

Land Transport Rule Vehicle Dimensions and Mass 2016

Overview to the Rule, July 2016

*This overview accompanies, and sets in context, the public consultation (yellow) draft of **Land Transport Rule: Vehicle Dimensions and Mass 2016**.*

The proposed Rule will replace Land Transport Rule: Vehicle Dimensions and Mass 2002.

The majority of provisions within the proposed Rule are consistent with previous requirements, but the revised Rule is designed to be easier to read and understand.

Some components of the draft Rule, relating to width, height, mass and the management of the largest loads, propose changes to the previous limits and processes.

*If you wish to comment on this draft Rule, please see the page headed 'Making a submission'. The deadline for submissions is **Friday 5pm, 12 August 2016**.*

Consultation on proposed Rule changes

The purpose of this publication is to consult on a proposed Land Transport Rule: Vehicle Dimensions and Mass 2016 (the 2016 VDAM Rule). It is intended to replace the current Rule, which dates from 2002.

Consultation on the proposed changes is being carried out to ensure that legislation is sound and robust and that the Rules development process takes account of the views of, and the impact on, people affected by proposed Rule changes.

This publication, for your comment, has two parts:

- (a) an overview, which sets proposed Rule changes in context; and
- (b) the consultation (yellow) draft of Land Transport Rule: Vehicle Dimensions and Mass 2016 – also referred to as VDAM 2016 or the draft Rule.

Please read the overview carefully and consider the effects that the proposed Rule and regulation changes would have on you or your organisation.

To assist in setting the proposed changes in context, the NZ Transport Agency will include, on its consultation web page, documents that show the links between the current (2002) and proposed (2016) VDAM Rules, and a summary of key changes indexed against sections.

Making a submission

If you wish to make a submission on the proposed changes please read the information below.

Before making your submission

Please read the information provided in the overview.

Please include the following information in your submission

- the title of this document
- your name, and title if applicable
- your organisation's name if applicable
- your address – postal, and email if applicable

Sending your submission

If possible, send your submission by using the online submission form or you can send it by email to rules@nzta.govt.nz and, if you wish, follow this up with a signed copy. The online submission form is available at: nzta.govt.nz/vdam-2016

If posting your submission, address it to

VDAM Rule 2016
Rules Team
NZ Transport Agency
Private Bag 6995
WELLINGTON 6141

Please note the deadline for submissions

The deadline for submissions is **5pm on Friday 12 August 2016**.

Your submission is public information

Please note that the NZ Transport Agency (the Transport Agency) may publish any information that you submit, and may identify you as the submitter should it publish your submission or provide it to a third party.

Please indicate clearly, therefore, if your comments are commercially sensitive, or if, for some other reason, they should not be disclosed, or the reason why you should not be identified as the submitter.

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Summary of proposed Rule and Regulation changes

Land Transport Rule: Vehicle Dimensions and Mass 2002 (the 2002 VDAM Rule) sets a series of limits on the size, configuration and mass for heavy vehicles operating on New Zealand's roads. It does this to balance the safety of road users, productivity and the appropriate use of the network.

The 2002 Rule has been frequently amended, and some of its provisions no longer are well matched to current requirements. It has also been criticised as difficult to interpret.

The proposed Rule (Land Transport Rule: Vehicle Dimensions and Mass 2016) is designed to deliver productivity improvements, greater regulatory efficiency and reduced compliance costs without compromising the road transport system and road user safety outcomes. The goals of the main changes are outlined below.

- Allow operators to carry more freight and passengers per trip, by better utilising the existing capabilities of heavy vehicles (within manufacturers' specifications), and capacity of the road network.
- Encourage fleet renewal by allowing industry to access a wider range of suppliers of vehicles built to international dimensions and mass limits with modern safety, emissions, and performance technologies.
- Provide for more effective planning in the movement of the largest (Category 4) overdimension loads.
- Allow local authorities greater flexibility in permitting, and clarify the categories of loads under permit.
- Decrease non-compliant operators' levels of accepted overloading by reducing weighing tolerance thresholds.

