# SUBMISSION

**TO**

# THE COORDINATOR-GENERAL

**ON THE**

# AIRPORT LINK

# ENVIRONMENTAL IMPACT STATEMENT

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# RACQ Submission on the Airport Link Environmental Impact Statement

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The RACQ's comments below are based on information in the *Airport Link Environmental Impact Statement* (EIS), October 2006, a stakeholder information briefing, and our analysis of pertinent traffic congestion issues and strategies in respect of Brisbane.

## 1.0 General Comments

The Airport Link (AL) cannot be considered in isolation as it represents a motorway-standard extension of the North-South Bypass tunnel (NSBT) and connects with other components of the Brisbane road network. When RACQ commented on the NSBT, it explained that if the NSBT was to proceed, it would significantly increase traffic volumes along feeder roads, such as Lutwyche Rd, which are already heavily congested. One option to reduce congestion at these problem locations was to fast track AL.

The Club understands that AL plays a vital role in enhancing the NSBT's viability as a cross-city bypass, providing a new link to the airport, and establishing an arterial orbital segment connecting the East-West Arterial Road and Stafford Road. However, it appears that AL, in itself, generates its own set of congestion issues, primarily where it connects with the surface network. This is typical when major infrastructure projects are added to an overstressed road network and where limited attention is given to upgrading connectors or they are declared to lie outside an arbitrary screen line of the projects' defined area of impact, e.g., Gateway Motorway/Airport Drive Roundabout.

The Club strongly reiterates its opposition to tolling of new road capacity because tolls:

- are an additional cost imposed on the motorist, when various studies have shown that existing motoring taxes cover the full social costs of road use; and
- interfere with attainment of the optimal benefits of such infrastructure by 'tolling off' users of the infrastructure at peak and off-peak times.

More detailed RACQ comments about Airport Link follow.

## 2.0 Economics

The "Economic Environment" chapter and the Technical paper on "Economics" reported the results of a benefit cost analysis of AL. The analysis revealed a nett present value of $131 million and a benefit/cost ratio of 1.1 at a discount rate of 6.8 percent. The "Economic Environment" chapter said (p. 16-37) these "results provide an economic justification for the project proceeding." The Technical Paper added the important qualification that the economic justification was not compelling (p. 64). It certainly is not compelling.

The sensitivity analysis should have included higher and lower discount rates than the base rate of 6.8 percent. However only a lower discount rate of 5.5 percent was applied. A higher rate of say, 8 percent, would have resulted in a negative nett present value and a benefit/cost ratio below one. Some economists would argue a case could be made for application of a higher rate because it would be closer to the social opportunity cost of capital.

The economics of the project has been severely handicapped by the intention to toll it. The chapter on "Traffic and Transport" and the "Technical Paper" on that topic indicate that usage of AL would be about 43,000 vehicle movements per day or 41 per cent more without tolls than with the proposed toll regime in 2016. To the extent that the toll is cut, aggregate travel time savings, vehicle operating cost savings and air pollution benefits would rise. The result would be a higher nett present value and benefit/cost ratio, bearing in mind the point that tolls are transfer payments as the economic chapter and paper explain.

Of course the effects of alternative financing mechanisms for the project would have to be considered. Many state taxes and charges and some expenditure reallocations could have significant adverse economic effects. But, there are ways of financing the project that would have positive effects on economic efficiency.

One example is that there would be nett social gains from axing the Northern Busway (NB) and reallocating the proceeds to AL. The NB has a benefit/cost ratio of just 0.6 at a discount rate of 6.8 percent, and even that ratio was overstated because land and bus costs were excluded from the analysis. Scrapping the busway would yield nett social gains with a nett present value of the order of $250 million to $300 million. Reallocating the investment of $811 million plus property and bus costs to cut tolls would substantially increase the AL's benefits and benefit/cost ratio.

Another example is that proceeds of sale of the government's electricity and gas distribution businesses could be transferred to urban road projects like AL instead of water projects, while the latter could be financed via water charges designed to ration scarce supplies efficiently. This would avoid inefficiencies and funding shortfalls for new capacity associated with restrictions on use. So, the efficiency of both the transport and water sectors would be substantially improved.

