

## **Submission on the Review of the Vehicle Dimensions and Mass (VDAM) Rule**

### **1 Introduction**

- 1.1 TRAFINZ (The New Zealand Traffic Institute Inc) represents a wide grouping of NZ local authorities, covering the majority of the New Zealand population. Its membership includes regional councils, the major metropolitan cities and smaller provincial authorities as well as private sector and non-local government members.
- 1.2 TRAFINZ recognises that the aim of the Review is to enable improved transport productivity through ensuring a better fit than currently exists between vehicles and the roading network. TRAFINZ agrees that a comprehensive review of the Rule is needed. The VDAM Rule needs to support a range of competing elements such as economic growth, improved public road safety and the delivery of goods and services to the public set in the context of national transport policy. Changes to the Rule will impact on more than just the road freight industry. Consideration needs to be given to impacts on local (non-State Highway) roads and impacts on other modes, especially Rail. The Review Discussion Paper and associated reports do recognise the existence of these wider impacts. However it is apparent that little data on the scale of impacts is available at this time. Work is underway by NZTA and other Road Controlling Authorities (Councils) on topics such as extra pavement costs and overhead clearances and reports are expected to be available later in the year.
- 1.3 The analysis in the documents available for this consultation process is incomplete. The true net annual national benefits for the suggested changes to the Rule may be substantially lower than the draft figures estimated for the Ministry by Castilla.

## 2 Impacts on local roads

- 2.1 The introduction of the proposed new rules is not without risk and there is the need to understand fully the potential infrastructure consequences for local road networks.
- 2.2 The total cost implications of heavier and larger dimensioned vehicles on local roads have not been fully accounted for in the evaluation framework. A case in point is that lower vehicle speeds and tighter turning space will have higher costs associated with kerb and pavement maintenance and renewals on local roads than on the State Highway network. Heavier axle loading for urban buses can be expected to cause accelerated damage to some pavements. An increase in the cost associated with the maintenance of the local transport network for heavier vehicle use will as a consequence need alignment with Councils' Asset Management Plans and Long Term Plans and detailed consideration of the funding streams for this work.
- 2.3 TRAFINZ agrees with the submissions of the Road Controlling Authorities Forum (NZ) Inc Special Interest Group on Low Volume Roads that insufficient consideration has been given to the costs inherent in the proposed increases to HGV mass and axle loadings. The Group includes roading engineers working in local government and is highly respected for their practical and research based knowledge of the performance of road pavements in NZ conditions. TRAFINZ notes and supports their concerns about the likely impact on the life of bridges on the local road network and the possible severe loading impact of super single tyres.
- 2.4 Additional Road User Charges (RUC) will be generated by the changes proposed and the charging regime will be better targeted to the roading infrastructure costs of the various vehicle types and loading arrangements.
- 2.5 However there is no special mechanism available to allocate these additional funds to local Councils and NZTA (State Highway) to cover accelerated damage to their roads. For Councils these RUC fund transfers need to include the local share of necessary repair and pavement improvements, which otherwise would be an unexpected charge on their property rating base. TRAFINZ expects that the data currently being collected from three representative areas of the NZ road network should assist in setting up such a special funding arrangement. This needs further detailed discussion with Local Government representatives.
- 2.6 TRAFINZ also suggests that funding for local roads subject to "rapid failure" from heavy bus and goods vehicle use be provided for, say, the next 5 years on the same basis as special funding for road damage due to natural disaster.

- 2.7 It is noted in the Review that the Transport Agency (NZTA) has a programme to extend the 50MAX and HPMV network including upgrading some bridges. Discussion will need to occur with the NZTA to confirm where funding will be required to preserve or improve Council controlled local roading networks to be used as part of the proposals and make these specific roads fit-for-purpose.
- 2.8 In relation to the proposals for a change in vehicle height limits, a specific and potentially significant constraint in the Greater Christchurch network is the Lyttelton Tunnel (SH74). The proposed change to the vehicle height rule could well mean that more vehicles may be diverted to less appropriate alternative local road routes because they cannot use the existing tunnel. With the current impediment to alternative routes to the Port of Lyttelton more acute since the Christchurch earthquakes and a projected significant increase in freight quantities to the Port of Lyttelton from across the South Island, this potential infrastructure impediment, cited in the Review document, does need very careful consideration. TRAFINZ supports the Christchurch City Council's submissions in relation to this matter.
- 2.9 A critical issue Councils will also need to consider is how increases to axle mass and gross mass limits will be appropriately managed on their networks. It is currently difficult to protect transport structures such as bridges and culverts from damage by vehicles exceeding sign posted weight or speed limits traversing these structures illegally. Access restrictions may be required beyond those already in place for over-dimension vehicles, particularly on bridges.
- 2.10 TRAFINZ recommends that the transport industry should take full responsibility by equipping their fleets with GPS and other technology to provide them with full oversight of their operations. We understand that such equipment exists now but is only available in part of the fleet. The Discussion Document notes that operators compliance with present axle limits is not good with nearly one in five (18%) of truck and trailer units being overloaded. This indicates that operators either do not know the true situation or they are ignoring it. The equipment needs to record axle loadings and routes taken. There should be a requirement placed on the industry to update the heavy goods vehicle fleet accordingly and for the information collected to be stored and made available to NZ Police and RCAs for their use in responding to complaints received.