Productivity assessments, referred to in the Regulatory Impact Statement (RIS) for this review, have highlighted benefits arising from greater width, more flexible permits, and other proposals included in the revised Rule. The review of the VDAM system considered options for increases in dimensions and mass limits, larger than those proposed, but found that the existing road network's capacity precludes this.

While the draft Rule has been re-written to assist clarity, the majority of provisions continue to reflect current requirements. Key changes are highlighted as proposals in this document.

This Overview also provides information about changes to Regulations that will be needed to support the proposed Rule.

Why are Rule and Regulation changes being proposed?

Background

The VDAM Rule is an essential component in the way New Zealand balances the need to improve safety, productivity and the appropriate use of the road network.

The VDAM Rule impacts on safety by providing dimension limits for standard vehicles and requirements to manage over-dimension loads. The VDAM Rule also governs some of the performance requirements for heavy vehicles, such as their ability to “track”¹ appropriately through curves.

Productivity is linked to the mass and dimension limits set by the VDAM Rule – as those limits increase, individual vehicles can carry more. For almost all heavy vehicles, the mass limits set by the VDAM Rule are lower than their design capacity.

Use of the road network is constrained by the high variability of road surfaces and bridge capacities, both on state highways and local roads. The VDAM Rule reflects this variability by distinguishing general access limits (available to all vehicles, unless a route or bridge is specifically restricted) from permits that allow higher mass on stronger routes.

A review of VDAM was established by government to analyse options. Changes to the Rule in 2014 and 2015 established a better balance between vehicles operating with and without permits for higher mass, but these were small steps that anticipated further updates. The primary changes incorporated in the draft Rule were canvassed with industry and other stakeholders before being put as options in a public discussion document released in December 2015.

Maintaining Safety

Deaths and serious injuries in crashes where a heavy vehicle (most commonly a truck) is involved have been trending downwards in recent years, despite a significant increase in the total kilometres travelled by these vehicles.

The proposals to increase width and height are incremental and constrained (see page 21) within the limits currently available to some, but not all, heavy vehicles. These increases would not produce noticeably bigger trucks or buses nor would they result in a higher crash risk.

The 2016 Rule changes, when seen as a total package, are expected to contribute to improved safety outcomes because operators are able to:

- carry more freight and passengers per vehicle, requiring fewer trips, reducing other road users’ exposure to heavy vehicles and
- move to more modern vehicles with improved safety specifications.

¹ Combination vehicles (especially) need to be configured to stay within their lane and minimise tail swing.

The draft Rule also provides for the use of devices to warn drivers of close proximity hazards (such as the presence of a cyclist in a vehicle “blind spot”).

Operators would still need to comply with current safety performance standards e.g. braking, load security, and rollover. The rollover threshold is set in this Rule, while other Rules and codes set other requirements. These are consistent with international approaches.

The Rule also provides for more effective planning in the safe movement of the largest overdimension loads.

Economic contribution

The road network serves New Zealand’s social and commercial needs in moving people and freight around the country. Each year, around 50,000kg per person is transported around New Zealand and there are 153 million bus passengers.

160,000 registered heavy vehicles travel a total of 4.2 billion kilometres. The purchase of Road User Charges (RUC), which reflects estimated road wear for a vehicle type, ensures that they contribute appropriately to road maintenance.

The transport task is estimated to increase by 58 percent over the next 30 years; the demand for transport services generally increases faster than growth in GDP.

The bus and coach sector is also a significant contributor to tourism and public transport, with visitor arrivals expected to grow 4 percent a year to 2021.

Any productivity gains in road transport therefore have an effect across the entire economy.

The proposed increase in standard width has a significant effect in some specialised sectors (e.g. the transport of refrigerated goods, where the ability to lay out standard pallets in a more efficient pattern gives increases in available load).

For most transport operators, however, the benefits are likely to come from a wider range of heavy vehicles being available for purchase. Our current standard width (2.5m) is not the standard in most countries that manufacture heavy vehicles – 2.55m is the standard for the EU, for example. This wider availability should provide better entry pricing, and encourage the uptake of heavy vehicles featuring new technologies which improve safety or reduce emissions.

Further benefits are anticipated from the mass increases made available, either through adjustments to the general access mass limits, or the wider availability of permits for specialist vehicles (such as buses). More detailed discussion is provided in the comments related to specific proposals.

