

# Coordinator-General's change report

Clem Jones Tunnel  
(formerly the North South Bypass Tunnel)

October 2008



# Clem Jones Tunnel

## Contents

<b>Coordinator-General's Change Report - Synopsis .....</b>	<b>3</b>
<b>1. Introduction .....</b>	<b>5</b>
1.1 The Proponent .....	5
1.2 Background.....	5
1.3 Requests for evaluation of proposed change.....	6
<b>2. Description and reasons for the proposed changes to be evaluated</b>	<b>7</b>
2.1 Spoil haulage hours .....	7
2.2 Airblast overpressure from construction blasting .....	9
2.3 Operational air quality monitoring locations .....	11
2.4 Height of southern ventilation outlet.....	12
<b>3. Public notification of the proposed change .....</b>	<b>13</b>
3.1 Details of public notification .....	13
3.2 Submissions received.....	15
3.3 Response to submissions received.....	15
<b>4. Evaluation of environmental effects of the proposed change .....</b>	<b>15</b>
4.1 Spoil haulage hours .....	16
4.2 Airblast overpressure from construction blasting .....	17
4.3 Operational air quality monitoring locations .....	19
4.4 Height of southern ventilation outlet.....	21
<b>5. Conclusion .....</b>	<b>22</b>
<b>Appendix 1: Amended conditions .....</b>	<b>23</b>



# Coordinator-General's Change Report—Synopsis

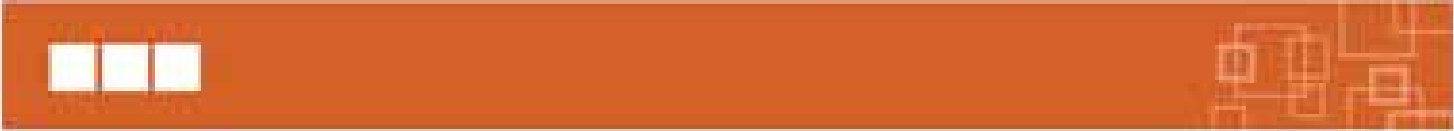
This report has been prepared pursuant to s.35I of the *State Development and Public Works Organisation Act 1971* (the Act) and provides an evaluation of the environmental effects of a proposed change to the Clem Jones Tunnel (formerly the North South Bypass Tunnel) project (the Project), which was the subject of an evaluation under the provisions of the Act in August 2005, with minor changes evaluated in July 2006. This change report is in respect of two requests made to me by the proponent and evaluates four proposed changes, being three proposed changes to conditions of the Project and one proposed change to the Project. For convenience and clarity I chose to prepare this single Change Report in relation to the two requests.

The Proponent for the Project, Brisbane City Council, provided me with a written notice dated 6 May 2008 requesting that I assess a proposed change to a condition of the Project, in accordance with section 35D of the Act. The condition proposed to be changed is Condition 3 of Schedule 1 of the Coordinator-General's report, as amended by the Coordinator-General's change report dated 21 July 2006, relating to the haulage of material excavated for the tunnel (spoil).

The proposed change originally requested was to allow the haulage of spoil from the Bowen Hills worksite to the spoil disposal site in the Australia Trade Coast and Brisbane Airport areas at Eagle Farm between 6:30am Sunday and 6:30am Monday (excluding public holidays) from 1 July 2008 to 30 June 2009. However, the Proponent amended its proposed change after considering the submissions received in response to public notification of the proposal. The amended request made to me for my evaluation was to extend the permitted hours of spoil haulage until 12:30pm on Sundays—that is, a six hour extension on the current permissible hours of haulage.

On 4 August 2008 the proponent made a further request to me for the evaluation of three proposed changes, being changes to conditions of the Project relating to construction blasting and the location of operational air quality monitoring stations and a change to the Project being the height of the ventilation outlet at the southern end of the Project.

In evaluating the likely environmental effects of the proposed change and its effects on the Project, I have considered the nature of the proposed change on the Project, the submissions received during the submission period, the further information provided by the proponent in response to the submissions received and the Project as evaluated under the Coordinator-General's Report of 25 August 2005.



In relation to the request to extend the spoil haulage hours, I have decided, after considering the submissions received during the public consultation period, not to allow any change to the permitted spoil haulage hours. In making this decision I have considered the substantial increase in the number of projects being constructed in the Brisbane area in the past few years, and the cumulative impacts these projects have had on the community. By not allowing an extension to the spoil haulage hours, I hope that residents living in close proximity to the haulage route are able to continue to enjoy a day of respite from traffic noise that Sunday brings, as a number of submitters to me during this process have highlighted.

In relation to the more insignificant changes proposed, I have evaluated the environmental effects of these changes and am satisfied they can proceed. I understand an increase in the height of the southern ventilation outlet is likely to have a beneficial impact on ambient air quality due to the improved dispersion that the higher outlet point will provide. In relation to the changes proposed to the conditions regarding airblast overpressure and the operational air quality monitoring stations, and in accordance with section 35I(2) of the Act, I have amended these conditions to provide clarification of the environmental outcome that the conditions seek to achieve. Appendix 1 to this report contains the amended conditions.

In accordance with section 35J of the SDPWO Act, a copy of this report will be provided to the proponent and the advisory agencies that participated in the change report process. This report will also be made publicly available on the Department of Infrastructure and Planning's website at: [www.dip.qld.gov.au/eis](http://www.dip.qld.gov.au/eis)

.....

**Colin Jensen**

**Coordinator-General**

**Date: 13 October 2008**

# 1. Introduction

This Report has been prepared pursuant to section 35I of the *State Development and Public Works Organisation Act 1971* (the Act) and provides an evaluation of the environmental effects of four proposed changes to the Clem Jones Tunnel Project (formerly the North South Bypass Tunnel Project) (the Project), which was evaluated in the Coordinator-General's Report dated 25 August 2005 and the Coordinator-General's Change Report, dated 21 July 2006.

## 1.1 The Proponent

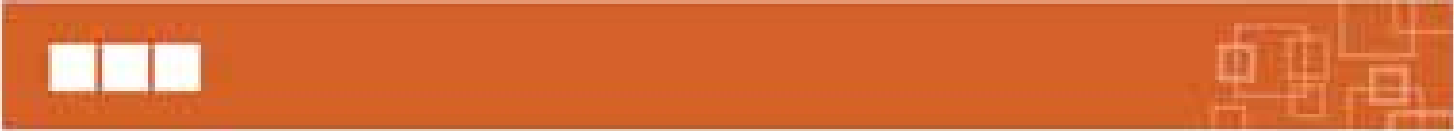
Brisbane City Council is the proponent for the Clem Jones Tunnel project. Brisbane City Council has contracted the RiverCity Motorway Consortium (RCM) to build, own, operate, finance and maintain the Project and RCM has engaged Leighton Contractors and Boulderstone Hornibrook Bilfinger Berger Joint Venture (LBB JV) as the design and construction contractor for the Project.