- 2.11 Even when information is available from GPS data or otherwise enforcement of the Rule is a difficult matter. NZ Police cannot issue infringements under Section 16A of the Land Transport Act (restriction of heavy traffic on roads) and have to take every breach of a restriction to court which is time consuming. The provisions in the Local Government Act for Heavy Vehicle restrictions allow police to issue infringements for a breach of a bylaw, but the infringement fee is minimal and would need to be significantly increased if it is to be effective. There is a separate need for the Land Transport Act to be updated to allow the police the power to issue infringements for breach of 16A.
- 2.12 A further barrier to effective enforcement is that there is no clarity on the road as to whether a High Performance Motor Vehicle is working under the provisions of a permit or not at the time it is observed travelling along local roads or using weight sensitive bridges. We understand that such vehicles display an H plate at all times and there is no indication to show when they are operating under an overweight or over length permit, or perhaps under a 50MAX permit. Police officers thus cannot be certain whether an offence has occurred without stopping suspect vehicles and inspecting their paperwork.

### 3 Impacts on Road Safety

- 3.1 As summarised in the Discussion Document the NZ heavy vehicle fleet is old (average age 17.5 years) and is relatively unsafe. Its fatal crash rate is 3 times that of light vehicles nationally on a kilometre travelled basis. In some regions heavy vehicle crashes are involved in up to 50% of all fatal and serious injury crashes. Eighteen percent of all NZ road fatalities involve heavy vehicles.
- 3.2 The Discussion Document recognises that a move to larger heavy goods vehicles with greater mass may result in crashes being more severe and that wider vehicles could also cause problems for lighter vehicles, pedestrians and cyclists. However it is concluded that the proposals will have a net positive effect by accelerating the introduction of new vehicles with intelligent technology that will improve safety and efficiency and lower emission levels.
- 3.3 TRAFINZ agrees that for any specific freight task newer imported vehicles will be inherently safer than those they replace. However this does not necessarily mean that the annual total of heavy vehicle road fatalities will reduce while the road freight demand in total continues to increase; 58% predicted over the next 30 years. This is because the vehicles that are replaced can be expected to remain in the fleet, perhaps with different owners, and only some of the oldest little used vehicles will be scrapped. The present straight lining of heavy vehicle crash rates and the continuing high average age of the fleet support this view.
- 3.4 A 2014 Monash University report on the benefits of crash avoidance technologies referenced in the Discussion Document concluded that fitting Autonomous Emergency Braking Systems to all heavy vehicles would have the greatest effect on fatal NZ heavy vehicle crashes.<sup>1</sup>; an estimated annual reduction of 25% with the saving of 14 lives. Significant reductions were shown for other safety related systems that could be implemented now by the freight industry.
- 3.5 Rather than wait for the slow trickle down of modern technology through the fleet TRAFINZ advocates that other actions should be taken in parallel with the VDAM Review so that real improvements in heavy vehicle fleet safety and fatal accident reductions can be achieved at an early date. Such actions would also lead to a more rapid modernisation of the fleet, with higher gains in efficiency and productivity available at an early date.