Managing the Road Network

The key constraint to allowing heavier loads on our road network is the high variability of bridges and road surfaces. This is reflected in a variety of mechanisms for controlling access, such as “posting” weak bridges (setting mass limits for the vehicles that may use them). The primary means established by the VDAM Rule for controlling access to weaker routes is the distinction between “general access” and the use of permits which allow greater axle or gross mass – but only where the routes are suitable.

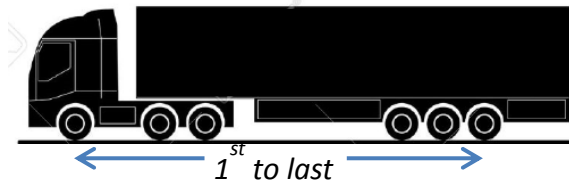
The text below sets out some of the factors which determine how heavy vehicles can be when using our road network.

Bridges

Bridges in New Zealand are, in many places, significantly older than the roadways they carry. Modern bridges have more than sufficient capacity for the current legal loads. Many older structures (and there are still pre 1920 bridges in service) do not.

Bridge limits are usually controlled by the deck spanning between beams and the beams. Beam, or longitudinal, strength is generally the factor that governs the bridge load limit.

Design loads over many years have been based on a uniform load spread over the length of the bridge to replicate the number of vehicles that could be using the bridge at the same time. This uniform loading readily converts to an allowable load for a vehicle on the basis of the first to last axle spacing.



The engineering principle is that if a given gross mass is distributed over greater length, it reduces the effect on bridge spans.

The design of roads

The design of a road starts with estimating the anticipated use over its “life” – usually set around 25 years for highways (with a 5% allowance for risk of failure), or a longer period for local roads. The key component is the projected use by heavy vehicles since they will create almost all of the wear.

That calculation is based on how many “ESA” (equivalent standard axles) are expected to use the route during the design period. ESA is in turn based on the reference load (8.2 tonnes on a twin-tired axle), and each axle on a heavy vehicle or combination counts as “one pass”. Estimates of use on a highway therefore amount to millions of passes during its design life.

Roads are constructed on the basis of the design use; this is why highways (with much higher anticipated use by heavy vehicles) have stronger foundations and seal. By comparison, a local road may see very few heavy vehicles in any year, and is therefore constructed to a less demanding (and expensive) standard.

Vehicle factors

The VDAM Rule has to recognise the wide variety of vehicle layouts in service.

The reference load for pavements is set for an axle with twin standard (truck) tyres



Some heavy vehicles replace two standard tyres with a single wider tyre (a “single large” or “mega” tyre).



The VDAM Rule recognises that a wider tyre distributes load better than a single standard tyre.

Wide specialist tyres (such as those fitted to agricultural vehicles or road construction machinery) are also catered for under the VDAM Rule through the issue of overweight permits. The effect is calculated as part of the VAI (vehicle axle index).



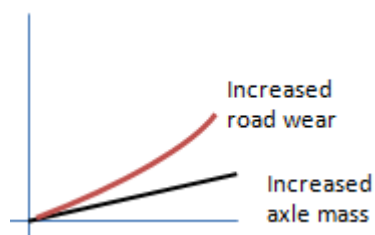
Some vehicles have axle sets (two or more axles placed close together) that are load-sharing (for example, the twin axle/single tag axle arrangement seen on many urban buses).

The very heaviest loads are moved on vehicles or trailers that are especially designed to spread loads across the road surface.

This is why the VDAM Rule has such complex tables for allowable axle loads.

Road wear

American research in the late 1950s found that doubling an axle load could cause up to 16 times the pavement damage. This mathematical relationship between increase in load and increase in wear is described as the “Fourth Power” law or rule.



The **effect** of this rule is that road wear increases at a higher rate than the actual increase in axle loadings above the reference weight.

In the graph, the start point is standard axle loading (8.2 tonnes) and standard wear. E.g., full HPMV allows axle loadings 107% above the standard limits.

Using the 4th power rule, the higher axle loading (8.8 tonnes) is calculated as causing just over 130% additional wear.