A third example is that a network-wide congestion pricing regime could be implemented in Brisbane to reduce congestion costs directly, to provide revenue for more road capacity, like AL, and to improve the viability of the existing and future public transport system. These concepts, along with caveats, are discussed in detail in the attached paper, *Stuck in Traffic and Stuck for Solutions: Brisbane's Congestion Crisis*.

The proposal to toll the AL to pay for its provision undermines the purpose of the road, viz., to alleviate congestion. The toll will encourage drivers to stay on existing unpriced, congested roads….43,000 vehicles per day (vpd) in 2016 according to the draft AL EIS. This undermines the efficiency of use of new and existing roads. The higher the toll, the greater is the social loss. Therefore, since the purpose of AL is to alleviate congestion, any toll should <u>not</u> be based solely on the cost of providing the road. Specification of a toll should have regard to benefits of reducing congestion on

clogged, unpriced, alternative roads and avoiding under- and over-use of the new road.

AL will make available a priced premium service as an alternative to competing congested roads on the unpriced network, while covering full economic costs (including a target rate of return on capital). As prominent transport economists have explained, a fundamental flaw in this approach to road provision and pricing is that it won't even get close to optimal congestion alleviation. For tolled roads or lanes to be attractive to potential users, a significant speed difference must be maintained between priced and free substitutes. This means the free roads/lanes must remain congested. It is only such congestion that creates a market for a priced option. Cutting congestion substantially on existing free lanes, through provision of new tolled links or extra free lanes, would eliminate the incentive to pay to use the priced roads/lanes. Toll road projects can "work" or cover their full economic costs only if governments fail to make significant progress towards reducing congestion on the network overall. Also, they can function as intended, only if direct traffic connectors to the tolled facility are not congested. This obviously will not be the case for some connectors such as Stafford Road.

Simulation studies by Kenneth Small, Erik Verhoef, Jan Rouwendal and Ian Parry have demonstrated that tolling of selected individual roads would yield no more than 24 percent of the nett community benefits of network wide congestion-pricing. This result was based on assumptions particularly favourable to toll-roads, including the tolling strategy being properly designed to target congestion alleviation. But, in reality, tolls are typically set to target recovery of costs or maximisation of profits, rather than alleviation of congestion. The latter will apply to AL.

Other simulations have shown that if the new road is only a partial substitute for existing roads because of some differing functions, the nett welfare maximising toll could be low, perhaps zero or negative (motorists would be paid to use the new road). Obviously, this would conflict dramatically with a cost recovery or profit maximising target.

The shortcomings of toll-roads are greater when they are privately owned and operated, as proposed for AL and determined for the NSBT. The causes are inappropriate allocation of risk bearing, and conflict between the congestion-alleviation goal of governments and the profit maximising objective of private operators. Both adversely affect the efficiency of resource-use. Further discussion of these matters and related references can be found in the attached paper, *Stuck in Traffic and Stuck for Solutions: Brisbane's Congestion Crisis*.

## 3.0 Reallocation of road space to Bus or High Occupancy Vehicle (HOV) lanes

The authors of the EIS argued that AL would "free up" road space on Lutwyche and Sandgate Roads providing opportunities to confiscate general traffic lanes to bus or high occupancy vehicle (HOV) lanes (Project Rationale, p. 2-18; Conclusions and Recommendations, p. 22-2; Technical Paper No. 1, Traffic and Transport, p. 12-216). Previously, the Queensland Government had proposed such a policy in its *Draft TransLink Network Plan* in 2005 and a similar proposal appeared in Brisbane City Council's *Transport Plan for Brisbane 2002-2016*.

Traffic volume predictions in Table 10-4 of EIS "Technical Paper No. 1, Traffic and Transport", indicate that traffic will decrease on Sandgate Road south of Bonney Avenue from 57,300 vpd in the "do nothing" case to 43,000 vpd in 2012 (a reduction of 25 percent) with AL and NB. In 2026, traffic was forecast to decline from 71,000 vpd to 51,500 vpd in 2026 (a reduction of 27.5 percent).

