Appendix K: Communications

Discharging air from the M5 East Tunnel

Air quality improvement plan

FACT SHEET

On the 16 June 2006, Roads Minister Eric Roozendaal announced plans by the NSW Government to improve air quality in the M5 East Tunnel.

The air quality improvement plan includes:

- Video identification of pollution-causing heavy vehicles and sending polluting vehicles to the Clean Fleet Program.
- Increased ventilation flows with an extra 12 jet fans.
- A trial of filtration technology.

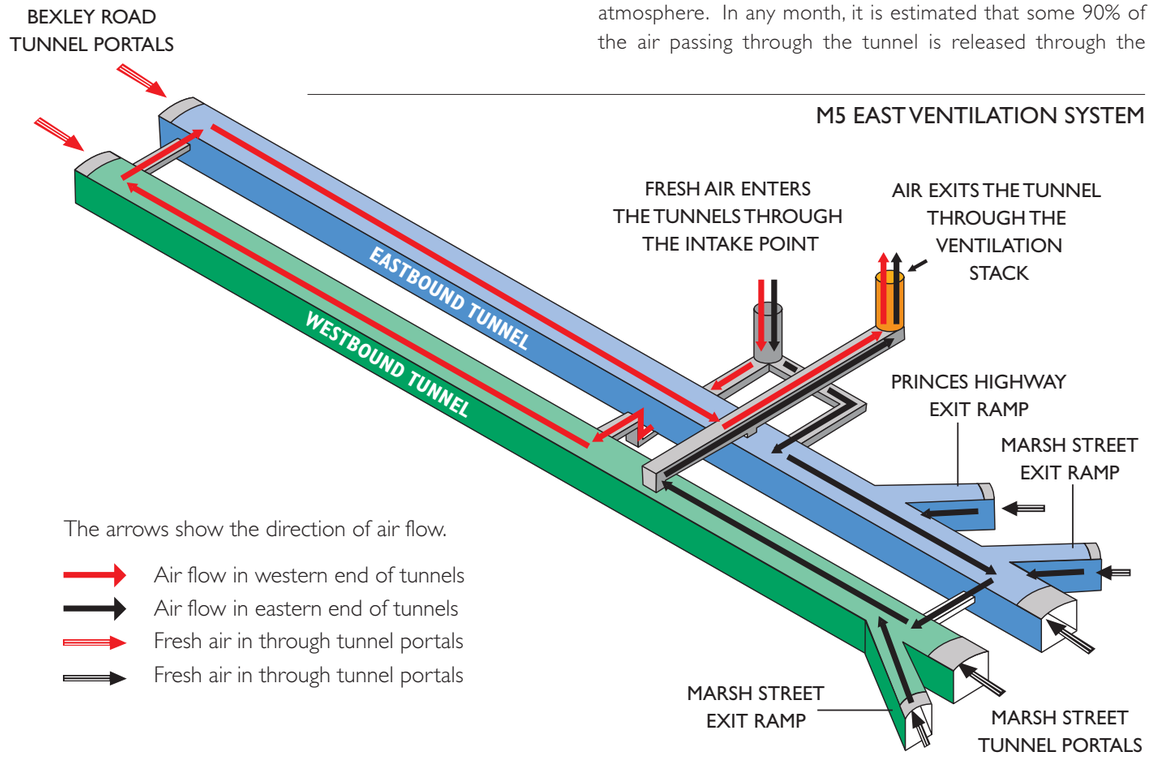
This fact sheet has been prepared to provide information on:

- The air quality monitoring that has taken place at the tunnel exits.
- Further proposals to improve the quality of air within the M5 East tunnel by discharging air from the tunnel portals.

How does air move through the tunnels?

Currently, air is recycled between the westbound and eastbound tunnels and is expelled via a 35 metre stack to the atmosphere. In any month, it is estimated that some 90% of the air passing through the tunnel is released through the

M5 EAST VENTILATION SYSTEM



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ventilation stack. Occasionally air has been released from the tunnel portals or openings. This is due to:

- Vehicle break downs and traffic congestion in the tunnel.
- Night time maintenance of the tunnel.