## 1.2 Background

The Project is a road tunnel to connect the M1 (Pacific Motorway) and Ipswich Road at Woolloongabba with the Inner City Bypass and Bowen Bridge Road at Bowen Hills. The route will follow the alignment of Ipswich Road/Main Street, cross under the Brisbane River beneath the Story Bridge, and exit north-east of the RNA Showgrounds. There will also be connections near Shafston Avenue to provide for traffic travelling to and from the eastern suburbs.

On 15 April 2004, the Coordinator-General declared the Project to be a 'significant project for which an environmental impact statement (EIS) is required' under s.26 of the Act. An EIS prepared by the proponent was released for public review and comment. The proponent also prepared a supplementary EIS to address matters raised in submissions received on the EIS. The Coordinator-General determined that the Project could proceed, subject to specific conditions to manage potential adverse environmental impacts, as set down in the Coordinator-General's report dated 25 August 2005.

In May 2006, following completion of a Public Private Partnership competitive bidding process for the design, construction and operation of the tunnel, the proponent requested that the Coordinator-General evaluate proposed changes to the project in line with the final design agreed with the preferred bidder. Those changes related principally to the project area footprint and the construction methods. On 21 July 2006 the Coordinator-General finalised his report evaluating the environmental effects of the proposed changes. The change report amended certain conditions relating to spoil (material excavated for the tunnel) haulage and placement, traffic management, urban regeneration and construction.



The Project was referred to the Commonwealth Minister for the Environment and Heritage (the Commonwealth Minister) under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (the EPBC Act). On 21 September 2005 the delegate of the Commonwealth Minister decided that the proposed action, to construct and operate the Project, including the construction of the Brisbane River tunnel crossings, surface road connections and the haulage and placement of spoil, was not a 'controlled action' under the EPBC Act.

The Bowen Hills worksite is the principal worksite for the Project and the majority of spoil from tunnelling activities is transported by truck from the Bowen Hills worksite to the Australian Trade Coast site at Brisbane Airport for use as fill for industrial land development. Each tunnel boring machine (TBM) progresses in the order of 100m per week, resulting in excavation of approximately 25,000 cubic metres or 65,000 tonnes of rock. This rock is transported to the Trade Coast site.

The route for spoil haulage is from the Bowen Hills worksite directly onto the Inner City Bypass using a purpose-built bridge, along Kingsford Smith Drive to the Australian Trade Coast site via the new Schneider Road Bridge.

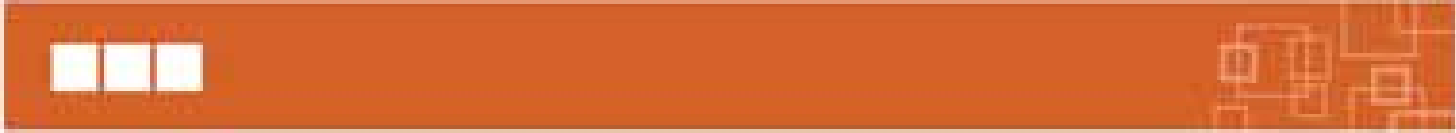
Tunnelling by roadheader and blasting is occurring at Shafston Avenue and Gibbon Street, Woolloongabba and the excavation at Shafston Avenue will be complete in September 2008. Tunnel excavation at Gibbon Street is expected to be completed by December 2008.

Other current work occurring on the Project includes the construction of the ventilation outlets at Woolloongabba and Bowen Hills and the finalisation of planning arrangements for the operational requirements of the tunnel, such as the location of air quality monitoring stations to monitor ambient air quality once the tunnel is operating.

Four operational ambient air quality monitoring stations will be installed by the contractor in accordance with the Coordinator-General's Report. There will be a ground level and a high level monitoring station to measure air quality in the vicinity of each ventilation outlet. There will be two ventilation outlets for the Project, and these will be located in Bowen Hills and Woolloongabba.

### 1.3 Requests for evaluation of proposed change

Division 3A of Part 4 of the Act relates to proposed changes a proponent wishes to make to a 'significant project' or a condition of the project, following completion of the Coordinator-General's Report evaluating the EIS. Section 35C of the Act provides that the Coordinator-General may evaluate the environmental effects of the proposed change, its effects on the project and any other related matters.



This Change Report is in respect of two requests for project change made by the proponent and requires the evaluation of four proposed changes to the project or a condition of the project (the proposed changes).

The Project proponent provided me with a written notice dated 6 May 2008 requesting that I assess a proposed change to a condition of the Project relating to spoil haulage hours, in accordance with section 35D of the Act. A report that describes the proposed change and its effects on the Project was provided with the written notice requesting my evaluation of the proposed change. The report was prepared by the contractor for the design and construction of the project, Leighton Contractors and Baulderstone Hornibrook Bilfinger Berger Joint Venture (LBB JV) and included a Road Traffic Noise Assessment and an Analysis of Haulage Traffic.

On 4 August 2008 the Proponent provided me with a further written notice requesting my evaluation of three additional proposed changes to the Project. The three changes proposed were changes to conditions of the Project relating to construction blasting and the location of operational air quality monitoring stations and a change to the Project being the height of the ventilation outlet at the southern end of the Project. Supporting information was also submitted with this request, which includes written reports from air quality and blasting consultants as well as correspondence from LBB JV to the Proponent.

A copy of these requests, including the supporting information submitted with the requests, is available through the Department of Infrastructure and Planning's website: [www.dip.qld.gov.au/eis](http://www.dip.qld.gov.au/eis).

## **2. Description and reasons for the proposed changes to be evaluated**

### **2.1 Spoil haulage hours**

Brisbane City Council has requested a change to a condition of the Project related to the permitted hours for haulage of material excavated for the tunnel (spoil).

Spoil is transported using trucks and the current condition allows the haulage of spoil material from the Bowen Hills worksite to occur from 6:30am Monday until 6:30am Sunday, with no haulage permitted on public holidays. The route for spoil haulage will be from the Bowen Hills worksite directly onto the Inner City Bypass using a purpose-built bridge, along Kingsford Smith Drive to the Australian Trade Coast site at Eagle Farm via the new Schneider Road Bridge.