However, the forecast reductions relative to the "do nothing" case need to be viewed in context. With AL and NB in place, traffic is still forecast to increase substantially on Sandgate Road south of Bonney Avenue from 35,900vpd in 2004 to 43,000vpd by 2012 (20 percent increase) and to 51,500vpd by 2026 (43.5 percent increase). These increases are slightly higher than without NB (see Table 5-32 of EIS chapter 5, Traffic and Transport).

These figures are in line with the forecast 45 percent more vehicle trips in the metropolitan area and future north-south travel movement growth in the Inner North area of more than 50 percent between 2004 and 2026, even with huge capital and operating subsidies for public transport and growth in public transport's trip share from 7.5 to 11.1 percent.

Sandgate Road is already heavily congested at peak times. Also, RACQ's 2005 "Travel Time Survey" indicated that Sandgate Road had the greatest average outbound speed reduction since the 1993 survey.

But, with AL and NB in place, congestion will worsen on Sandgate Road, even if general traffic lanes are not confiscated for bus or HOV lanes. Clearly, a 'take-a-lane' bus facility on Sandgate Road would make the problem substantially worse and would be a foolish move. The alternative of an 'add-a-lane' facility should be subjected to rigorous traffic analysis and benefit/cost analysis including comparisons with alternative options such as an additional general-purpose lane.

In the case of Lutwyche Road, according to Table 5.32, traffic south of Kedron Park Road and north of Stoneleigh Street will fall by 2 to 4.5 percent between 2004 and 2012 if AL is built. Meanwhile, traffic south of Newmarket Road will rise by 14 percent. However, according to Table 10-4, with AL and NB in place, Lutwyche Road traffic between Kedron Park Road and Stoneleigh Street will decline between 2004 and 2012 by 20 to 24 percent, while south of Newmarket Road, traffic is expected to increase by 13.6 percent.

Figures were not presented for the segment of Lutwyche Road between Stoneleigh Street and Newmarket Road. However, Table 20-36 of the "NB Draft Concept Design and Impact Management Plan" (CDIMP) indicates a 25 percent reduction in traffic from 2004 to 2012 with the AL and NB in place in the vicinity of Albion Road. But, this will be more than offset by a reduction in road capacity of one third through confiscation of general traffic lanes for bus lanes. So, congestion would worsen after provision of AL and the Interim Northern Busway.

These figures imply that AL will do very little to stop congestion worsening on Lutwyche Road, but the Interim Northern Busway would have quite an impact between Kedron Park Road and Stoneleigh Street. However, Table 10-4 figures indicating reductions in traffic volumes of 11,200vpd to 14,300vpd on this segment from 2004 to 2012 seem inconsistent with estimates of nett increases in public

transport patronage arising from the NB as presented in Table 20-34 of chapter 20 of the NB Draft CDIMP.

Suggestions that the AL and NB would "free up" sufficient road space to allow confiscation of general traffic lanes for bus lanes on Lutwyche Road are at best dubious and most probably false. Such action would worsen congestion on a road already operating above capacity, according to RACQ's 2004 travel time survey. The survey revealed that the average peak hour inbound speed along the section of Lutwyche between Bradshaw Street and Bowen Street was 19 km/h, with a speed as low as 8 km/h near Bowen Street, and outbound between Harris Street and Bradshaw Street the average speed was 36 km/h, with a speed as low as 26 km/h near Albion Rd.

## 4.0 Effects on the road network

Table 5-36 indicates that a number of intersections will operate at level of service (LOS) F with or without Airport Link. Those with direct connections to the corridor include Gympie Road/Stafford Road, Lutwyche Road/Kedron Park Road, Lutwyche Road/Newmarket Road, Lutwyche Road/Northey Street, Bowen Bridge Road/Butterfield Street, Sandgate Road/East-West Arterial, and Sandgate Road/Junction Road. Those removed some distance from the immediate corridor include Stafford Road/Webster Road, Sandgate Road/Frodsham Street/Crosby Road/Abbotsford Road, Abbotsford Road/Folkestone Road Sandgate Road/Albion Road, and Breakfast Creek Road/Montpelier Road.