See the diagram showing the ventilation system on the front page.

Has there been any impact to air quality by air exiting the tunnels at the portals?

Two monitoring stations were installed in May 2004, one at the eastern end (Marsh Street) and one at the western end (Bexley Road). See the map (right). The monitoring stations were located immediately adjacent to residents closest to the portal.

Holmes Air Sciences reviewed the air quality data from near the tunnel portals for the period between May 2004 and May 2005. Holmes Air Sciences considered closely any changes in air pollutant levels in the areas surrounding the tunnel openings.

The Holmes Air Sciences report concluded that there was no clearly discernible difference in air pollution levels during those periods of portal emissions.

Additionally, since May 2005 the air quality monitoring has not detected any exceedances of the air quality criteria described in the December 1997 planning approval for the M5 East.

Improvements to visibility in the tunnel

Portal emissions are a part of the air quality improvement plan announced by the NSW Minister for Roads.

Studies undertaken in 2006 indicated that visibility in the tunnel could be improved significantly by:

- The release of air from the portals.
- Drawing more clean air into the tunnel.

Increasing the volume of air in the tunnel would dilute pollutant concentrations within the tunnel and reduce tunnel haze.

A proposal will be submitted to the Department of Planning for the release of tunnel air from the portals.

Maintaining air quality around the portals during periods when air is released from the portals will be a priority for the RTA.

Finding the optimum solution

The RTA will progressively assess different scenarios to release air from the tunnel. The aim will be to develop the safest and best way to operate the tunnel, meeting the needs of both tunnel users and the surrounding community.

Protocols will be developed around:

- Air flow rates to maximise the benefits for in-tunnel air quality and minimise the potential for air impact.
- Air quality 'trigger' levels that are better than the existing air quality goals as specified in the M5 East planning approval.
- If the trigger levels are reached, there will be no portal emissions. This will provide a factor of safety for the operation of the tunnel, so that the existing air quality goals are not exceeded.

The effectiveness of the portal emissions would be assessed by monitoring in-tunnel visibility and air quality at the portals.

What happens next

The RTA is consulting the local community about the air quality improvement plan.

