan area.

The centre operates 24 hours a day, 7 days a week. It coordinates the 131940 hotline and website which provide important traffic and travel information for road users. The services are provided on behalf of the Brisbane City Council and the Department of Transport and Main Roads.

To report a traffic incident, use the blue roadside help phones or call the 131940 hotline for assistance.

**Emergency response**

The department provides equipment and personnel for traffic/incident response when this is requested by the Brisbane Metropolitan Transport Management Centre. Our emergency response capacity includes:

- eight truck-mounted attenuators, known as ‘bump trucks’
- emergency supervisors on call 24 hours
- emergency crews on stand-by, equipped with barrier trucks and trucks displaying prominent variable message signs to alert drivers. The crews provide extensive traffic control support and diversions across the network, as well as clean-up and recovery of incident sites.

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**Intelligent Transport System at work**

The Tugun Bypass includes a 334 metre tunnel that has been built under the Gold Coast Airport’s runway extension. The tunnel has the latest technology in intelligent transport systems including:

- a control system for tunnel lighting
- monitoring of traffic flow
- operation of the ventilation system
- a control system for the fire detection and water deluge system
- motorist and emergency services communication.

The intelligent transport system enables traffic conditions to be monitored and controlled through closed circuit television cameras and variable message signs. These are linked to the department’s Gold Coast Traffic Management Centre and the Roads and Traffic Authority’s Sydney Transport Management Centre. These centres update variable message signs at the tunnel approaches, tunnel portals and both the Tweed and Stewart Road interchanges.

A sophisticated smoke and fire detection system features a public address system and emergency broadcasts using local radio stations to alert motorists of an incident. In the event of a fire, the water supply comes from town mains with two 1 megalitre water storage tanks as back-up. The water supply is capable of over two hours continuous supply at 260 litres per second.

Each tube of the tunnel contains nine jet fans although only six of these fans are required in the event of an incident. This allows for the possibility of an incident causing damage to one of the banks of three fans.

A high voltage power supply to the tunnel powers the lighting, ventilation, fire services and other traffic control and monitoring systems. The design includes provision of a second independent sub-station to safeguard against a possible outage of the primary supply.

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**For more information:**

- Traffic and incident reports on 131940 hotline
- RACQ on +61 7 1300 130 595 for 24-hour road reports