This is partly reduced because the load is being carried on fewer vehicles (less passes). Higher axle and gross mass is reflected in higher RUC rates.

The Transport Agency has been testing wear rates at Canterbury Accelerated Pavement Testing Indoor Facility (CAPTIF) in a series of experiments from the early 2000's. These found that the 4th power relationship:

- overstates the increased wear caused to strong pavements (parallel studies in Australia on similar road structures found equivalent results) but
- understates the relationship between increased loads and greater road wear for local roads with weaker pavements.

Damage

The most likely reasons for any route to undergo rapid failure are:

- a significant change in use
- water intrusion or
- natural disasters

As explained above, roads are built to carry an estimated traffic load. The number of heavy vehicles predicted to be using the route during its useful life determines the design factors – and the road form. If a road designed for very limited use by heavy vehicles is suddenly exposed to intense use, then road surfaces can show extreme wear or even the breaking up of the road surface within a few weeks of the increase in traffic flow. Logging operations, which tend to create demand on key routes when a new forest block is harvested, sometimes create this effect. Rapid wear could also occur if, for example, a large industrial plant (with a resulting growth in heavy traffic) is introduced alongside a route.

Water damage can occur where the surface layer or seal is cracked, and water can penetrate through it into the lower sub-courses. Ground water, which tends to undermine the base course, can also cause significant damage.

Natural disasters, while rare, can impact on roads. The Christchurch earthquakes, for example, broke up some road surfaces, while damage to service lines also contributed. Heavy rain or flooding can also cause slips or washouts, and in extreme cases almost total loss of small sections of the route.

Overweight permits

The revised Rule therefore retains the existing distinction between general access (no permit required) and the need to obtain a permit (which usually sets route restraints) so that weaker bridges and roads are not overloaded.

The Rule also keeps the split between divisible loads - where the total mass can be controlled - and indivisible loads that can't be easily varied.

Examples of **divisible** loads are liquids (e.g. milk and petrol tankers) where the volume determines the total mass, or aggregate (gravel) where material can be added until a desired weight is achieved. The Rule already allows permits for these loads for high productivity motor vehicles (HPMV) to exceed the gross mass allowed under general access limits.

The Rule proposes additions to the types of specialist vehicles carrying divisible loads that can apply for overweight permits. These vehicles would include buses, concrete trucks and specialist fertiliser spreaders. They combine high tare weight with uneven distribution of load, as a function of their design requirements or equipment.

Examples of **indivisible** loads are large pieces of machinery (e.g. a large tracked bulldozer) or a loaded shipping container. The draft Rule has added additional load types that are regarded as indivisible. It also clarifies that some vehicles, as well as loads, can be issued such permits (for example, a forage harvester). This is consistent with current practice.

Overdimension Permits

Overdimension vehicles and loads are managed by specific provisions in the current Rule, and most of these will continue with only minor changes. All overdimension loads have some restrictions on times and available routes, and requirements for marking the load (hazard warning panels).

As the vehicle size increases, these constraints increase. The proposed Rule sets piloting requirements (the use of lead and following vehicles to advise other drivers of the over-dimension load) that are linked to the width and other dimensions – larger loads require more pilots.

Overdimension vehicles are divided into categories – 1 is the smallest. Category 3 and 4 vehicles must obtain a permit from the Transport Agency prior to any travel.

The proposed Rule retains these divisions, but aligns the permit process to that already in place for overweight permit applications. It also sets out obligations for those responsible for moving the load, and suggests two critical conditions: operating a load which has dimensions in excess of those stated on a permit, and failure to meet piloting requirements.

The Rule also allows for a new process – where an operator is required to identify parts of the route where additional control measures are required. This may, in turn, lead to discussion of mitigation measures with the Transport Agency. This process would only apply to the very largest loads (Category 4 and above).

The expectation, however, is that this process should only apply in a very few instances. An example of where it might be required would be a load of over 5 metres in width which had to cross the Rakaia Bridge on State Highway 1 South of Christchurch. This structure is narrow and well over 1 km in length.