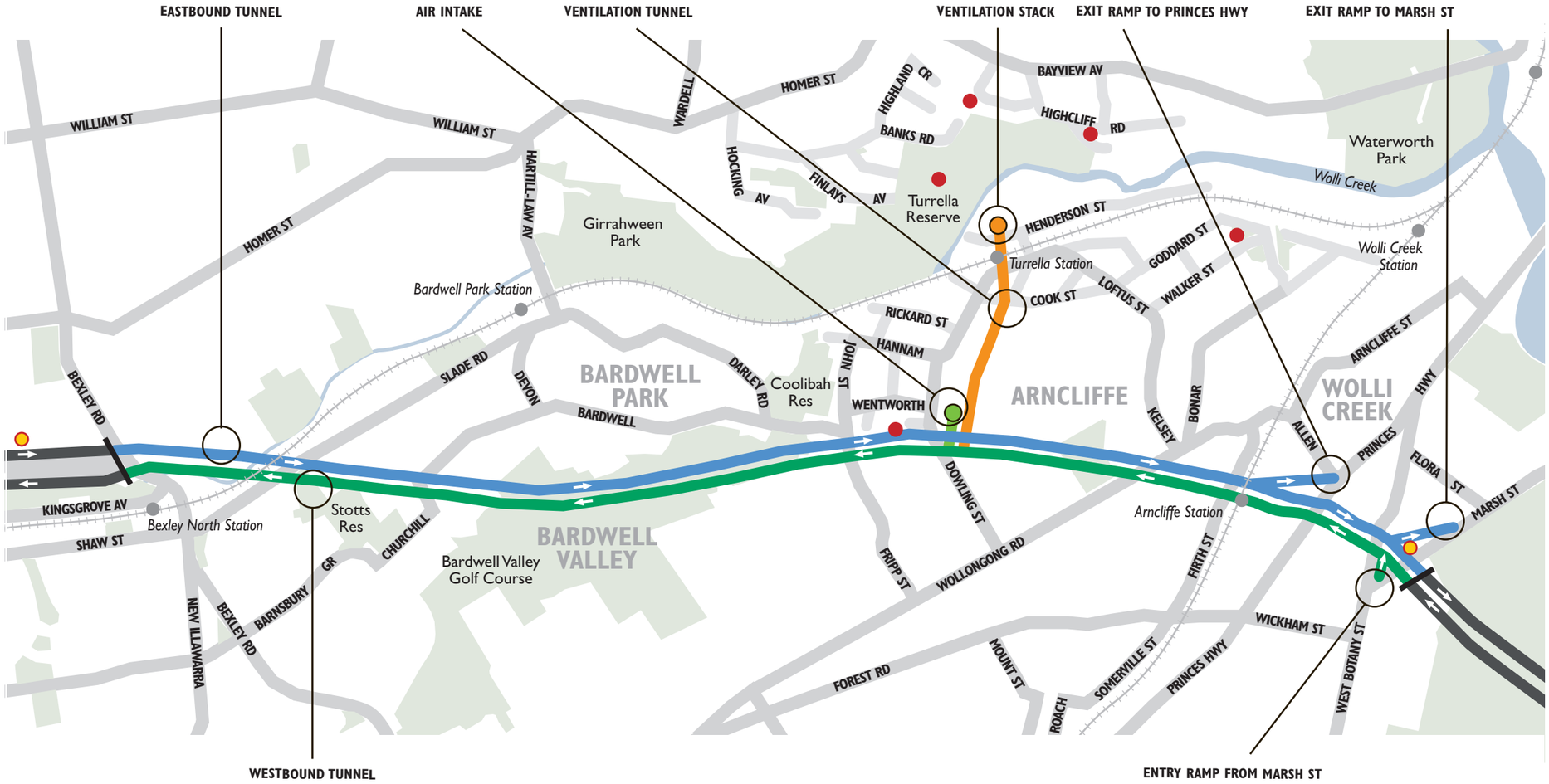
The RTA will apply to the NSW Department of Planning to modify the project's condition of approval. A Modifications Report will be prepared that will define the proposal for portal emissions trial and how we will keep the community closely advised.

Did you know?

The air quality monitoring data is on the RTA's website

A copy of the report: M5 East Portal Monitoring Analysis (2006) can be downloaded from the RTA website, www.rta.nsw.gov.au (go to Construction and maintenance > Completed projects > M5 East Freeway > M5 East and tunnel filtration)

M5 EAST ROUTE



LEGEND

- EASTBOUND TUNNEL
- WESTBOUND TUNNEL
- VENTILATION TUNNEL
- VENTILATION STACK
- AIR INTAKE
- AIR QUALITY MONITORING STATION
- PORTAL AIR QUALITY MONITORING STATION
- TUNNEL ENTRANCE/EXIT (PORTALS)

Overview of Air Quality Improvements for the M5 East Tunnel

Air quality improvement plan

FACT SHEET

This fact sheet has been prepared to provide an overview of the air quality improvement plan and the air quality improvement work that has already taken place at the M5 East tunnel.

On the 16 June 2006, Roads Minister Eric Roozendaal announced a plan by the NSW Government to improve air quality in the M5 East Tunnel.

The air quality improvement plan includes:

- Video identification of pollution-causing heavy vehicles and sending polluting vehicles to the Clean Fleet Program.
- Increased ventilation flows with an extra 12 jet fans.
- A trial of filtration technology.

Factors that contribute to high haze levels include:

- Heavy vehicles.
- Individual smoky vehicles (particularly poorly maintained heavy vehicles).
- Management of air flows in the tunnel.

This air quality improvement plan addresses both air quality and tunnel closure issues. The air quality improvement plan includes proposals that are consistent with the existing conditions of approval for the M5 East tunnel:

- Identifying pollution-causing heavy vehicles on video and getting in contact with them to assist them to clean up their engine emissions.
- Increasing the air flow in the tunnel with an extra 12 jet fans to be installed.