A report that describes the proposed change and its effects on the Project was provided with the written notice requesting my evaluation of the proposed change. The report was prepared by the contractor for the design and construction of the project, Leighton Contractors and Boulderstone Hornibrook Bilfinger Berger Joint Venture (LBB JV).

The current condition relating to the permitted hours for spoil haulage in Schedule 1 of the Coordinator-General's Change Report states:

**3. For spoil placement**

...

*(e) The spoil haulage fleet is to be managed in accordance with a construction vehicle management plan, which includes:*

*(i) nominating haulage routes which, as far as is reasonable and practicable, rely upon arterial roads and minimise the use of minor roads;*

*(ii) nominating the hours for collection and haulage of spoil from construction sites;*

*(A) generally in the range of 6.30 am to 6.30pm Mondays to Saturdays with no haulage on Sundays or public holidays; and*

*(B) for spoil from the Bowen Hills worksite which may be undertaken at any time from 6:30am Monday to 6:30am Sunday and at no other time on Sundays and at no time on public holidays*

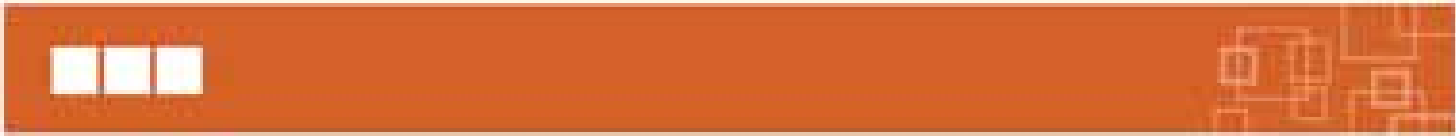
*(iii) measures for avoiding disruption of scheduled major events (eg Brisbane Exhibition at Bowen Hills, events at the Brisbane Cricket Ground) and to co-ordinate with scheduled major construction works on other major projects (eg Green Bridge, Boggo Road busway, Gateway Upgrade Project);*

...

The Proponent requested I evaluate a proposal to amend the condition to allow the haulage of spoil from the Bowen Hills worksite to the spoil disposal site in the Australia Trade Coast and Brisbane Airport areas at Eagle Farm to occur 24 hours a day, seven days a week (excluding public holidays) from 1 July 2008 to 30 June 2009.

The proponent has advised that the proposed change is to minimise impacts associated with spoil haulage from the Bowen Hills worksite. In the request for evaluation of the proposed change the proponent submitted that traffic congestion had strongly increased since the conditions in the Coordinator-General's reports were set, particularly during expanded peak hours and along the key project haulage routes. By allowing haulage to be spread over a longer time period the total impacts from spoil haulage will be reduced during the existing permitted spoil haulage period due to the lower level of spoil haulage traffic during peak traffic hours. The proposed change will not increase the amount of material to be removed from the Bowen Hills worksite or the overall number of haulage vehicle movements.





Further, the proponent advised that since construction started on the project complaints regarding spoil haulage have related to trucks using local roads near the Bowen Hills site and Lamington Avenue, Ascot and no complaints had been received in relation to spoil haulage trucks using Kingsford Smith Drive. As the Schneider Road Bridge, Eagle Farm and the ramp from the Bowen Hills worksite to the Inner City Bypass are now open, spoil haulage vehicles will not use Lamington Avenue or local roads in Bowen Hills for the haulage of spoil for the Project.

The findings of a road traffic noise assessment were included in the information provided with the Request for evaluation of the proposed change. The assessment included undertaking measurements of current noise at locations adjacent to Kingsford Smith Drive as well as the development of a model to assess the noise impacts of the proposed change to spoil haulage hours to the area adjacent to Kingsford Smith Drive.

After reviewing the submissions received, the Proponent amended its request for evaluation. On 29 July 2008 the proponent provided to me a report responding to the submissions received. In the report's recommendation it states 'it is requested the Coordinator-General consider a change to the conditions for an extension to the allowable tunnel spoil haulage hours to include 6:30am Sunday to 12:30pm Sunday'. That is, after considering the submissions received the proponent amended its request to me, asking for the evaluation of a proposed extension to the permitted hours of spoil haulage to 12:30pm Sunday rather than the extension until 6:30am Monday as originally proposed (i.e. a six hour extension rather than the 24 hour extension originally proposed).

## 2.2 Airblast overpressure from construction blasting

The second request for project change relates to a request to amend the condition of the Coordinator-General's Report relating to blasting.

The current condition relating to construction blasting in Schedule 3 of the Coordinator-General's Report states:

### **7. Noise and vibration**

...

(j) *The impacts of transient blast noise and vibration must be assessed, monitored, and if necessary, mitigated and managed in accordance with the Environmental Protection Regulation 1998 and Brisbane City Council's Local Law 5. This includes limiting transient airblast over-pressure to 115 dBL in peak hold for 4 out of 5 blasts and must not exceed 120dB (linear) peak for any blast.*

The Proponent has requested that the condition be amended to state:

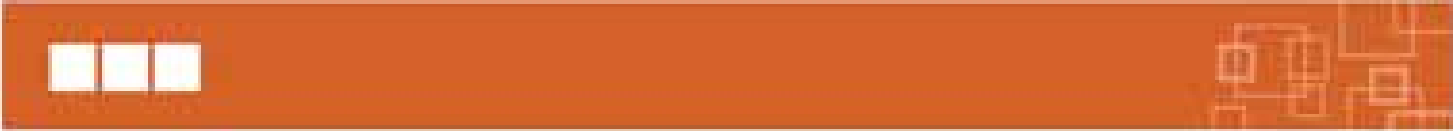
*The impacts of transient blast noise and vibration from short term construction activities must be assessed, monitored, and if necessary, mitigated and managed in accordance with the Environmental Protection Regulation 1998 and Brisbane City Council's Local Law 5. Where the airblast overpressure exceeds 120dB(L), all reasonable and practicable mitigation measures must be implemented to minimise airblast overpressure, such as reducing the maximum instantaneous explosive weight, additional overburden placed over blast area, use of blast mats, increased stemming and notification of sensitive receivers on the day of each blast. Where airblast overpressure is predicted to exceed 125dB(L), direct consultation with the potentially affected residents must also be undertaken. Airblast overpressure must not exceed 130dB(L) at any sensitive receiver.*

Blasting activities are occurring in the Shafston Avenue, Kangaroo Point area to facilitate the construction of two tunnel portals (one for traffic entering the tunnel and one for traffic exiting the tunnel) in this location. Blasting in this location commenced early in 2008 and has occurred once a day, on average, three times a week (Monday to Friday only) dependant on Project requirements and weather conditions. Blasting occurs at a regular time of around 12:30pm and a blast siren is sounded in advance of each blast. Members of the Project's community relations team are stationed within buildings adjacent to the blasting activities during the blast to minimise any potential 'fright' reactions.