A number of other intersections will also suffer from increased congestion due to Airport link. Declining LOS and increasing travel times for a number of roads in the impact area raises concerns whether AL is the most effective option for reducing congestion on the overall road network as it:

- disadvantages both the many dispersed local and intra-regional surface trips because of congestion on inner suburban connector roads; and
- merely gives priority to long distance trips for those users prepared to pay a toll and who can access the corridor some distance from the tunnel portals.

RACQ believes that the Queensland Government and Brisbane City Council should take more responsibility for adverse effects of AL on the road network both inside and outside the project area. Roads that have significantly increased traffic demands placed on them as a direct result of the project should be upgraded as part of its scope.

Two prime examples are the Stafford Road/Webster Road intersection and the Airport Drive/East-West Arterial Road roundabout. These are discussed below.

## 4.1 Stafford Road / Webster Road Intersection

"Technical Paper No. 1, Traffic and Transport" states (p. 9-135), '*It is noted that at the Stafford Road/Webster Road intersection, east-west traffic increases on Stafford Road are somewhat balanced by north-south traffic decreases on Webster Road*.'

This intersection is already operating at low LOS F in the AM peak, and LOS D in the PM peak (Table 10-6). Tables 10-2 and 10-4 detail traffic forecasts with and without the AL and NB. In 2004, Webster Road south of Stafford Road recorded 25,100vpd

and the forecast volume in 2012 with AL and NB is 24,800vpd, a very minor decrease of 300vpd.

Stafford Road west of Webster Road is expected to experience a 40 percent or 8,800 vpd increase from 22,000vpd in 2004 to 30,800vpd in 2012 with AL and NB in operation. This substantial increase in traffic on Stafford Road would not be adequately offset by the forecast slight decrease in traffic volumes on Webster Road, particularly in view of the forecast that traffic on Stafford Road west of Richmond Street (i.e., traffic on Stafford Road approaching the Webster Road intersection from the east), would increase by 13,700vpd (72 percent increase) compared with 2004 traffic volumes.

As stated above, Table 10-6 shows that Stafford Road/Webster Road intersection in 2004 recorded an AM/PM peak period LOS of F and D, respectively. By 2012 and continuing through to 2022, this intersection drops to LOS F for both AM and PM peak periods, with higher degrees of saturation (DOS), leading to more instances and longer periods of unstable flow conditions and therefore increased congestion.

Stafford Road from Gympie Road to Appleby Road/Shand Street in general is of concern to the RACQ. It is forecast that Stafford Road will have traffic volumes of 45,000vpd in 2026. While this might be within capacity at mid-block locations, it is not acceptable to dismiss increasing traffic capacity problems by saying (p. 5-85), "*forecast peak volumes may be accommodated by an increase in the duration of the peak period due to peak spreading effects."* That simply means that they propose to let congestion worsen.

RACQ believes many more improvements would be necessary than the EIS' proposed minor improvements, such as parking restrictions at intersection approaches, turn bans, indented bus bays and signalising of some side streets ("Technical Paper No. 1, Traffic and Transport", p. 9-135). For example, consideration should be given to grade separating straight-ahead traffic lanes of Stafford Road under Webster Road in both directions, similar to the underpass facility at Normanby Fiveways.

### 4.2 Airport Drive / East-West Arterial Road Roundabout

It is noted that AL does not include an upgrade of the Airport Drive/East-West Arterial roundabout even though Table 9-14 of "Technical Paper No.1" indicates an increase of 400vehicles per hour (vph) in the AM peak and the PM peak directly related to the completion of the Airport Link in 2012, after allowing for the new northern entrance to the airport from an upgraded Gateway Motorway.

This roundabout and the Nudgee Road intersection need to be upgraded by further grade separation to handle the impacts of both this project and the Gateway Upgrade project. This proposed upgrade should be publicly funded in preference to higher tolls for either of the tolled projects.