A report will be prepared to the NSW Department of Planning to modify the Planning Minister's approval for the M5 East project. This would enable the RTA to:

- Install and operate Australia's first trial of air filtration technology.
- Develop protocols for the safe release of in-tunnel air from the tunnel portals.

Did you know?

The M5 East is one of Sydney's most heavily trafficked tunnels. On average 94,000 vehicles use the tunnel each day, including around 8,000 heavy vehicles each week day – about three times the number of heavy vehicles in other Sydney tunnels.

Reducing vehicle emissions at their source

There is a direct link between the number of heavy vehicles travelling through the M5 East Tunnel and the increase in haze in the tunnel. The RTA is looking to reduce vehicular emissions by tackling the problem at its source. This means repairing the high percentage of pollution causing heavy vehicles that use the tunnel.

The RTA has installed four video and two still cameras into the M5 tunnel, at a cost of $1 million. This system will be used to identify 'smoky' heavy vehicles. Smoky vehicles are those which emit visible smoke continuously for ten seconds, as observed from the video detection system.

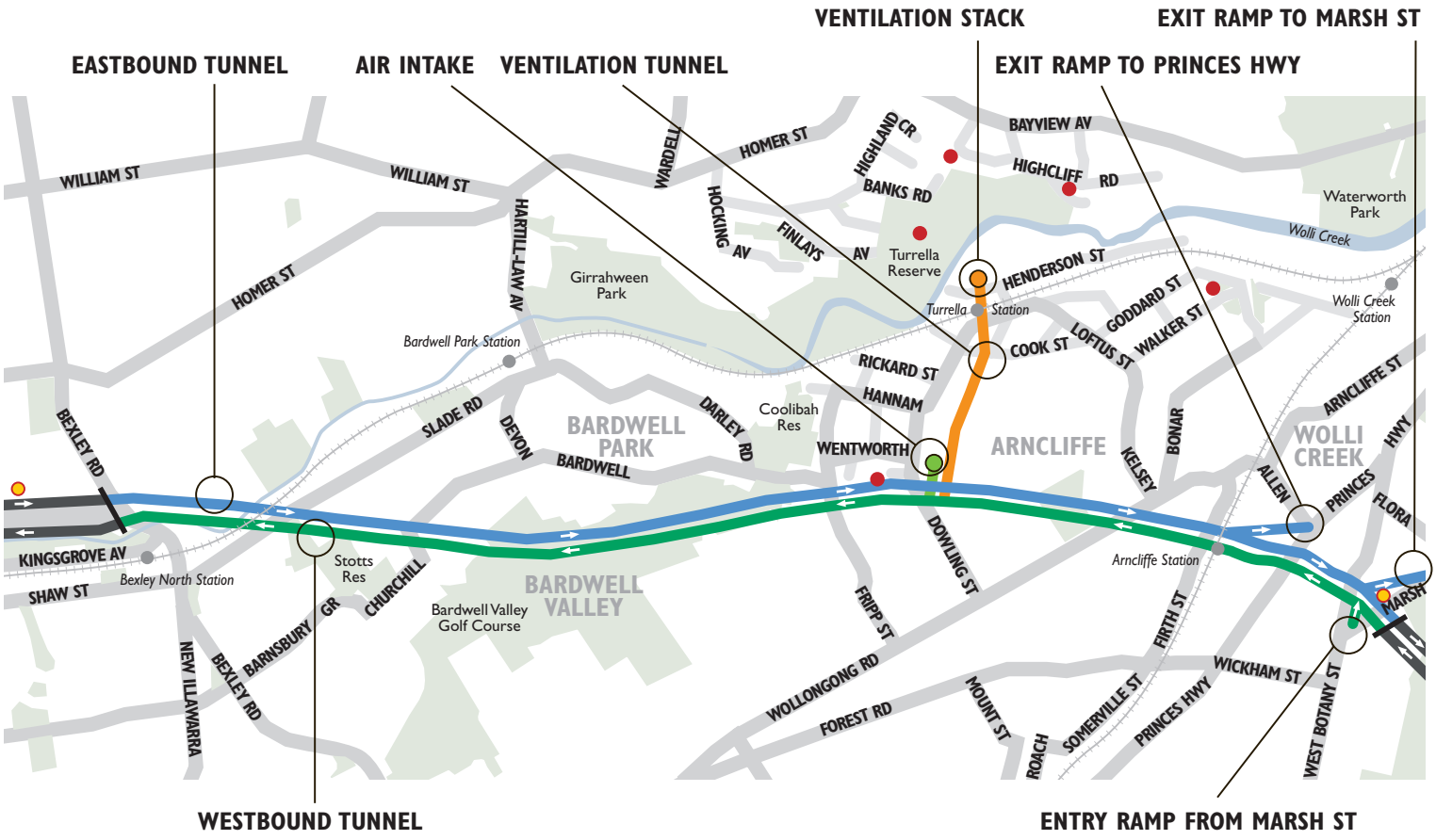
Smoky vehicles will be directed to have testing and treatment under the Clean Fleet Program.