Included in the material provided to support the request to change the blasting condition, a copy of a letter containing advice from the blasting engineers for the Project was provided. The letter set out the reason for the difficulty in achieving compliance with the current condition of the Coordinator-General's Report and the mitigation measures that were being undertaken to minimise the potential impacts of blasting activities at Shafston Avenue.

Additionally it was submitted by the Proponent that the current wording of the condition may be interpreted to be inconsistent with the referenced legislation.

Blasting activities for the Project are designed to comply with vibration limits at each of the potentially sensitive receivers, including commercial, residential, heritage locations and service sites (e.g. power, communications). Additionally and importantly, blast patterns are designed to eliminate the occurrence of any flyrock from the blasts. Controlling the occurrence of flyrock is achieved by, among other things, using low quantities of explosive, and covering the blast holes with rubber mats and overburden material. These measures also ensure minimum movement of the blasted material and therefore minimise the overpressure levels generated. However, because of the close proximity of receivers to the Shafston Avenue blasting activities (25 m to the nearest property), overpressure levels at the closest measurement location to the blast area have ranged up to 133dB(L) and are often over 120dB(L).



The condition contained in the Coordinator-General's report was based on a guideline used for the setting of human comfort criteria in approvals for activities such as mines and quarries. Such mining and quarrying activities are long term operations, distinct from the temporary nature of the Project's construction in the Shafston Avenue location. The Project's blast engineer has submitted that, in order to comply with the current condition, explosive quantities would have to be restricted to less than several hundred grams, and that this would be an ineffective quantity to break the highly competent rock in this area. Currently 0.8 to 1.0kg of explosive per blasthole is used.

The Proponent commissioned a review of the advice prepared by the Project's blast engineer and the findings of this review are included in the material provided to me in support of the request to change this condition.

## 2.3 Operational air quality monitoring locations

The third change the Proponent has proposed in its requests is to change the location of two of the project's four operational ambient air quality monitoring stations. The Coordinator-General's report requires that these monitoring stations are located within 500 m of the ventilation outlets. The Coordinator-General's report also nominates 'preferred locations' for the siting of the air quality monitoring stations. The changes proposed in this request are for one of the monitoring stations to be located further than 500m from the ventilation outlet and one station located at a site that is not the 'preferred location' (but is still within 500m of the ventilation outlet).

Schedule 3 condition 17(j) of the Coordinator-General's report states:

*Ongoing monitoring of ambient air quality must be conducted by the Contractor at a high level monitoring station and a ground level monitoring station, both of which are within 500 metres of each ventilation outlet\*. Monitoring parameters must be consistent with the air quality goals set out in Table 5.*

...

*\* For the northern ventilation outlet, the preferred option for the high-level monitoring site is on the Royal Brisbane Hospital building and the preferred option for the ground-level monitoring site is on Council-owned land in Windsor in the vicinity of City Farm and Downey Park. For the southern ventilation outlet, the preferred option for the high-level monitoring site is on the Brisbane Cricket Ground building adjacent to Main Street and the preferred option for the ground-level monitoring site is on the site of the DMR Traffic Control Centre in Hawthorne Street, Woolloongabba.*

Table 5 has not been reproduced in this report. It specifies the air pollutants that are required to be monitored and the air quality goals that are relevant to the assessment of each air pollutant. There are two ventilation outlets for the

Project—one at the northern end in Bowen Hills and one at the southern end in Woolloongabba.

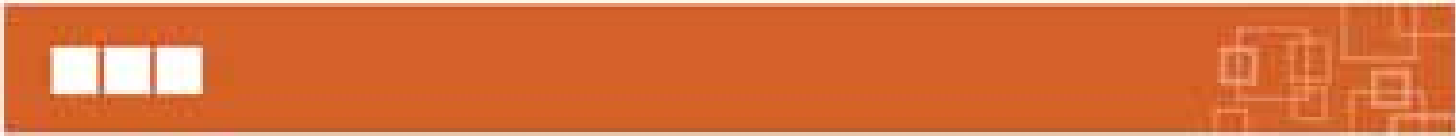
The Proponent has requested the removal of the requirement for the air monitoring stations to be within 500 m of the ventilation outlet. The reason for the requested change is that the Proponent has found it difficult to secure land for the location of all of the monitoring stations within 500 m of the ventilation outlets.

A technical report was supplied with the request for project change which outlines the proposed locations for the monitoring stations and provides details of each proposed location's characteristics and whether it complies with both the Coordinator-General's conditions and the relevant Australian Standards. A summary of the proposed locations for the siting of the monitoring locations, with reference to the requirements of the Coordinator-General's Report is as follows:

<b>Ambient air quality monitoring station description</b>	<b>Proposed location</b>	<b>Is location nominated as 'preferred' location in Coordinator-General's Report</b>	<b>Distance from ventilation outlet (metres)</b>
Southern ground level	DMR Traffic Control Centre, Hawthorne St, Woolloongabba	Y	560
Southern high level	Land Centre, Cnr Main and Vulture Sts, Woolloongabba	N	480
Northern ground level	BCC owned land, 51–55 Northey Street, Windsor	Y	770
Northern high level	Roof of Royal Brisbane Womens' Hospital Mental Health Building	Y	460

## 2.4 Height of southern ventilation outlet

The project change requested to be evaluated is to further increase the height of the ventilation outlet at Woolloongabba, from approximately 33 m above ground level to 43 m above ground level. A higher ventilation outlet is necessitated by recent changes to the Brisbane City Council Planning Scheme in the Woolloongabba area which allows buildings to be taller. The Draft Woolloongabba Centre Local Plan requires that all buildings proposed within 100 m of the ventilation outlet are impact assessable under the *Integrated Planning Act 1997*.



As the increase in the height of the outlet is not insignificant, the Proponent referred the project change to me for my evaluation, however there is no change required to a condition of the Coordinator-General's Report in relation to this proposed change. The relevant condition of the Coordinator General's report states:

*Ventilation outlets for the Project must be at least 30 metres in height above ground level, or no less than 10 metres higher than the highest building within 100 metres and existing at the commencement of construction, whichever is the highest.*

The Proponent has indicated that compliance with this condition will be achieved.

