Supplementary Submission No 16a

REDUCING TRAUMA ON LOCAL ROADS IN NSW

Name: Name suppressed

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Supplementary submission.

The first is that I would like to suggest some changes to the consultation processes when safety improvements are proposed, whether by state or council. In the current process – and in no place was this better demonstrated than the Oxley Highway – consultation is perfunctory, simply telling people what changes will be made and making them no matter how strongly they are opposed. Yet this process has clearly failed, with the lack of safety improvement over the decade. I would like to suggest that the community be given real, indeed primary weight rather than experts whose theories have produced such little success. The definition of stakeholder needs to be changed as well. Why should the police, whose theoretical job is merely to enforce the law, have such a large say over what speed limits are? It is a strong conflict of interest for enforcers to be making the law as well. The inclusion of the RMS as a stakeholder in its own self-conducted process should also raise eyebrows. In any case all these organisations are taxpayer funded. It is the public at large, not the institutions their taxes fund, who are the real stakeholders, as these decisions affect their everyday lives. It is time for a more community-oriented approach.

The second is that I would like to expand on the effectiveness of barrier underrun protection for motorcyclists. It is well known that kinetic energy varies with the square of 'speed', an argument often used for the reduction of speed limits. However, it would be accurate to say velocity, a vector quantity. And underrun protection produces a far greater reduction in kinetic energy than reducing speed limits due to altering the vector of the impact. Taking a 200 kg mass for a typical sports motorcycle and an 80 kg rider ($E_k = 0.5*280*v^2$) a square on impact with a tree or barrier post produces a kinetic energy at 100 km/h (27.78 ms^{-1}) of 108 kJ. If the speed is reduced to 80 km/h, this reduces (22.22 ms^{-1}) this reduces to 69 kJ. This is a significant reduction but it pales into comparison to the effect of a flat surface presented at an angle to the crashed rider. The standard angle for testing underrun protection is 30° from parallel (no contact) and is highly representative on 'lowside' sliding crashes that sports motorcycles, which sustain high lean angles, are vulnerable to. A 100 km/h impact at 30° produces a velocity of around 50 km/h into the barrier (13.89 ms^{-1}), and a kinetic energy of 27 kJ. The remainder is dissipated through sliding friction along the road. Indeed, under the Vision Zero philosophy that a safe accident is acceptable underrun protection is more than twice as effective as speed limit reduction, something which is borne out statistically. Furthermore, something such as underrun protection makes other protective technology more effective. Motorcycle armour is gradually improving, and the new technology of airbag vets shows promise, but both have low effectiveness in high speed impacts, where impact is close to perpendicular, and where impacts are concentrated as they might be by a post. By presenting a broad flat surface at a shallow angle to an out of control rider measures such as underrun protection allows armour and airbags to be much more effective by staying within their capabilities. Anything but the most drastic speed limit reductions cannot do this. Future motorcycle safety improvements will be technology and infrastructure rather than 'speed' driven. It is vital that this is not spuriously attributed to speed reductions as has occurred with past safety programs. Motorcyclists tend to crash at certain corners, often for the same reasons. Local and state governments should find and protect such locations rather than going for a band-aid solution.