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Felicity Greenway
Director Infrastructure Projects
Department of Planning and Infrastructure
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Attention: Ms. Kylie Seretis

**HIGHWAY NO 10 – PACIFIC HIGHWAY. BALLINA AND BYRON SHIRE COUNCILS.
DESIGN AND CONSTRUCTION OF PACIFIC HIGHWAY UPGRADE
TINTENBAR TO EWINGSDALE, 13.63KM – 29.95KM NORTH OF BALLINA.**

**REQUEST FOR MODIFICATION TO MINISTERS CONDITIONS OF APPROVAL 2.14, 2.17 AND
2.18 – CONSTRUCTION AND BLASTING RESTRICTIONS AND LIMITS**

Dear Sir

I refer to the Planning Approval for the Pacific Highway Upgrade, Tintenbar to Ewingsdale of 29 January 2010 from the Minister for Planning received by the then Roads and Traffic Authority (RTA) and in particular Conditions of Approval (CoA) No's 2.14, 2.17 and 2.18 providing restrictions on allowable blasting working hours and limits to allowable blasting overpressure and vibration criteria.

Roads and Maritime Services (RMS) is seeking to modify the existing blasting work hours as well as the blast criteria, for blasting works associated with the St Helena Tunnel between project chainages 27800 and 28500.

The St Helena Tunnel works, which include the portal approach box cuts at either end of the tunnel, the sunken tunnel control centre and deluge tanks require the excavation of approximately 212,000m³ of rock. Due to the extremely hard nature of the basalt rock (200MPa), 'drill and blast' has been determined as the most effective form of excavation method. The modification request is to allow for an extension of the allowable hours in which blasting can occur to be consistent with the approved construction hours and to also allow for an increase in the airblast overpressure and vibration limits (peak particle velocity frequency (mm/second)) where private written agreement has been entered into with property owners / occupiers. The higher blasting criteria would only apply to those receivers where their prior written agreement has been obtained. If prior written agreement is not obtained or is withdrawn by the property owner / occupier then the existing approved criteria limits would apply.

The proposed increase to the allowable hours in which blasting can occur in conjunction with the proposed to the blasting criteria limits would significantly minimise the duration of blasting and associated construction impacts as well as the need for secondary breakage by rock hammering close to houses, cause less disruption to the local community and ensure there are less traffic closures on St Helena Road and rolling stoppages on the Pacific Highway whilst blasting events occur. The modified criteria would enable the faster completion of the 212,000m³ of rock excavation and hence the project with reduced associated construction impacts to the local community and which would also bring about benefits to the wider community.

The proposed modification is presented in detail for your review and approval in the enclosed document: "*Modification request for an extension to blasting hours, airblast overpressure and vibration limits, Pacific Highway Upgrade Tintenbar to Ewingsdale, January 2013*".

The proposed modification (shown in italics) to CoA's 2.14, 2.17 and 2.18 are outlined below:

MCoA 2.14 Blasting Hours

Blasting associated with the project shall only be undertaken during the following hours:

- a) 9:00 am to 5:00 pm, Monday to Fridays, inclusive;
- b) 9:00 am to 1:00 pm on Saturdays;
- c) at no time on Sundays or public holidays; and
- d) *7.00 am to 6.00 pm, Monday to Fridays, inclusive for the St Helena Hill tunnel works between Chainage 27800 and Chainage 28500.*

This condition does not apply in the event of a direction from police or other relevant authority for safety or emergency reasons to avoid loss of life, property loss and/or to prevent environmental harm.

MCoA 2.17 Airblast Overpressure

The proponent shall ensure that airblast overpressure generated by blasting associated with the project does not exceed the criteria specified in *Tables 1a and 1b* when measured at the most affected residence or other sensitive receiver.

Table 1a - Airblast Overpressure Criteria

Airblast Overpressure (dB(Lin Peak))	Allowable Exceedance
115	5% of total number of blasts over a 12 month period
120	Never

Table 1b - Airblast Overpressure Criteria, inclusive for the St Helena Hill tunnel works between Chainage 27800 and Chainage 28500 where consent has been granted by the owner / occupier that the subject limits may apply.