## 3. Public notification of the proposed change

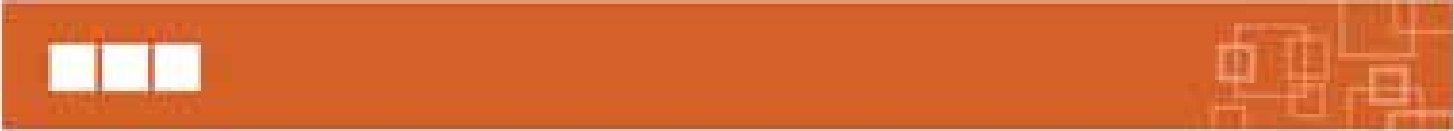
### 3.1 Details of public notification

By written notice to the proponent dated 22 May 2008, I required that the request for the proposed change to the condition relating to spoil haulage hours be publicly notified, in accordance with s.35G of the Act. I made this decision based on my belief that the amendment being proposed to allow spoil haulage from 6:30am Sunday to 6:30am Monday was a significant change to the Project with the potential to affect the broader community, but in particular the large number of residents living in proximity to Kingsford Smith Drive, the haulage route.

A public notice providing details of the request for the proposed change was published in the *Courier Mail* on 24 May 2008 and the local *Quest City North News* (circulated in the Bowen Hills, Ascot and Hamilton areas) on 29 May 2008. The public notice invited submissions to the Coordinator-General on the proposed change for a four week period until 23 June 2008 and advised how a copy of the request for the proposed change, including the report describing the effects of the proposed change on the Project, could be obtained.

An information session on the proposed change was hosted by BCC and LBB JV at the Hamilton Community Centre on 5 June 2008. The report requesting the proposed change was available from 2 June 2008 to 30 June 2008 at the Hamilton Library, Brisbane Central Business Centre and the Brisbane City Council, Hamilton Ward Office and was available online and a copy could be obtained from the Brisbane City Council.

I also sought comments on the proposed change from seven key advisory agencies during the submission period.



Nineteen submissions in total were received on the proposed change, including seven from the key advisory agencies, 10 from members of the public and one submission each from the State Member for Clayfield and the Brisbane City Councillor for the Hamilton Ward.

Two of the submissions raised the concern that the flyer that was provided to residents and businesses in the Kingsford Smith Drive area advertising the information session was not delivered in time to provide adequate notice for local residents to organise their attendance at the information session. Notification of the request for change was also made through a number of public notices that appeared in the state and local newspapers and notification to the established Community Liaison Groups. These notifications advised the community that a copy of the documentation making the request and the supporting technical report was available through the Department of Infrastructure and Planning's website, the Project's telephone information line and was available for inspection at the Hamilton Library, BCC's Hamilton Ward Office and the Brisbane Central Business Centre in Brisbane Square.

After considering the forms of communication of the proposed change undertaken by the proponent and contractors I find that the request for change was adequately notified.

In relation to the Proponent's request dated 4 August 2008 for evaluation of the three other proposed changes (relating to the conditions relating to blasting and the air quality monitoring station locations and an increase in height of the ventilation outlet) I decided that I would not require this request for evaluation of proposed changes to be publicly notified. This decision was based on my opinion that the proposed changes are not substantial modifications that would impact on the broader community, as was the case for the request to change to the spoil haulage hours. I considered the assessment of any impacts could be satisfactorily undertaken based on the information provided with the request, and the advice of the EPA in regards to the proposed siting of the air quality monitoring stations.

In relation to the proposed siting of the air quality monitoring station in Northey Street, Windsor, I required the Proponent to seek any views of directly affected persons (i.e. landholders and occupiers of all properties adjacent to the proposed location). On 21 August 2008 the proponent contacted the landholders and occupiers (by door knock and/or letter sent or placed in the letter box) of the 14 houses in the block surrounding the proposed site and notified them of the proposal for location of the monitoring station on the land at 51–55 Northey Street. The letter advised that landholders and occupiers were able to make a submission to the Proponent on the proposal for a two week period and that I would consider any submissions in my evaluation of the proposed change. The letter also provided the contact details for the Department of Infrastructure and Planning (DIP) Project Manager if landholders or residents wished to discuss the proposal further.

I required that the two written requests for evaluation of proposed changes to the Project were made available through the DIP website.

## 3.2 Submissions received

Nineteen submissions in total were received on the proposed change to spoil haulage hours, including seven from the key advisory agencies, 10 from members of the public and one submission each from the State Member for Clayfield and the Brisbane City Councillor for the Hamilton Ward.

The main issue raised by submitters was the perceived likely increase in noise on Sundays that the proposed change would bring. Several submitters raised concerns about current driver behaviour (such as speeding) along Kingsford Smith Drive, however, in most submissions raising this concern, haulage vehicles related to this Project were not distinguished from other heavy vehicles using Kingsford Smith Drive.

DIP did not receive any enquiries or submissions in relation to the proposed siting of the air quality monitoring station on council owned land at 51–55 Northey Street, Windsor. By letter dated 9 September 2008 the Proponent advised me that it did not receive any submissions during the consultation period. One enquiry was received by the Proponent requesting further information regarding the proposal, which was provided, however the person making the enquiry did not make a submission on the proposal.

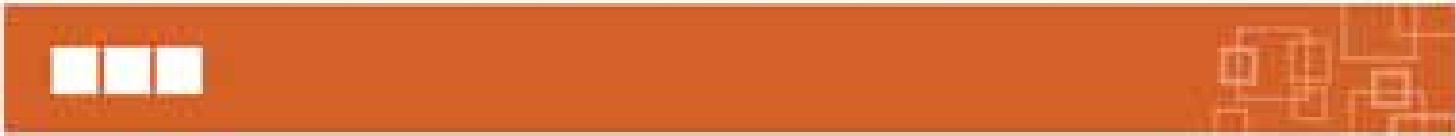
## 3.3 Response to submissions received

On 30 June 2008 the Department of Infrastructure and Planning wrote to the proponent requesting it provide a response to the submissions received. A copy of each of the submissions was forwarded to the proponent.

The Proponent prepared a response to the submissions that were received and provided this to me on 29 July 2008 as further information to support the request for a proposed change. A copy of this further information, including the proponent's response to how submissions have been addressed, is available at: [www.dip.qld.gov.au/eis](http://www.dip.qld.gov.au/eis)

# 4. Evaluation of environmental effects of the proposed change

Section 35H of the Act identifies the matters that the Coordinator-General must consider in evaluating the environmental effects of the change, its effect on the Project and any other related matters. It is not intended that the effects of the entire Project are re-evaluated, rather only the effects of the change relative to the Project that was the subject of evaluation in the Coordinator-General's Report of August 2005.



