

LANE COVE TUNNEL

INTEGRATION GROUP

Report On

Transitioning Of Surface Roadwork

October 2006



New South Wales



LANE COVE TUNNEL INTEGRATION GROUP

REPORT ON TRANSITIONING OF SURFACE ROAD WORKS

Background

The project comprises the connection of the Gore Hill Freeway and the M2 Motorway completing the Sydney Orbital, the connection of Falcon Street and Military Road to the Warringah Freeway, relief of congestion on Epping Road, improved public transport and a new cycleway between Naremburn and North Ryde.

Key works include:

- ◆ The Lane Cove Tunnel, a 3.6 km, dual two/three lane tunnel generally running below the existing Epping and Longueville Roads alignment connecting the Gore Hill Freeway at the Pacific Highway with the M2 Motorway and Epping Road at Mowbray Road west;
- ◆ Two new north-facing (tolled) ramps connecting the Warringah Freeway to Falcon Street and Military Road in North Sydney;
- ◆ A 24 hour T2 transit lane, in addition to the existing two lanes, in each direction on the Gore Hill Freeway between the Pacific Highway and Merrenburn Avenue;
- ◆ Reduction of Epping Road from the current five through-lane tidal flow arrangement to generally four lanes, including a dedicated 24-hour bus lane and general traffic lane in each direction;
- ◆ Implementation of an AM T3 transit lane on Epping Road eastbound between Pittwater Road and Mowbray Road;
- ◆ The introduction of two right turning movements on Epping Road;
- ◆ Provision of a bus interchange and pedestrian overpass; and
- ◆ A shared pedestrian/cycleway on the southern side of Epping Road.

The project is being financed, designed, constructed and will be operated and maintained by Connector Motorways under a Project Deed with the Roads and Traffic Authority of NSW. The Project Deed requires that the Lane Cove Tunnel and Falcon Street Gateway works, all of the associated works on the Gore Hill and Warringah Freeways and most of the other associated works on local roads, properties and services (described as Stage 1 works) must be completed at opening. Opening was originally scheduled by 9 May 2007. The remaining works, including changes to Epping Road (described as Stage 2 works) must be completed within 26 weeks of the completion of Stage 1, i.e. by 7 November 2007. The changes on Longueville Road between the Pacific Highway and Epping Road and on Epping Road between Longueville Road and Mowbray Road West cannot be started before completion of Stage 1.

Under the project approval, the Falcon Street Gateway, the widening of the Gore Hill Freeway and the installation of T2 Transit lanes, and the eastbound T3 Transit lane on Epping Road between Delhi Road and Mowbray Road are to be in place for the opening of the Tunnel, and bus lanes on Epping Road are to be installed within six months of Tunnel opening.

Connector Motorways has advised RTA that the construction works are ahead of schedule and that the current estimated date of completion of Stage 1 of the project is 10 December 2006.

The Lane Cove Tunnel EIS predicted that over 100,000 vehicles per day would be transferred to the Tunnel from surface streets and that surface traffic on Epping and Longueville Roads would be reduced by up to 60%. Anticipated travel time savings of 6 to 14 minutes in the AM peak and 15 to 22 minutes in the PM peak were also predicted in the EIS.

The traffic modelling detailed in the EIS demonstrated that the surface road network would operate satisfactorily when traffic equilibrium is reached, i.e. when the EIS predicted tunnel traffic volume is achieved. However, a period of time is required for traffic equilibrium to be achieved. The process of traffic growth in this interim period is known as ramp-up. The EIS did not include traffic modelling for network operation during the ramp-up period.

While ramp-up is unique to each project, as more toll road projects have opened to traffic, data on the ramp-up of similar projects has been collected and the understanding of potential impacts of ramp-up has increased. This data and improvements in traffic modelling technologies since the EIS mean that the implications of ramp-up can be better assessed.

Connector Motorways has forecast a relatively rapid ramp-up in the first six months, followed by a slower ramp-up over the next 12 to 18 months.

In light of the experience of the Cross City Tunnel, in June 2006 the Minister for Roads established the Lane Cove Tunnel Integration Group (with the participation of RTA, Premier's Department's Infrastructure Implementation Group, Connector Motorways and as required, NSW Treasury, Ministry of Transport and State Transit Authority) to oversee the integration of the Lane Cove Tunnel and the expanded Gore Hill Freeway into the broader road network and to report to the Minister for Roads for the purposes of reporting to Cabinet.

The Lane Cove Tunnel Report of the Joint Select Committee Inquiry into the Cross City Tunnel (August 2006) was concerned about "the possibility of congestion when the Lane Cove Tunnel opens and certain parts of Epping Road are narrowed to two lanes in each direction, with one 24 hour bus lane." The Committee noted that "a staged approach to the proposed Epping Road changes might reduce the potential for traffic congestion, and allow the RTA time to monitor the capacity of the narrowed Epping Road" and that "for future tunnel projects, the RTA should consider imposing a reasonable period between the completion of the tunnel and any disruptive changes to surface traffic arrangements, to allow time for the community to become accustomed to the impact of the project."