The creation of a new Rule

In proposing the 2016 VDAM Rule, we have taken the opportunity to re-write it rather than provide a complex set of additional amendments. The current (2002) Rule has had more than a dozen updates, and some aspects of the Rule are well out of date.

For example, when the Transport Agency was formed in 2008, it became the road controlling authority (RCA) for state highways; but the Rule still reads as if it had none of those responsibilities.

The key features of the new Rule, other than the way in which it is organised into sections, are designed to improve clarity. Where possible, the new Rule reduces the number of unexplained cross-references that are prevalent in the current Rule.

The current Rule assumes, rather than explains, several of the key concepts. The new proposed Rule explicitly includes these. For example, the concept of general access is now clearly distinguished from the concept of heavier vehicles needing to obtain permits before being operated on a road. Another example is the way in which design limits can constrain the maximum permitted mass for a heavy vehicle. These have previously been understood as applying because they are requirements in other Rules – but the VDAM Rule now directly addresses this linkage.

Another feature of the new Rule is the inclusion of explanatory statements, which outline the key components of a section. For example, the purpose of establishing SRT (stability) requirements is added before the detailed provisions which apply. These explanations do not have a direct legislative effect; they are designed to help the reader understand how and why the function is regulated.

The new proposed Rule re-arranges the complex tables which set the detailed mass and dimension requirements. The current Rule has some tables with duplicate labels; the new Rule has unique labels for each primary and subordinate table. Tables are also split into clear topic areas to make it easier to find a particular value.

Finally, the new Rule removes some out-of-date provisions (such as the transition for SRT, at 3.3(2) in the 2002 Rule).

The proposed Rule includes an explicit transition provision. This states that any vehicle which was legally compliant with the current Rule remains legal to operate after the new Rule comes into effect. This is designed to ensure that any minor changes (e.g. to detailed dimension requirements) do not catch out vehicles that are currently compliant.

Further adjustments to the Rule, before it is signed into law, are anticipated. The Transport Agency will be working to improve internal references (without altering duties and responsibilities) and the Rule may also be amended to take account of submissions.

Matters not included in the draft Rule

Performance Based Standards (PBS)

Transport operators and heavy vehicle manufacturers will be aware that TERNZ (Transport Research NZ) was tasked by the Transport Agency to develop a draft set of performance standards, which are intended to provide agreed methods of determining whether vehicles are able to comply and enter service (other than by meeting the specific requirements of the VDAM Rule, such as the detailed dimension settings in Table 1).

However, that set has not yet completed the necessary peer and industry review.

The draft Rule therefore makes no references to the PBS; the intention is that any proposal to refer to the PBS in the Rule (such as the setting of future pro-forma vehicle types) would be the subject of a future amendment, where operators would be able to view the agreed PBS suite alongside the proposed changes.

Permit Manual

The Rule does not include any direct reference to the Transport Agency's Permit Manual, which includes quite detailed process requirements.

For example, the Rule does not specify the options for bridge crossing because permit forms generally specify the restrictions that apply to individual structures. Typical instructions (crawl central) are included in the Manual, not the Rule.

What are we seeking your feedback on?

The Transport Agency welcomes your comments on the proposed Rule and Regulation changes set out in this overview and in the draft Rule.

The proposals which follow focus on changes within the proposed Rule that alter limits, set different responsibilities, or envisage new processes.

When you provide your feedback, it would be helpful if you would consider and comment on the following:

- What impact would the proposals have, and on whom? The Transport Agency is particularly interested in your comments on any costs (to you or to your organisation) of implementing the proposals.
- Would any groups or individuals, in particular, be disadvantaged by the proposals, and how?
- Would any groups or individuals, in particular, benefit from the proposals, and how?
- Are there any implementation or compliance issues that would need to be considered?

Wherever possible, when making your comments please provide examples to illustrate your point.

Associated Documents Available

The consultation page for this draft Rule

www.nzta.govt.nz/vdam-2016

Includes two documents designed to assist readers who have some experience in applying the provisions of the current (2002) VDAM Rule. These are:

A translation map (where do I find the provisions of the previous Rule within the new proposed Rule?). For example, Static Roll Threshold used to be a separate section (3); it is now a component (2.5, Stability performance) of a wider section on vehicle requirements.