In accordance with section 35H of the Act, I have considered the following in evaluating the environmental effects of the proposed change and its effects on the Project:

- the nature of the proposed change and its effect on the Project;
- the Project, as evaluated in the Coordinator-General's Report (August 2005) and the Coordinator-General's Change Report (July 2006) for the Project;
- the environmental effects of the proposed change and its effects on the project;
- the written notices dated 6 May 2008 and 4 August 2008 from the proponent requesting that I assess the proposed changes to conditions of the Project, including the supporting information provided with the written notices;
- all properly made submissions about the proposed change to spoil haulage hours that were received in response to the public notification of the proposed change made on 24 May 2008;
- Brisbane City Council's report titled *Request for Change to Haulage Hours: Response to Submissions* provided to me on 29 July 2008 as further information to support the request for a proposed change; and
- advice received from the Environmental Protection Agency in relation to the proposed change to the ambient air quality monitoring station locations.

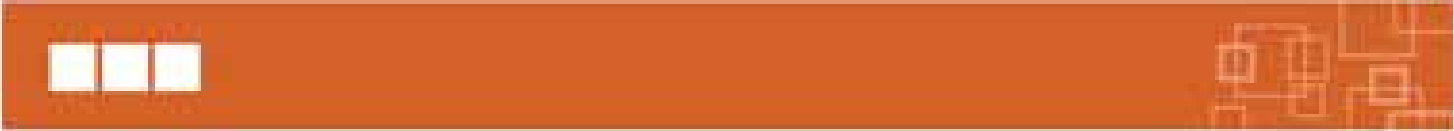
I have also considered whether any of the Coordinator-General's conditions and recommendations included in the Coordinator-General's Report should be amended in accordance with section 35I(2) in order to effectively manage the impacts of the proposed change.

## 4.1 Spoil haulage hours

After considering the submissions I received and the adverse impacts the requested change would have on a broad range of the community, but especially on the amenity of people living in proximity to Kingsford Smith Drive, I have decided not to allow any change to the permitted spoil haulage hours.

A number of the submissions from community members highlighted their view that currently Sundays were a period of respite from an otherwise constant noise burden of traffic on Kingsford Smith Drive, and that to allow spoil haulage from the Project on Sundays beyond the current 6:30am finish time would affect their quiet enjoyment of Sundays.





I consider that there has been a substantial increase in the number of projects being constructed in the Brisbane area in the past few years, and I have made my decision on this request in light of the cumulative impacts these projects have on the community.

My decision to not allow the extension of haulage hours will not result in an increase in haulage traffic on Kingsford Smith Drive during peak traffic periods as I note that condition 3(c)(ii) of Schedule 3 of the Coordinator-General's change report provides that the spoil haulage fleet is to avoid haulage during peak traffic periods and, where reasonable and practicable, peak traffic periods associated with major events at the Brisbane Cricket Ground and the RNA Showgrounds.

## 4.2 Airblast overpressure from construction blasting

I note that the effects of the elevated airblast overpressure levels at receivers from the blasting at Shafston Avenue are similar to the overpressure levels generated by naturally occurring events such as thunderstorms and winds, or those from aircraft movements. Fireworks and military aircraft generate much higher levels of overpressure.

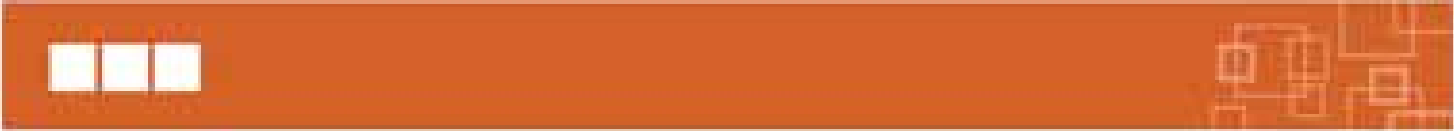
I am advised by the blasting engineer (and the Proponent's consultant, who concurs with the blast engineer's advice) who makes reference to a number of published sources in his advice, that structural damage becomes improbable when airblast overpressure is below approximately 140dB<sub>L</sub>.

The more likely impact of blasting activities is the potential for the noise from a blast to 'startle' people in nearby locations. I note that the blasting activities at Shafston Avenue are conducted with the following community notification protocols in place:

- prior notification of blasting activities to the surrounding area by letter box drop;
- doorknocking all properties within 50 m of the blast exclusion zone on the morning of each blast;
- regularity of blasting time close to 12:30 pm and the sounding of a blast siren prior to the blasts occurring; and
- stationing of Project team members in buildings close to the blasting activities during the blast.

I note the advice from the Proponent's consultant, who reviewed the Project's blast engineer's report on this matter, that, in relation to blasting activities and associated overpressure levels at Shafston Avenue, concluded:

- using an explosive quantity less than that currently being used would be ineffective;

- 
- the procedures associated with blast design undertaken by the engineer ensure that the minimum level of overpressure is generated by blasting activities;
  - the design employed to control flyrock would also add to the control of overpressure levels;
  - hearing or building structure damage from overpressure related issues is extremely unlikely; and
  - the most appropriate method of handling noise impact from airblast overpressure is the high and continued level of community awareness.

I agree with the Proponent's submission that the current wording of the condition may be interpreted to be inconsistent with the legislation that it refers to. The limit in the Coordinator-General's condition was erroneously based on a designation in the Environmental Protection Regulation 1998 that provides that noise from blasting that is below a stated measure is not 'unlawful environmental nuisance', as defined by the *Environmental Protection Act 1994*. The proposed change is to provide a clear and enforceable condition, that allows effective blasting activities to occur whilst ensuring amenity is protected through requirements to implement substantial mitigation measures.

I consider the proposed deviation from the guideline relied on in the original Coordinator-General's report condition is justified on the basis of the temporary nature (and therefore impacts) of the Project's construction in the Shafston Avenue area and the results of the overpressure level monitoring of the blasting conducted in this area to date on the basis of the extensive mitigation measures employed. Both of the blasting engineers consulted advised that, in relation to the Shafston Avenue blasting activities, the procedures being followed in the blast design minimise the levels of overpressure generated.