The Review of Future Provision of Motorways in NSW (December 2005) recommended that "it should be Government policy to require that where there is an existing arterial road available as an alternative route to a toll road, with the introduction of the toll road the existing arterial road will have at least the same number of general traffic lanes as it had prior to the toll road opening."

The Performance Report by the Audit Office relating to the Cross City Tunnel also recommended all road changes associated with that project be reviewed to determine whether the "road changes are consistent with *current* volumes of traffic" using the tunnel during the ramp-up period.

The Need for Transition Arrangements

RTA's traffic consultant, Masson Wilson Twiney has advised that recent traffic modelling of the project in the ramp-up phase predicts that, if the surface changes are implemented according to the EIS timetable, significant levels of congestion will occur at all major intersections along Epping Road Lane Cove in the morning peak period as well as extensive queuing in Epping Road North Ryde west of Mowbray Road. In the evening peak period, severe congestion is predicted at the intersections of Epping Road with Longueville Road and Centennial Avenue, as well as at Epping Road and Pittwater Road.

Masson Wilson Twiney also advises that not only will ramp-up affect travel times of the general motoring public but also bus patrons. High levels of congestion on the network may have two significant effects on buses. Firstly, it would trap buses in the general traffic stream and prevent access to bus lanes on Epping Road and, secondly, it may result in illegal usage of bus lanes by general traffic seeking to avoid extensive queuing.

The queuing resulting from the imbalance of demand and toll-free capacity would result in excessive congestion, with eastbound queues on Epping Road, North Ryde likely to extend beyond Wicks Road. This would limit the buses from entering the bus lane and therefore cause excessive delays for buses. Consequently the travel time advantages of the bus lanes would not be realised for bus patrons during ramp-up.

The shortfall in capacity during the ramp-up period, resulting from the immediate implementation of the changes on Epping Road before sufficient volumes of traffic transfer to the Tunnel, leads to the need for a transition strategy for Epping Road that progressively reduces toll-free capacity as demand on Epping Road falls and the tolled alternative increases.

Whilst recognising the need for a transition strategy, the Integration Group acknowledged that a thorough environmental assessment of the project had been undertaken and that the basis of the approval of the project was that not only did the project offer significant benefit to motorists but also to public transport users, cyclists and the local community through the surface street changes. The Lane Cove Tunnel Integration Group has determined that it was not appropriate to recommend modification of elements of the project to alter the approved Stage 2 works as this would potentially result in an unacceptable effect on the delivery of the committed benefits to public transport users, local traffic, cyclists and the local community.

The Lane Cove Tunnel Report of the Joint Select Committee Inquiry into the Cross City Tunnel (August 2006) noted that "the significant urban amenity benefits that will arise from the project should not be compromised by decisions intended to compensate for surface traffic congestion. In particular, the shared cycleway and pedestrian path, which is a clear outcome of satisfactory community consultation, should be retained."

The Integration Group has identified that the implementation of staged transition measures to integrate the Lane Cove Tunnel and expanded Gore Hill Freeway into the road network is essential and that the early completion of Stage 1 presents the opportunity to both provide a period of transition from the existing surface road conditions to the approved surface road arrangements, while still delivering the overall project benefits within the original project time frame.

The Transition Options

Five Transition Options were developed for the consideration of the Implementation Group. Details of the options are tabulated in Attachment B.

All of these Transition Options involve staging the implementation of the full range of approved surface traffic arrangements.

Transition Option 1 would be implemented over the shortest timeframe. In the first 6 months after opening, Stage 2 works would be constructed with a minimum of two general traffic lanes being provided along Epping Road in each direction and with bus priority arrangements provided where possible at bus stops and intersections. The construction of the bus interchange, pedestrian bridge and pedestrian/cycleway and removal of the Kimberley Avenue pedestrian overbridge would also occur during the first six months. During this period, the implementation of the bus lanes, right turns, AM T3 transit lanes on Epping Road between Pittwater and Mowbray Road; the Gore Hill Freeway T2 transit lanes; the Pacific Highway link to the Longueville Road on ramp and the Tunnel off ramp link to the Gore Hill Freeway T2 lane would be deferred. These deferred Stage 2 works would be progressively implemented from six months after opening, and completed within approximately one month.

Under Transition Option 2, the surface arrangements would be the same as Transition Option 1 for the first 6 months. For the second six month period, i.e. starting six months after Tunnel opening, the remainder of the Stage 2 works would be implemented in the same manner as for Transition Option 1 except that T3 lanes (instead of bus lanes) would be implemented on Epping Road between Mowbray Road and the Gore Hill Freeway. The T3 lanes would then be converted to bus lanes 12 months after opening of the Lane Cove Tunnel. Similarly, the deferred Stage 2 works and the T3 lanes would be expected to be completed within approximately one month.

Under Transition Option 3, the current traffic arrangements, including tidal flow with three lanes provided in the AM and PM peaks, would continue during the first 6 months and the only construction in this period would involve the bus interchange and pedestrian bridge and removal of the Kimberley Avenue pedestrian overbridge.