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<sup>1</sup> Newstead (2014), Potential Safety Benefits of Emerging Crash Avoidance Technologies in Australasian Heavy Vehicles, at <http://www.monash.edu.au/miri/research/reports/muarc324.pdf>

- 3.6 The Cabinet Paper included with the Discussion Document refers to a safety issue specific to pedestrians and cyclists; the fitting of under run systems on trucks. The Paper advises that this matter will be addressed in the Government's response to the Cycling Safety Panel's 2014 report. Such systems are mandatory in most OECD countries and TRAFINZ supports such action be taken in NZ.
- 3.7 The Safer Journeys Action Plan 2013-2015 under the heading 'Actions- Accelerate the exit of unsafe vehicles' suggest "One possible action is to introduce a safety levy when vehicle ownership is changed, or as part of vehicle licensing, to be used to incentivise vehicle scrappage" Such measures would also have a beneficial effect on NZ's Greenhouse gas emissions, as Heavy Goods Vehicles are estimated in the Discussion Document as contributing 21.5% of the transport component of New Zealand's CO2 emissions.
- 3.8 TRAFINZ suggests that such mandatory and other safety and emissions initiatives should form a package of Government proposals as part of the VDAM review actions.

## **4 Specific Proposals for VDAM Revision**

TRAFINZ comments below on the various proposals for Axle Mass, Gross Mass and vehicle Width and Height. We understand that many Councils will be submitting on the other matters set out in the Document with information on their specific concerns.

### **4.1 Axle Mass and Gross Mass**

Proposal 1: Maintain current axle mass and gross mass limits.

Proposal 2: Revise current Schedule 2 limits.

Proposal 3: Increase general access gross mass limit from 44,000kg to 45,000kg.

Proposal 4: Remove the permitting requirement from the operation of 50MAX.

Proposal 5: Increase axle mass limits for specific categories of vehicles.

Proposal 6: Amend tyre size categories for axle mass.

Proposal 7: Reduce weighing tolerance from 1,500kg to 500kg.

**TRAFINZ supports Proposals 2, 3, and 7** on the basis that they rectify anomalies in law and standardise industry practice. We comment as follows.

Proposal 2 – SUPPORTED

As noted in the Review, Proposal 2 provides for a more accurate matching of axle mass limits to the impact that vehicles have on the roading infrastructure.

Proposal 3 – SUPPORTED

As noted in the Review, the proposal includes a safeguard for pavement impact that the maximum 45,000kg has to be carried over 8 axles. A 7-axle vehicle combination weighing 44,000kg causes more wear and tear to roads than an 8-axle vehicle combination weighing 45,000kg. Proposal 3 should only be progressed in conjunction with Proposal 7.

Proposal 4 – NOT SUPPORTED.

The possibility of a permit being withdrawn is a valuable sanction should an operator offend.

In future the current 2 year maximum permit life could be extended, depending on operator performance and the introduction and use of better monitoring tools such as GPS.

**TRAFINZ strongly advocates a requirement for heavy goods vehicles to be GPS monitored at all times** by operators with that data being made available to NZ Police and local government on request.

Proposal 5 – NOT SUPPORTED

As noted in the Review, roading infrastructure is designed to bear a limited number of loadings above the standard Rule limits; repeated loadings can reduce the service life of the infrastructure. There is no information provided in the Review that outlines the additional cost in reduced pavement life. Further information is required to assist in making a final decision. Hence this Proposal cannot be supported.

Proposal 6 – NOT SUPPORTED.

The Review states that wider 'mega' tyres (or super –single tyres) have the benefit of distributing mass over a larger footprint, therefore reducing pavement impact and wear and creating productivity benefits for some operators. However, the key change is to increase the max axle load for a single wheel from 7.2T to 8.2T. This is critical to pavement design. Austroads Guide to Pavement Technology Part 2: Pavement Structural Design sets the load assumption in New Zealand of: Standard Axle loading consists of a dual-wheeled single axle, applying a load of 80kN.

The change enables a single-wheeled single axle to apply a load of 82kN.

There is no information provided in the Review as to how the change affects pavement stress. TRAFINZ notes that the submission by the RCA Forum states that "Allowing units

with super single tyres on the drive or trailer axles is a very poor option for pavement sustainability as the increase in pavement damage can exceed 300%” . They provide supporting research results in their Figures 3 and 4. It is apparent that current pavements have not been designed to accommodate the proposed loading. Further information on the additional pavement costs is required to assist in making a final decision. Hence this Proposal cannot be supported.

#### Proposal 7 – SUPPORTED

As noted in the Review, the proposal reflects the level of accuracy of modern weighing techniques. Without adoption of this reduced tolerance proposal, the move to 45,000kg would equate to a 46,500kg tolerated limit. This is considered well beyond acceptable general access gross mass limits, and therefore it is expected that Proposal 3 will only be progressed in conjunction with this proposal.