Key changes list (what is “new”, what is different, listed by their appearance in the draft 2016 Rule). For example, the Transport Agency responsibilities (section 6.5) are much simpler than the current ones, because all Road Controlling Authority (RCA) functions are performed by the Agency in its role as highways manager and do not need to be repeated.

This listing does not include drafting changes which have no direct effect on how the Rule will apply to responsibilities and processes.

What changes are proposed?

Proposals are arranged under the following headings:

- **Mass** (axle and gross loading limits, both for general access and on permit)
- **Dimension** (width and height)
- **Permitting** (including allowing for bulk permits)
- **Over-dimension** (mainly focussed on management of the largest loads)
- **Other issues** (including new definitions)

Mass: General Access

Gross mass increases for combination vehicles

PROPOSAL 1

1A. Increase the gross mass limit for 7-axle combinations with a minimum wheelbase of 16.8m from 44,000kg to 45,000kg

1B. Increase the gross mass limit for 8-axle combinations with a minimum wheelbase of 17.4m from 44,000kg to 46,000kg

See: Schedule 1 Table 3B and 3.1 in the draft Rule

The proposed Rule regulates two types of mass; axle mass and gross mass.² In general terms, changes in axle mass affect pavement wear; the more axles a vehicle has the less damage a given load will do to the pavement. Axle mass limits vary depending on the size and/or number of tyres per axle and whether the axles are spaced or are in sets.

The Rule provides for mass limits in a number of categories. General access limits require no permit. Access to the higher mass limits provided in the Rule requires a permit from the relevant road controlling authority.

The gross mass proposals provide for small increases to the maximum gross mass for 7 axle vehicles with a wheelbase of at least 16.8m to 45,000kg and increasing the maximum gross mass for 8 axle vehicles with a wheelbase of at least 17.4m to 46,000kg. Some combination vehicles may have to fit longer drawbars to allow access to the higher mass. These increases will be phased in: until 1 November 2017, these limits apply only to HPMV routes as published by the Transport Agency. Note that this includes any 50MAX routes, since these vehicles are also HPMV.

² Axle mass refers to the maximum weight carried by an axle or group of axles. Gross mass refers to the total weight of the vehicle plus its load.

The purpose of the phased approach is to allow a survey of bridges to ensure that any weaker structures are identified and if necessary have restrictions posted.

Changes to regulations³, which reduce the weighing tolerance limit for these vehicles, from 1,500kg to 500kg (steer axles and gross mass and 1000 kg (axle sets) are designed to encourage loading within the legal limits. See Proposal 4.

The changes:

- provide additional payload benefits of 1,000kg (7 axle) and 2,000kg (8 axle) for operators who comply with the mass limits and
- reduce the payload disadvantage that the more pavement-friendly 8-axle combinations currently have, compared to 7-axle combinations. This is due to the lower tare weight of 7-axle combinations.

The longer axle spacing requirements (the current 44 tonne limit requires an axle base of 16 metres) would mitigate bridge risks. This change is expected to result in only minor increases in pavement wear. The estimated cost increase is around \$2M per annum, with most on highways.

General access axle limits

PROPOSAL 2

Rationalise general access axle mass limits for many individual vehicles

See Schedule 1 Table 2

The existing axle mass tables contain a number of distinctions between axle types and the maximum mass allowed by the Rule. In some instances, these do not reflect real-life effects (such as increased pavement wear) so the draft Rule proposes minor adjustments (all are increases). For example, adjustments include:

	Was	Proposed
Single standard tyres in a twin-steer axle set, or in a tandem axle set with a twin or single large-tyred axle	5,400	5,500
Single large-tyred in a twin-steer axle or quad axle set (<i>used to be separate lines</i>)	5,400	5,500

The detailed axle mass limits are set out in Table 2 of the Rule.