Increasing the flow of air in the tunnel

An additional 12 ceiling jet fans are to be installed to assist the operation of the in-tunnel ventilation system.

The additional fans will provide greater flexibility in directing air, and a faster response to tunnel incidents.

M5 EAST ROUTE



LEGEND

EASTBOUND TUNNEL | WESTBOUND TUNNEL | VENTILATION TUNNEL | TUNNEL ENTRANCE/EXIT (PORTALS)

VENTILATION STACK | AIR INTAKE | AIR QUALITY MONITORING STATION | PORTAL AIR QUALITY MONITORING STATION

The RTA Clean Fleet Program

Clean Fleet is an RTA maintenance program for diesel vehicles, designed to reduce the amount of emissions from heavy vehicle fleets in NSW. Operators who subscribe to the program need to demonstrate compliance in four areas:

- Clean fuel.
- Engine settings.
- Maintenance schedules and methods.
- Fault identification and repair.

Did you know?

Treated vehicles under the Clean Fleet Program have had emissions reduced by an average of 30 to 40%. In some instances, emissions can be reduced by over 80%.

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Jet fan installation in the M5 East Tunnel

Air quality improvement plan

FACT SHEET

This fact sheet has been prepared to provide information on the installation of 12 new jet fans for the M5 East Tunnel as part of the NSW Government's air quality improvement plan.

On the 16 June 2006, Roads Minister Eric Roozendaal announced a plan by the NSW Government to improve air quality in the M5 East Tunnel.

The air quality improvement plan includes:

- Video identification of pollution-causing heavy vehicles and sending polluting vehicles to the Clean Fleet Program.
- A trial of filtration technology.
- Increased ventilation flows with an extra 12 jet fans.

Why are new jet fans needed?

There are 119 jet fans already operating in the M5 East Tunnel. The tunnel ventilation system is currently operating at its capacity during peak traffic periods.

The M5 East Tunnel is a very popular tunnel, particularly with heavy vehicles. Current traffic levels have resulted in periods of congestion and visible haze in the tunnel. During incidents such as accidents or breakdowns in the tunnel, carbon monoxide levels can rise in the tunnel. To maintain air quality, the tunnel has been closed for short periods in the past.

The new jet fans will help to move fresh air through the tunnel during incidents. By reducing the need to close the tunnel, it will improve the availability of this transport route.

What will the new jet fans do?

When traffic is stalled or moving slowly in the tunnel, the 'piston effect' to move air through the tunnel is lost. The new jet fans will maintain air flow movement within the tunnel, particularly during incidents.

It currently takes around ten minutes for tunnel fans to replace the 'piston effect' of free flowing traffic in the tunnel. The installation of 12 new jet fans will allow normal air flow in the tunnel to be restored more quickly so there will be a faster and safer response to incidents in the tunnel.

Did you know?

