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Low Noise Diamond Grinding Pacific Highway Trial

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ABSTRACT

Roads and Maritime Services follow detailed procedures providing consistency across NSW for the assessment of traffic noise impacts. As a first priority Roads and Maritime seeks to reduce road noise at the source through careful road design and mitigation measures such as lower noise pavements, noise walls and earth mounds. Where target noise levels cannot be achieved through at-source measures, the next step may be to implement at-house noise treatments.

Following the opening of the Nambucca Heads to Urunga Pacific Highway upgrade, over 40 complaints were received from the community stating the now operational highway was noisier than they expected. While post operational noise monitoring demonstrated the levels were as predicted, and as such the already implemented noise mitigations of at-house noise treatments and sections of stone mastic asphalt pavement surfaces provided the project with compliance to conditions of approval.

It was considered though that by undertaking a trial of low noise diamond grinding, this could provide the community some further benefits, along with providing more data to Roads and Maritime Services to determine where low noise diamond grinding could be implemented in to future projects. Three trial locations including a two pass grind, a three pass grind and a conventional grind, along with a stone mastic asphalt (SMA) surface area, were noise tested pre and post grind.

The results have confirmed the benefits realised by low noise diamond grinding, demonstrating the two pass grind method is comparable with SMA10 and the appropriate correction factor can be applied when modelling pavements into new road design. Roads and Maritime Services are now in the process of reviewing guidelines to ensure appropriate terminology is included. Ongoing assessment will continue to best manage waste disposal options and a monitoring regime will be implemented to collect data on pavement performance and future noise mitigation benefits for the community of the ground surfacing.