Airblast Overpressure (dB(Lin Peak))	Allowable Exceedance
125	5% of total number of blasts over a 12 month period
130	Never

MCoA 2.18 Ground Vibration

The proponent shall ensure that ground vibration generated by blasting associated with the project does not exceed the criteria specified in Tables 2a and 2b when measured at the most affected residence or other sensitive receiver.

Table 2a - Peak Particle Velocity Criteria

Peak Particle Velocity Criteria (mms ⁻¹)	Allowable Exceedance
5	5% of total number of blasts over a 12 month period
10	Never

Table 2b - Peak Particle Velocity Criteria, inclusive for the St Helena Hill tunnel works between Chainage 27800 and Chainage 28500 where consent has been granted by the owner / occupier that the subject limits may apply.

Peak Particle Velocity Criteria (mms ⁻¹)	Allowable Exceedance
15	5% of total number of blasts over a 12 month period
20	Never

The specific benefits from this proposal are: -

- 40% reduction in the total number of blasts;
- 15% less drilling reducing the duration of noise and vibration that residents would be exposed to;
- 32 day reduction in the construction schedule for the tunnel excavation works reducing the total tunnel excavation time from an estimated 210 days to 178 days;
- 8 day reduction in the construction schedule for the portal approach box cuts at either end of the tunnel from an estimated 45 days to 37 days;
- 3 weeks reduction in the construction schedule for the excavation of the sunken tunnel control centre and deluge tanks which corresponds to an estimated 25% reduction in the original program of 12 weeks;
- 80% reduction in the volume of rock requiring breakage by hydraulic hammers at the sunken tunnel control centre and deluge tanks which corresponds to 20 fewer days requiring hydraulic hammering;
- 50% fewer rolling stoppages of the Pacific Highway reducing traffic delays; and
- 50% few stoppages of St Helena Road reducing traffic stoppages and delays.

During the development of the above mentioned proposed modification, RMS and Boulderstone have undertaken an extensive program of consultation with all project stakeholders including directly affected residents, the broader community and agencies. This included one on one resident meetings, a street meeting and presentation with all St Helena Residents, a specific community information session presentation and environmental review group meeting presentations. As part of the community consultation undertaken, specialist blasting consultant to the project Dr John Heilig from Heilig & Partners Consulting Engineers also attended the street meeting and community information sessions to provide technical advice and to answer any questions raised on the proposed blasting limit modifications. In addition a range of

correspondence and fact sheets for blasting were also distributed. Community understanding and support for the proposed modifications is considered to be strong, with all residents directly affected by the proposed increase in blasting limits indicating so by signing the private agreement form. Agency responses to the proposed modification have also been sought. Comments were received from the Environment Protection Authority (EPA) and responses to these comments have also been agreed with EPA. Please refer to the enclosed Modification Request for further details of the consultation undertaken as part of this modification request.

Whilst detailed information regarding the proposed modification and tunnel blasting / construction methodology is included in the enclosed document, including detailed presentation material, I would also like to take this opportunity to offer you or your staff the opportunity for a briefing regarding the proposal, or alternatively a site visit to the project should this be considered of benefit / assistance to you in your assessment of this matter.

Construction of the St Helena tunnel is on the critical path for the project, and subject to your satisfactory review of the proposed modifications, it would be appreciated if you could arrange for the necessary approval documentation to be issued as soon as possible so that the benefits of the proposed modification can be delivered for all parties, and as well, the milestones set by the NSW State and Federal governments can be delivered as soon as possible.

Should you require any further information regarding this or any other project matter, please contact RMS's Senior Project Manager, Strategic Projects Mr Peter Borrelli on 0407 254 363 in the first instance.

Yours faithfully


Robert (Bob) Higgins
General Manager, Pacific Highway

28/1/13

Encl:

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