I note there are also conditions in the Coordinator-General's report that require predictive modelling of vibration impacts and the review of these modelling results as construction proceeds. Further, vibration sensitivity investigations are to be undertaken to identify where building condition surveys are to be undertaken and, where stated guide values for vibration are predicted to be exceeded mitigation and management options and advanced notification and other consultation measures are required to be adopted (Schedule 3, conditions 7 (c) – (k)).

I propose the following condition to replace condition 7(j) in the Coordinator-General's report. It is slightly different from the wording suggested by the Proponent in its Request for Project Change, as I have removed the threshold that was suggested (120dB(L)) over which reasonable and practicable measures must be taken. Therefore, I am requiring that all reasonable and practicable measures must be implemented for all blasting activities, not just for blasts expected to generate overpressure above 120dB(L) at the sensitive location.

### **Condition 7(j)**

*The impacts of transient blast noise and vibration from short term construction activities must be assessed, monitored, and if necessary, mitigated and managed in accordance with the Environmental Protection Regulation 1998 and Brisbane City Council's Local Law 5. Airblast overpressure must not exceed 130dB(L) at any sensitive place. Notwithstanding this, all reasonable and practicable mitigation measures must be implemented to minimise airblast overpressure, including, but not limited to:*

- *reducing the maximum instantaneous explosive weight as far as is practicable;*
- *placing additional overburden over blast area;*
- *use of blast mats over the blast area;*
- *increased stemming length of the blastholes; and*
- *notification of sensitive receivers on the day of each blast.*

*Notwithstanding any other condition of the Coordinator-General's Report, where airblast overpressure is predicted to exceed 125dB(L) at any sensitive place, direct consultation with the potentially affected residents must also be undertaken.*

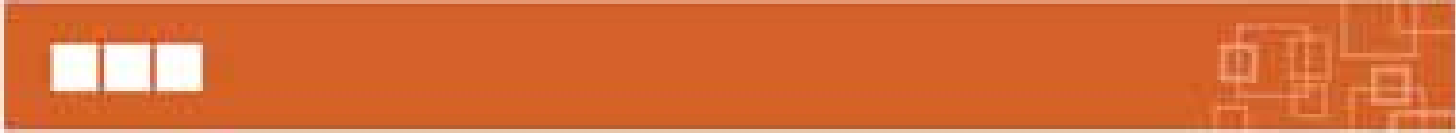
## 4.3 Operational air quality monitoring locations

It has been noted through discussions with technical air quality experts and upon review of the relevant Australian Standards, that the 500 m restriction in the existing condition does not have a scientific basis.

The original condition in the Coordinator-General's report is contradictory in that it specifies that the monitoring locations must be within 500 m of each ventilation outlet, yet provides 'preferred locations' that are outside this 500 m radius (for example, the DMR traffic control is approximately 560 m from the southern end ventilation outlet).

As noted above, the preferred locations for the monitoring stations were specified in a condition of the Coordinator-General's Report in addition to the requirement for the stations to be within 500 m of each ventilation outlet. Due to the inability to secure permission from the Brisbane Cricket Ground (BCG) to site the monitoring station at the BCG (which was the 'preferred location' nominated in the Coordinator-General's Report), the contractor has proposed that the high level monitoring station at the southern end of the project be located at the Land Centre, corner Main and Vulture Streets, Woolloongabba. This alternative site is within 500 m of the ventilation outlet.

In relation to the ground-level monitoring station at the northern end of the Project (Windsor), the original Coordinator-General's Report requirements are contradictory. The 'preferred location' nominated for the station is 'Council-owned land in Windsor in the vicinity of City Farm and Downey Park'. However City Farm and Downey Park are further than 500 m from the ventilation outlet and hence the siting of the station in the vicinity of these places would likely result in non-compliance with the 500 m requirement of the



condition. The request for change proposes to locate the ground-level monitoring station on council-owned land at 51–55 Northey Street, in the vicinity of City Farm and Downey Park. In this regard the proposed siting for this station is consistent with the description of the ‘preferred location’ but is beyond 500 m from the ventilation outlet (it is 770 m from the outlet).

I note the technical report advises that the results of dispersion modelling that was conducted for this project indicate that the alternative monitoring locations proposed at Northey Street, Windsor and the Land Centre, Woolloongabba, will provide equivalent results to the monitoring locations recommended in the Coordinator-General’s Report.

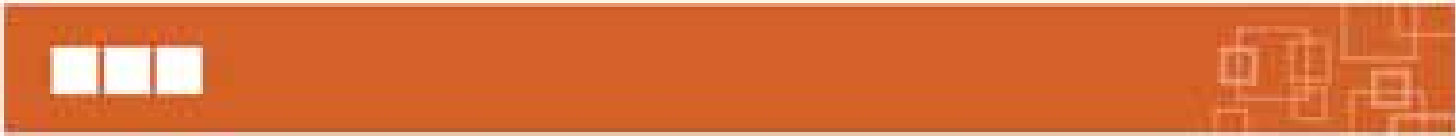
The location of the high-level monitoring station at the northern end remains unchanged and will be located on top of a building that is part of the Royal Brisbane Hospital (this is the nominated ‘preferred location’ and is 460 m from the ventilation outlet). The ground-level monitoring location at the southern end also remains the same as that originally proposed at the DMR Traffic Control Centre in Hawthorne Street, Woolloongabba. This site is nominated as the ‘preferred location’ in the Coordinator-General’s Report, however this site is located 560 m from the ventilation outlet.

On 4 March 2008, a site visit of the proposed ambient air quality monitoring locations was conducted by officers of DIP, BCC, the project contractor and its air quality environmental consultant, and an air quality expert from the Environmental Protection Agency (EPA). Each of the proposed monitoring station locations were visited and examined by the group, and the contractor’s air quality environmental consultant and the EPA air quality expert gave initial advice on the suitability of the locations in relation to the relevant Australian Standards.

It was noted by the technical experts present during the site visit that absolute compliance with all requirements of the Standards (e.g. no extraneous sources, 10 m from the nearest object, greater than 50 m from a road) would be difficult to achieve in such a highly urbanised area and that some compromise would need to be made.

EPA provided advice to DIP in relation to this element of the request for project change. In its advice, EPA stated that it had no concerns with the locations proposed for the siting of the air quality monitoring stations in the request for project change. It recommended that monitoring at the ambient monitoring locations should commence at least 12 months before the tunnel’s operation, in order to assist with identification of any impacts on air quality.