Indivisible Loads

PROPOSAL 3

Provide an indicative list of indivisible loads

See 4.1

³ Land Transport Offences and Penalties Regulations 1999

The Rule provides a general definition of ‘indivisible load’. The only items specifically identified as being indivisible are customs-sealed import/export ISO containers. The Transport Agency’s permit manual lists 10 types of load which it notes that the Axle Weights and Loading Group (an informal industry group convened by the Transport Agency) has determined should be considered as indivisible. The list placed in the proposed Rule is:

- transformer oil
- platform trailers
- construction equipment
- load dividers
- ballast
- towing of disabled vehicles
- fire-fighting vehicles carrying water
- slurry sealing.

Towing a trailer does not (in most situations) invalidate the load classification. Nor would the carrying of limited ancillary equipment.

The reason for wanting to formalise the list is that, while their treatment as indivisible is accepted practice, there remains a legal risk for operators in that the practice does not have formal legal standing.

The reason that building removals are not added to the proposed Rule is that the Transport Agency’s permit manual for building removals notes that, in theory, buildings may be reduced to individual components but judgement is required in determining what is a disproportionate effort. It would not be appropriate therefore to establish a general principle of indivisibility for building removals in the Rule.

Weighing Tolerances

PROPOSAL 4

Replace the existing weighing tolerances with a weighing tolerance of 500 kg (axles and gross mass) and 1,000 kg (axle sets and groups) for all heavy vehicles

Not directly in the draft Rule: removes current tolerances in VDAM 2002 at 5.1 and 5.2

While the Rule sets axle and gross mass limits, tolerances above these limits are applied before enforcement action is taken. Tolerances reflect that some loads may gain weight in transit, for example due to the effects of rain, as well as the difficulty of accurately weighing some loads.

The maximum current weighing tolerances for axle and gross mass (excepting HPMV) are:⁴

- 500kg – for weights up to 11,000kg
- 1,000kg – weights from 11,000kg - 33,000kg
- 1,500kg – weights heavier than 33,000kg
- 300kg – for front steer axles

It is proposed to set the weighing tolerances to those currently applying to vehicles on permit:

- 500kg for all individual axles, twin steer axles and gross mass limits.
- 1,000 kg for axle sets (e.g. a tri-axle set at the rear of a semi-trailer).

The new tolerance levels are much less complex, and the current difference between permit and non-permit tolerances is removed. They better reflect the accuracy of modern weighing techniques, and reinforce the need to load within the legal limits.

Tolerances are not intended to establish additional legal limits above those in the Rule. Instead they reflect that some loads may gain weight in transit and the technical limits of weighing devices.

Permits for Specialist Vehicles and Buses

PROPOSAL 5

5A. Expand the current ability to apply for permits for additional axle limits for passenger service vehicles (buses) to include specified specialist vehicles: concrete mixers; rubbish trucks; and ground-spreader trucks.

5B. Provide increased axle mass limits, on permit only, for these specialist vehicles

See 4.1 and Schedule 1 Table 4B

It is proposed that higher axle limits be available, under permit, for vehicles other than buses. These other vehicles typically also have heavy rear axle loads and the load cannot be easily redistributed. The higher axle limits would be available to rubbish trucks, concrete mixers and ground-spread fertiliser trucks.

The decision on whether or not to approve a specific vehicle on a specific route will continue to stay with the relevant RCA. The RCA may also provide for limits below the maximum set by the Rule where access to weaker roads is sought (but cannot use the permit process to set axle loadings below general access limits).

The comparison below contrasts the existing (Part C) axle mass limits available for buses on permit, with those in Schedule 1 Table 4B of the proposed Rule:

⁴ These are set out in the Land Transport (Offences and Penalties) Regulations 1999. HPMV tolerances are separately set out in the current Rule.

- twin-tyred axle in any set from 8,800kg to 12,000kg
- twin-tyred axle with a single large-tyred axle in a tandem axle set and a 60/40 load share, from 14,600kg to 16,000kg
- twin-tyred axle with a single large-tyred axle in a tandem axle set and a 55/45 load share, from 16,000kg to 18,000kg.

The proposal will also add new axle mass limits for two twin-tyred axles in a tandem axle set, of:

- 17,000kg, for axles spaced less than 1.3m apart
- 18,000kg, for axles spaced 1.3m or more apart.

Simple Trailers

PROPOSAL 6

Increase the gross mass limits for approved over-length simple trailer combinations from 36,000kg to 40,000kg.

