PACIFIC HIGHWAY UPGRADE
OXLEY HIGHWAY TO KEMPSEY
NOISE & VIBRATION WORKING PAPER

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PREPARED FOR

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1 INTRODUCTION

1.1 Background

It is proposed to upgrade the Pacific Highway between the Oxley Highway and Kempsey. The Proposal entails the provision of dual carriageways between the Oxley Highway and Pacific Highway interchange at the southern end, and Stumpy Creek, south of Kempsey, at the northern end (see Figure 1-1). The Proposal extends over a distance of approximately 37 kilometres.

This noise and vibration impact assessment has been prepared in response to the NSW Department of Planning Director-General's environmental assessment requirements for the Proposal, which were issued on 28 August 2007, and amended on 14 November 2008. In relation to noise and vibration the Director-General's environmental assessment requirements state that the assessment must include:

- Construction noise and vibration including construction traffic noise and blasting impacts.
- Operational road traffic noise impacts including consideration of local meteorological conditions (as relevant) and any additional reflective noise impacts from proposed noise mitigation barriers.
- The assessment(s) must take into account the following guidelines as relevant: Environmental Criteria for Road Traffic Noise (EPA 1999), Environmental Noise Management Manual (RTA 2001), Environmental Noise Control Manual (EPA 1994), Assessing Vibration: A Technical Guideline (DEC 2006); and Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration (ANZECC 1990).

A range of corridor and route options have previously been evaluated and a preferred route option was selected for concept design. This report has been prepared to form part of the Environmental Assessment for the Proposal (*Oxley Highway to Kempsey Upgrading the Pacific Highway Environmental Assessment* (GHD 2010)), which is based on the developed concept design. It details the extent of potential impacts associated with the traffic noise at nearby receivers, including management measures where relevant.

Potential noise and vibration impacts have been assessed in accordance with the following publications:

- *Environmental Criteria for Road Traffic Noise* (ECRTN) (Environmental Protection Agency (EPA 1999) (now part of NSW Department of Environment, Climate Change and Water (DECCW)).
- *Environmental Noise Control Manual* (Environmental Protection Agency (EPA 1994) (now part of NSW Department of Environment, Climate Change and Water (DECCW).
- *Environmental Noise Management Manual* (ENMM) (NSW Roads and Traffic Authority (RTA) 2001).
- *Interim Construction Noise Guideline* (Department of Environment and Climate Change (DECC 2009) (now part of NSW Department of Environment, Climate Change and Water (DECCW)).
- *Assessing Vibration, A Technical Guideline* (Department of Environment and Conservation (DEC 2006) (now part of NSW Department of Environment, Climate Change and Water (DECCW)).

- *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration* (Australian and New Zealand Environment and Conservation Council (ANZECC) 1990).
- *NSW Industrial Noise Policy* (INP) (Environmental Protection Agency (EPA 2000) (now part of NSW Department of Environment, Climate Change and Water (DECCW)).

The approach to the assessment incorporated the following main stages:

- Establish noise catchment areas, identify noise sensitive receivers and measure existing noise levels (Chapter 2).
- Determine operational noise traffic criteria for the Proposal (Chapter 3).
- Detailed traffic noise modelling methodology (Chapter 4).
- Validation of traffic noise model for existing conditions (Chapter 5).
- Calculation and assessment of noise for future scenarios without mitigation (Chapter 6).
- Review of traffic noise management options (Chapter 6).
- Assessment of maximum noise levels (Chapter 7).
- Assessment of construction noise and vibration (Chapter 8).
- Assessment of blasting vibration and overpressure (Chapter 9).

1.2 Proposal description

The Proposal involves the upgrade of the Pacific Highway between the Oxley Highway and Stumpy Creek (see Figure 1-1).

The Proposal commences approximately 700 metres north of the Oxley Highway interchange, tying in with the existing dual carriageways to the south, and continues northwards to tie in at Stumpy Creek with the dual carriageways of the proposed Kempsey to Eungai Pacific Highway upgrade. At the northern end of the Proposal, the eastern service road would extend approximately 320 metres further to the north of Stumpy Creek to tie in with the proposed Kempsey to Eungai upgrade.

The majority of the Proposal would require duplication of the existing highway. Two main sections of the Proposal would deviate from the alignment of the existing highway. These are in the vicinity of the Hastings River and the Wilson River. The existing highway would be retained wherever possible for use as a service road or local road connection.

The total Proposal length is approximately 37 kilometres (along the new proposed highway). The Proposal would involve upgrading the existing highway to a four-lane divided dual carriageway (capable of being upgraded to six lanes), with controlled access. The Proposal would include sections of duplication, sections of upgrade of the existing highway as well as sections of new highway alignment, and involves two major river crossings.

For the purposes of this assessment the Proposal can be further broken down into the following sections (Figures 2-1a and 2-1b):

- Southern upgrade section.

  From Oxley Highway to Fernbank Creek, the Proposal entails the duplication of the existing highway to a dual carriageway.

- Hastings River deviation section.

  From Fernbank Creek to the proposed Blackmans Point Road interchange, the Proposal entails the deviation of the alignment into a new road corridor for approximately 3.5 kilometres. The deviation would involve the construction of new bridges over the Hastings River. The existing section of the Pacific Highway would become a local service road.

- Telegraph Point bypass section.

  The Telegraph Point bypass section would extend from north of the proposed Blackmans Point Road interchange near Bill Hill Road, to the Haydons Wharf Road half interchange, north of Telegraph Point. The deviation would involve the construction of new bridges over the Wilson River and North Coast Railway. The existing section of the Pacific Highway would become a local service road.

- Northern upgrade section.

  From Haydons Wharf Road to Stumpy Creek, the northern upgrade section would consist of a duplication of the existing highway to a dual carriageway and would generally follow the existing highway alignment. A slight deviation would occur over a 4 kilometre stretch at the northern end of the Proposal. This deviation section would only be separated from the existing alignment by approximately 120 metres.

Figure 1-1 Locality plan