During discussions with the Proponent regarding the practicality of establishing the air quality monitoring stations, the Proponent advised that it would not physically be able to meet a requirement to commence monitoring at least 12 months prior to the operation of the Project. The reasons cited for this were that the leasing agreements for two sites still had to be finalised, relevant supporting infrastructure (power, communications etc) had not yet been installed and the monitoring equipment still needed to be procured,



installed and calibrated. The currently estimated earliest opening time of the project is December 2009.

The Proponent agrees that the establishment of baseline information at the air quality monitoring stations is highly desirable and has advised that it would endeavour to have the stations operating as soon as practicable. After considering the physical impossibilities of monitoring for 12 months prior to the Project opening, as expressed by the Proponent, I have decided to require that the monitoring stations are to commence monitoring as soon as practicable, but no later than six months prior to the Project's operation.

Based on the considerations outlined above, including the advice I received from EPA in relation to the proposed locations, I will amend the condition relating to siting requirements of the air quality monitoring stations. The following condition will replace the current condition 17(j):

**Condition 17(j)**

*Ongoing monitoring of ambient air quality must be conducted by the Contractor at a high level monitoring station and a ground level monitoring station for each ventilation outlet\*. Monitoring parameters must be consistent with the air quality goals set out in Table 5. The monitoring of ambient air quality must commence as soon as practicable, but no later than six months prior to the commencement of the tunnel's operation.*

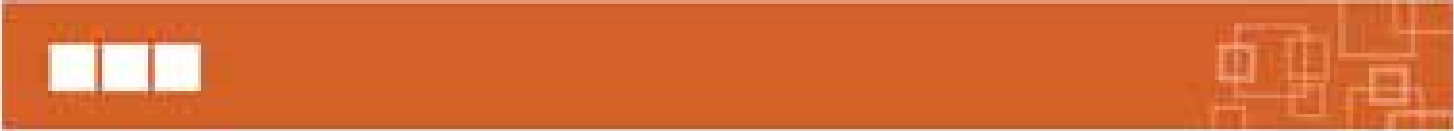
...

*\* For the northern ventilation outlet, the preferred location for the high-level monitoring station is on the Royal Brisbane Hospital building and the preferred location for the ground-level monitoring station is on Council-owned land in Windsor in the vicinity of City Farm and Downey Park. For the southern ventilation outlet, the preferred location for the high-level monitoring station is on the roof of the Land Centre building adjacent to Main Street and the preferred location for the ground-level monitoring station is on the site of the DMR Traffic Control Centre in Hawthorne Street, Woolloongabba.*

## 4.4 Height of southern ventilation outlet

The Proponent advised that the proposed increases in the height of the ventilation outlet will generally result in improvements to air quality due to the increased dispersion of emissions. I note that the proposal to increase the height of the outlet has been reported to the Community Liaison Group for the southern end of the Project and the Woolloongabba Business Association, as well as notification in the Woolloongabba planning newsletter. The Proponent advised that feedback from the consultation supported the change in height.

While the taller ventilation outlet may have some impact on visual amenity, it is likely that this effect will be temporary due to the separate planning decision to permit taller residential and commercial buildings in that area under the Draft Local Area Plan.



In light of these considerations I have no concerns with the proposed change to increase the height of the southern ventilation outlet, and that the project change is likely to have a beneficial impact due to the improved dispersal of emissions. The relevant condition of the Coordinator-General's Report will remain unchanged.

## 5. Conclusion

In relation to the request to extend the spoil haulage hours, I have decided, after considering the submissions received during the public consultation period, not to allow any change to the permitted spoil haulage hours. In making this decision I have considered the substantial increase in the number of projects being constructed in the Brisbane area in the past few years, and the cumulative impacts these projects have had on the community. By not allowing an extension to the spoil haulage hours, I hope that residents living in close proximity to the haulage route are able to continue to enjoy a day of respite from traffic noise that Sunday brings, as a number of submitters to me during this process have highlighted.

In relation to more insignificant changes proposed, I have evaluated the environmental effects of these changes and am satisfied they can proceed. I am satisfied an increase in height of the southern ventilation outlet is likely to have a beneficial impact on ambient air quality due to the improved dispersion that the higher outlet point will provide. In relation to the changes proposed to the conditions regarding airblast overpressure and the operational air quality monitoring stations, and in accordance with section 35I(2) of the Act, I have amended these conditions to provide clarification of the environmental outcome that the conditions seek to achieve. Appendix 1 to this report contains the amended conditions.

In accordance with section 35J of the SDPWO Act, a copy of this report will be provided to the proponent and the advisory agencies that participated in the change report process. This report will also be made publicly available on the Department of Infrastructure and Planning's website at: [www.dip.qld.gov.au/eis](http://www.dip.qld.gov.au/eis)

# Appendix 1: Amended conditions

The following conditions replace the relevant condition contained in the Coordinator-General's report dated 25 August 2005 for the Project.

## **Condition 7(j)**

The impacts of transient blast noise and vibration from short term construction activities must be assessed, monitored, and if necessary, mitigated and managed in accordance with the Environmental Protection Regulation 1998 and Brisbane City Council's Local Law 5. Airblast overpressure must not exceed 130dB(L) at any sensitive place. Notwithstanding this, all reasonable and practicable mitigation measures must be implemented to minimise airblast overpressure, including, but not limited to:

- reducing the maximum instantaneous explosive weight as far as is practicable;
- placing additional overburden over blast area;
- use of blast mats over the blast area;
- increased stemming length of the blastholes; and
- notification of sensitive receivers on the day of each blast.

Notwithstanding any other condition of the Coordinator-General's Report, where airblast overpressure is predicted to exceed 125dB(L) at any sensitive place, direct consultation with the potentially affected residents must also be undertaken.

## **Condition 17(j)**

Ongoing monitoring of ambient air quality must be conducted by the Contractor at a high level monitoring station and a ground level monitoring station for each ventilation outlet\*. Monitoring parameters must be consistent with the air quality goals set out in Table 5 and monitoring at the ambient air quality monitoring stations must commence as soon as practicable, but no later than six months prior to the commencement of the tunnel's operation.

...

\* For the northern ventilation outlet, the preferred location for the high-level monitoring station is on the Royal Brisbane Hospital building and the preferred location for the ground-level monitoring station is on Council-owned land in Windsor in the vicinity of City Farm and Downey Park. For the southern ventilation outlet, the preferred location for the high-level monitoring station is on the roof of the Land Centre building adjacent to Main Street and the preferred location for the ground-level monitoring station is on the site of the DMR Traffic Control Centre in Hawthorne Street, Woolloongabba.