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Received  
17 JAN 2011  
Scanning Room

Attention: Kylie Seretis

**PACIFIC HIGHWAY UPGRADE – BANORA POINT UPGRADE  
SUBMISSION OF BLAST MANAGEMENT PLAN AND PROPOSED MODIFICATION TO  
CONDITION OF APPROVAL 2.14**

Dear Kylie,

I refer to the Planning Approval 07-0059 issued on 26 February 2009 for the Pacific Highway Upgrade, Banora Point. The Roads and Traffic Authority (RTA), Abigroup Contractors, Seymour Whyte and SMEC have formed the Banora Point Upgrade Alliance to deliver the construction of the Banora Point upgrade. The upgrade extends over approximately 2.5 kilometres from the northern end of Bameys Point Bridge, through to the southern end of the Tweed Heads bypass in the Far North Coast region of NSW.

The RTA would like to submit the Blast Management Plan developed by the Alliance for approval as required under the approved Noise and Vibration Management Plan. This plan specifically details the proposed methods of blasting and the relevant blasting controls to minimise potential noise and vibration impacts caused by blasting. In addition the RTA is seeking a modification to the existing peak particle velocity frequency (mm/second) blasting criteria set out in the Ministers Condition of Approval (CoA) 2.14.

The project includes the excavation of approximately 35,000m<sup>3</sup> of rock in the main cutting at Sexton Hill. Due to the extremely hard nature of the basalt rock (200MPa) in the main cutting area, blasting has been determined as the most effective form of excavation.

The modification request seeks an increase in the blast criteria where private agreements to be entered into with property owners. The higher vibration limits will then apply to the agreeable receivers. If agreement is not obtained then the Alliance will maintain the existing approved limits.

The proposed increase to blast limits would significantly reduce the need for secondary breakage by rock hammering close to houses, minimise the duration of blasting impacts, cause less disruption to the local community and ensure there are less traffic closures to the Pacific Highway whilst blasting events occur. The modified criteria would enable the faster completion of the 35,000m<sup>3</sup> excavation which would also bring early noise reduction benefits to the community by having the southbound lane of the highway open early.

The proposed modification to CoA 2.14 is outlined below:

**Roads and Traffic Authority**

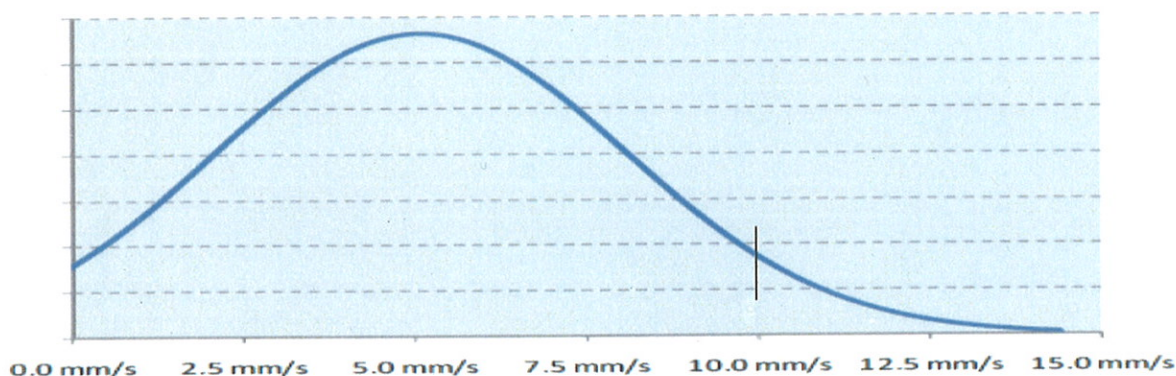
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The Proponent shall ensure that ground vibration generated by blasting associated with the project does not exceed the criteria specified in Table 2 when measured at the most affected residence or other sensitive receiver:

Table 2 – Peak Particle Velocity Criteria

	Peak Particle Velocity (mms <sup>-1</sup> )	Allowable Exceedance
Criterion 1 - If no agreement with affected receiver	10	Never. (Similar to existing conditions)
Criterion 2 - If a written agreement from the affected receiver is obtained.	10	5% of the total blasts over a 12 month period. <sup>1</sup>

<sup>1</sup> Note: 95% of blasts below 10mm/s ensures 99% of blasts are below 12mm/s and 100% are below 15mm/s. This is indicated in the figure below.



The specific benefits from this proposal to increase the blasting limits are:

- 24% less drilling which equates to 1.5 months less continuous drilling;
- 50% less rock breaking which equates to 2.3 months less continuous rock breaking;
- 20% less blasts which equates to 10 less instances to stop highway traffic and ensure local residents remain indoors;
- Potentially less complaints from the above issues; and
- Complete the Southbound works earlier and move the traffic onto the low noise pavements with permanent noise wall protection.

A broad range of stakeholders have been consulted in relation to the blasting program and the possibility of increasing blasting levels from 5mm/s to 10mm/s. Following extensive community consultation, no one in attendance indicated that they were uncomfortable with the proposal. Refer to the Modification Request for details of community consultation undertaken as part of this modification request. As part of the community consultation undertaken, the Alliance blasting consultant Dr John Heilig from Heilig & Partners Consulting Engineers also attended community information sessions to provide technical advice and answer any questions raised on the proposed blasting limits. In addition to the existing project stakeholders and

Alliance blasting consultant, the RTA arranged for an independent blasting expert, Terrock Pty Ltd, to review the proposed blasting limits and determine the potential effects on structures and residents within the vicinity of the project. A copy of the independent review of the blasting proposal is attached. Overall the independent review supported the Alliance documents and blasting proposal. The independent review provides a suggestion that a fact sheet could be developed to assist with community presentations and information to discuss the topics related to blasting. A project specific blasting information fact sheet has already been developed for the project, and is attached to this letter.

The proposed modification to the blasting criteria will provide a number of benefits to the project and community. The Blast Management Plan and proposed modification submission would ensure that practical and best management practices are included in the design and implementation of the blasting operations required for the project. The plan will ensure compliance with relevant licences and approvals, reduce adverse impacts to the local community and environment, and management noise, vibration and air blast associated with the blasting activities on the project.

Should you require further information, please contact the RTA's Senior Project Manager, Strategic Projects Mr Peter Borrelli on 02 6640 1022.

Yours faithfully



Robert (Bob) Higgins  
General Manager Pacific Highway

14/1/11