The eastbound AM T3 transit lane on Epping Road between Delhi Road and Pittwater Road and the T2 transit lane between Pittwater Road and the Pacific Highway would also remain in place and the T2 transit lanes on the Gore Hill Freeway would be deferred. The opening of the Pacific Highway link to the Longueville Road on ramp and the Tunnel off ramp link to the Gore Hill Freeway T2 transit lane would also be deferred. At six months, Stage 2 would be implemented with a minimum of two general traffic lanes being provided along Epping Road, with bus priority arrangements provided where possible at bus stops and intersections and construction of the pedestrian cycleway. The bus lanes, right turns, T3 transit lanes on Epping Road eastbound between Pittwater Road and Mowbray Road, and the Gore Hill Freeway T2 transit lanes would be deferred and the Pacific Highway link to Longueville Road on ramp and the Tunnel off ramp link to the Gore Hill Freeway T2 lane would be closed during this period. At 12 months the deferred Stage 2 works would be implemented, except that Epping Road bus lanes would be replaced with T3 transit lanes. The T3 transit lanes on Epping Road would then be converted to bus lanes 18 months after opening of the Lane Cove Tunnel. Similarly, the deferred Stage 2 works and the T3 lanes would be expected to be completed within approximately one month.

Transition Option 4, would involve exactly the same implementation strategy as Transition Option 3 up until 12 months, at which time all of the deferred Stage 2 works would be implemented including the Epping Road bus lanes.

Transition Option 5 would involve the same implementation strategy as for Transition Option 4, except that the implementation timeframes would be linked to Project Deed milestones to take advantage of the potential for early opening of the Project and avoid some contractual issues associated with the Project exceeding current contractual completion dates. The first period, during which no work would be undertaken except for the construction of the bus interchange and the pedestrian bridge would end on 9 May 2007. Stage 2 works would then be implemented by 7 November 2007, with the bus lanes implemented by October 2007.

It should be noted that with all Transition Options the Lane Cove bus interchange and the associated pedestrian bridge over Longueville Road will proceed independently of the other surface road changes.

The RTA commissioned Masson Wilson Twiney to assess the operational traffic impacts of the Transition Options and to provide advice to the Integration Group. The Traffic Assessment Report (the MWT Report) prepared by Masson Wilson Twiney is appended as Attachment A.

The key findings and conclusions of the MWT Report are as follows:

- ◆ Based on Eastern Distributor experience (the most comparable project) and detailed traffic modelling, significant ramp-up is expected to occur in the first six months with full ramp up tapering out over approximately two years;
- ◆ Traffic modelling predicts significant congestion levels at all major intersections along Epping Road Lane Cove during the ramp-up period in the morning and evening peak periods if surface traffic arrangements are not transitioned;

- ◆ This congestion supports the need for the staging of the implementation of surface traffic changes. However, if the approved surface traffic arrangements are not implemented in the longer term, induced traffic may result;
- ◆ Any one of the five Transition Options would provide relief during ramp-up with Options 3, 4, and 5 achieving a more acceptable level of service along Epping Road;
- ◆ Implementation of a Transition Option is essential to minimise impacts on road based public transport during the ramp-up period; and
- ◆ Traffic conditions would be satisfactory for both the Tunnel and Epping Road after ramp-up.

The Preferred Option

Based on the advice from Masson Wilson Twiney that options 3, 4 and 5 achieved a more acceptable level of service along Epping Road, the Integration Group focussed its attention on these three options.

There is merit in linking transition option milestones to Project Deed milestones for Stages 1 and 2 in order to maintain the integrity of the project's planning approval and contractual arrangements. This linkage is best provided by Option 5 which links the commencement of the Stage 2 traffic changes with the contractual Stage 1 completion date of the project, i.e. 9 May 2007, and the completion of Stage 2 with the contractual Stage 2 completion date of 7 November 2007. That is to say, under Transition Option 5 the Project would be completed within the same time as if Connector Motorways had not opened the Tunnel until it was required to do so by 9 May 2007.

After consideration of the merits of the options of the Integration Group identified Option 5 as the preferred option for the following reasons:

- ◆ This option provides relief to congestion on Epping Road during ramp-up and provides an acceptable match between reduction in capacity and expected demand in the first 11 months after tunnel opening;
- ◆ In respect of impacts on pedestrians, cyclists, and public transport, this option provides an appropriate balance between the needs of motorists and other road users;
- ◆ This option addresses the findings of the Review of Future Provision of Motorways (Dec 05), and the Joint Select Committee on the Cross City Tunnel (Feb 06 and Aug 06) in undertaking surface road modifications subsequently and progressively rather than at tunnel opening;
- ◆ This option takes direct advantage of the early completion of the tunnel construction and delivers the Stage 2 works program, commencing in May 2007, in line with the original project completion target of 7 November 2007;
- ◆ This option ensures delivery of the Approved Project including the primary objectives and benefits of the Lane Cove Tunnel Project by the original project completion date of 7 November 2007, including the bus lanes and transit lanes which are actively sought by many in the community;
- ◆ This option avoids significant contractual issues associated with the project exceeding contractual completion dates and consequently significant costs; and,