The M5 East Tunnel is closed at night every four to five weeks for routine maintenance. The closures occur between Sunday and Thursday, with only one direction of the tunnel (westbound or eastbound) being generally closed.

Do the new jet fans require approval?

Currently, air is circulated between the eastbound and westbound tunnels, with the majority of air being released from the tunnel ventilation stack at Turella at 15 metres/second into the atmosphere.

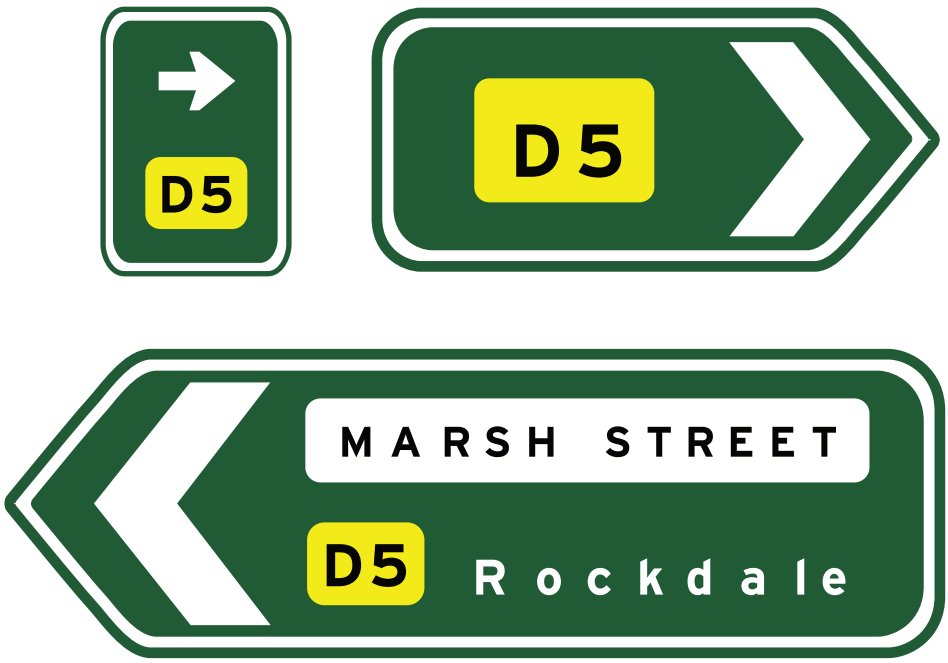
The volume of air flow in the tunnel will remain the same after the jet fan installation (ie more air will not be drawn in and released out of the tunnel portals).

As there are no changes to the existing in-tunnel ventilation, the installation of the jet fans is consistent with the existing conditions of approval for the M5 East Tunnel and no additional approval is required.

How and when will the jet fans be installed?

Installation of the new jet fans will start in early September 2006 and take approximately three months.

EXAMPLE D5 SIGNS



Whilst installing the jet fans, the M5 East Tunnel will be closed to enable access for construction crews.

Tunnel closures will occur at night, ie between the hours of 9pm and 5am and from Sunday to Thursday only.

To minimise impact on traffic, the M5 East Tunnel will be closed in one direction only at any one time. The tunnel closures will be mainly in the eastbound direction (where most of the new fans will be installed) and, on two occasions, in the westbound direction.

How do drivers know where to go during a night time closure?

To assist motorists during tunnel closures, an alternative route will be signposted. This detour route will be signposted as 'D5' along its length. Variable message signs on the M5 will give motorists information on the timing of the closures and when to follow the D5 signs.

The Cooks River Tunnel will generally remain open during the installation of the new jet fans, however it will be closed twice for routine tunnel maintenance, which will coincide with fan installation in the westbound tunnel.

Keep up to date

The latest information on traffic closures will be available on the RTA web site (www.rta.nsw.gov.au). Information on traffic closures will include a D5 map and planned tunnel closures. The RTA web site also contains further details on the air quality management plan for the M5 East.

Who can I contact?

If you would like any more information on the jet fan installation, please contact:

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