## 5.0 Other Traffic Issues

### 5.1 Kedron Connection Plan (Gympie Road Tunnel Connection)

Volume 2 of the Airport Link EIS – "Preliminary Design Drawings" - Kedron Connection Sheet 2 of 3 shows that outbound traffic from the tunnel will arrive on the surface of Gympie Road as two lanes (out of three outbound lanes provided on Gympie Road). The RACQ understands the importance of having unimpeded access from the tunnel portals to the surface road, but is concerned about outbound traffic flows on the surface road.

Outbound surface road vehicles that pass through the Gympie Road/Stafford Road intersection are almost immediately required to merge right due to a lane drop from three to two lanes.

Outbound surface road vehicles are then required to again merge from two lanes to one lane due to a lane drop adjacent to the outbound tunnel portal exit to the surface. The RACQ is concerned that the lane drops on the surface road from three lanes to one lane overall within approximately 200m will cause significant congestion issues during peak times.

The RACQ believes that large volumes of outbound traffic will already be on Gympie Road when it merges with AL tunnel exit due to:

- the wide variety of origins and destinations of trips in the local area;
- limited access to the tunnel for travellers intending to head northbound (e.g., vehicles from Newmarket Road north, including Kedron Park Road); and
- the tolling-off effect.

Therefore, it is important to widen the road corridor to accommodate four lanes outbound north to at least Broughton Road. Surface road vehicles travelling in the outbound left lane (lane drop) should be provided with a longer merge length to perform their merge manoeuvres into the continuous right lane while surface road vehicles in the continuous lane should be provided with a greater distance to merge with tunnel traffic on their right, presenting more opportunities for lane drop vehicles to select appropriate gaps to merge right and hence less potential conflicts and congestion for all northbound vehicles.

The RACQ reiterates its opinion that intersections and road sections operating at s poor LOS should be prioritised for capacity improvements to adequately manage the expected increased traffic demand generated not only by the AL and NB, but traffic growth in general.

No reduction in general purpose lane space should be considered as part of AL, even with a predicted lowering of traffic volumes on certain roads. Traffic growth and the vast expansion of the road freight task over the next few decades must be accommodated efficiently for the benefit of economic activity and growth in Brisbane and SEQ.

## 6.0 Spoil Haulage

From information contained in RACQ surveys and general knowledge of road conditions, it is understood that all designated spoilage routes include heavily congested intersections and road segments.

As suggested in EIS Chapter 5, “Traffic and Transport”, 5.7.3 – “Haul Routes”, Traffic Management Plans (TMP’s) should investigate spoil haulage impacts at key intersections and road sections and make necessary changes to frequency of haulage trips if adverse impacts are predicted.

TMP’s should also include monitoring of adverse impacts associated with spoil haulage throughout the construction period and also take into consideration the combined impact of NSBT and AL spoil haulage on roads such as Kingsford Smith Drive when spoil haulage trips are at their peak in early 2009 (350 round trips or 14 trips per hour in each direction).

Careful consideration should be given to the number of haulage trips scheduled for peak traffic periods, especially during the crossover period where both the NSBT and AL will be contributing a combined 14 trips per hour along Kingsford Smith Drive.

The RACQ recommends that there be very limited spoil haulage trips undertaken during AM peak (7:30am – 9am) and PM peak (4pm – 6pm) at all worksites.

The Schneider Road extension across the Pinkenba rail line, proposed to be operational by 2008 as part of the Australia Trade Coast development, should be the designated spoil haulage route to the spoil disposal site from Kingsford Smith Drive to avoid congestion on Nudgee Road and extra turning movements/congestion at the Nudgee Road/Kingsford Smith Drive intersection.

## 7.0 Other Construction Issues:

Some general comments follow in relation to the impact of construction of associated works that would directly impact on surface roads.

Traffic Management Plans (TMP’s) should ensure that the safety of workers on-site and motorists travelling through road works is not compromised.

Lane closures should be kept to a minimum and preferably in off-peak or night operations to minimise impacts on travel times and speeds through road works. Road works, diversions and speed restrictions should be clearly signed in accordance with the Manual of Uniform Traffic Control Devices and be regularly monitored for appropriateness and clarity.

Deliveries to all worksites should be managed under specific site Traffic Management Plans to cause as little disruption to traffic as possible.