Further to the proposal considerations, TRAFINZ believes that the proposals will allow safer and more energy efficient vehicles to be introduced to the freight fleet. However, there is limited evidence available that a sufficiently full economic evaluation of the cost implication of these proposals has been completed. To be confident that the proposals will bring the projected benefits, further information is required that robustly assesses the economic consequences of the proposals on local roads and on local government budgets.

## 4.2 Width

Option 1: Status Quo – retain current maximum width of 2.50m.

Option 2: Increase maximum width to 2.55m (including securing devices).

Option 3: Increase maximum width to 2.55m (plus 50mm for securing devices).

Option 4: Increase maximum width to 2.60m (plus 50mm for securing devices).

**TRAFINZ supports Option 2** on the basis that it allows the industry to obtain safer and more efficient rigid sided freight vehicles and **Submits that side under run protection be a requirement.**

As noted in the Review, securing devices (e.g. ropes, lashings, j-hook assemblies) that previously brought the total width of a vehicle to 2.55m would be included in the 2.55m maximum width. There would be no additional allowance for securing devices.

TRAFINZ believe the proposals will improve productivity for the industry whilst not compromising and potentially enhancing road safety. It would allow bus operators greater access to a range of bus models from international markets.

#### 4.3 Height

Option 1: Status Quo – maintain current height limit of 4.25m, plus 25mm for load restraining devices.

Option 2: Increase the general access height limit to 4.275m, inclusive of load restraining devices.

Option 3: Increase the general access height limit to 4.30m, inclusive of load restraining devices.

**TRAFINZ supports Option 2** on the basis that it standardises the vehicle fleet without any new impact on overhead structures.

TRAFINZ does not support Option 3 despite the productivity gains it would provide, due to a concern about the lack of information on the impact of this height limit increase on mast arms and other local government overhead structures as well as possible impacts on local roads from diverted traffic to the Port of Lyttleton.

#### 4.4 Car Transporter Gross Mass

Option 1: Status Quo – maintain current mass limit for pro-forma car transporters at 36,000kg.

Option 2: Increase the gross combination mass limit for pro-forma car transporters to 38,000kg.

**TRAFINZ supports Option 2** on the basis that it rectifies an anomaly in the current rule.

As noted in the Review, the 38,000kg limit was assessed as an appropriate limit using current performance based standards, with the pro-forma vehicle performance considered satisfactory in all respects. It enables the longer pro-forma car transporters to carry the same number of cars as standard designs. This could improve safety as longer vehicles are generally safer to operate than standard vehicles.

## 5 Summary

- 5.1 TRAFINZ supports the Review and its major aim to enable improved transport productivity. However changes to the Rule will impact widely and there is a risk that the impacts on local roads have been underestimated. The net national benefits of the Rule changes proposed may be substantially lower than estimated.
- 5.2 While extra Road User Charges revenue is expected as a consequence of the Rule changes there is no special mechanism to allocate necessary additional funds to Councils to cover unexpected extra costs. While this is not a Rules matter directly TRAFINZ submits that such provisions should be an integral part of any decisions that are taken to amend the Rule.
- 5.3 Enforcement of the axle weight limits in the Rule is difficult currently due to poor information being available on loads and routes taken. Many heavy goods vehicles are not complying with the present Rule. Councils are particularly affected by operators causing accelerated damage to bridges and other structures with posted weight limits and communities are concerned about very large vehicles using minor roads. Legal redress is difficult to obtain and time consuming.
- 5.4 TRAFINZ submits that operators take full responsibility for the problems by equipping their heavy vehicles with GPS and axle load sensing equipment and that this requirement should be placed on them as one of the outcomes of the Review.
- 5.5 TRAFINZ also submits that the Land Transport Act be amended to allow Police to issue infringement notices under S16A .
- 5.6 The NZ heavy vehicle fleet is old and relatively unsafe with a crash rate 3 time that of light goods vehicles. TRAFINZ submits that actions be taken to incentivise operators to adopt the latest safety and emissions technology at an early date, rather than relying on gradual change through larger modern vehicles being purchased as a response to the proposed Rule change.
- 5.7 TRAFINZ supports several of the proposals for VDAM revision and has commented on these in the text above.

TRAFINZ appreciates the opportunity to make these submissions on behalf of our communities. We welcome involvement in this important area of transport policy development, and are pleased to comment further as requested.

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