See 3.1

Car transporters, which use a “simple trailer” connection at the rear of the prime mover, are currently constrained to a combination gross mass of 36,000 kg. The draft Rule allows a 40,000kg gross mass if the tow connection includes roll coupling and an HPMV permit is obtained. The increase has been assessed as safe for simple trailer combinations that meet performance and design standards set by the Agency. This would enable the productivity benefits from this proposal to extend from car transporters to other applications of simple trailer combinations.

While this is a significant increase in gross mass limits, the individual axle mass limits are still within current limits and are not expected to have significant impacts on road infrastructure.

For safety purposes, the 36,000kg gross mass limit would still be the default mass limit for simple trailer combinations that do not meet the performance and design standards required to obtain an over-length permit.

Larger (“mega”) tyre size

PROPOSAL 7

Allow a new tyre size category (444mm or wider) and define standard tyres as tyres narrower than 355mm.

See Part 2, Definitions, plus parts of Schedule 1 Table 2

The proposed Rule allows for a new tyre size category (444mm or wider) to complement the current single and large size tyres. The new ‘mega’ tyre will allow a maximum axle mass on a single-tyred axle of 7,600kg. This can be achieved as the wider tyre distributes the axle mass over a wider area so reducing pavement impact. This will benefit some operators by giving a greater choice in tyre sizes. Table 2 includes:

Single mega tyred:	
(a) in a twin-steer axle set	5,500kg
(b) in a single-steer axle set	7,200kg
(c) in any other axle set	7,600kg

The existing definition for standard tyres will also be changed to remove the reference to rim diameter size which is no longer considered necessary. Standard tyres would now be defined as all tyres narrower than 355mm.

Dimensions

Width

PROPOSAL 8

Extend maximum allowable width to 2.55m, inclusive of load securing devices

Schedule 1 Table 1 plus parts of 2.2

Under the current Rule, the maximum width of a vehicle for general access is 2.50m. The Rule also specifies a number of items not included in this limit. These include:

- load securing devices, e.g. ropes and chains
- central tyre inflation hoses and
- collapsible mirrors.

In practice this means there an effective width for open body vehicles, such as flat deck trucks, of 2.55m (i.e. 2.50m width plus the 25mm allowed each side for load securing devices). For enclosed vehicles not using restraining devices the current maximum width is 2.50m.

Under the proposal, fully enclosed vehicles would be able to make use of an additional width of 50mm. There would be no additional benefit for open-body vehicles. The increased width would create two benefits:

- operators would have a much wider selection of heavy vehicles available for purchase (the standard in EU countries, for example, is 2.55m) which should mean better pricing and encourage the uptake of modern vehicles with lower emissions and better safety features
- for some specialist vehicles (e.g. refrigerated trucks) the additional width can allow for far more efficient loading.

Safety outcomes are expected to be unchanged; many existing heavy vehicles already operate at these widths and the constraint on external fittings (see below) means that intrusion beyond the lane they occupy will not alter.

Exceptions to Width

PROPOSAL 9**9A. Allow close proximity monitoring devices****9B. Constrain mirror width to current limits****9C. Allow up to 25mm on either side of a vehicle for aerodynamic tabs**

See Exceptions in 2.2

Close proximity monitoring systems (CPMS)

Heavy vehicles can have “blind spots” where the driver cannot see vulnerable users, such as a cyclist or pedestrian. This change allows up to 50mm on each side of a vehicle to install a CPMS. These systems can raise a driver’s awareness of the vehicle’s proximity to objects and people, and are an appropriate response consistent with crash data citing lack of vision as the main cause of side-impact crashes.

Mirror width

This change redefines the current exception for collapsible mirrors (which allows an additional 0.24m either side of the vehicle under the 2.50m width limit) to ensure that mirrors do not extend beyond an overall 2.98m maximum. Without this re-definition, mirrors would otherwise be allowed to extend to a total of 3.03m due to the increased width limit to 2.55m, which would increase the risk of side-swipes.

Aerodynamic tabs

This change provides an exception to allow up to 25mm on each side of a vehicle to attach aerodynamic tabs. These tabs are currently being used under exemptions as a trial, which shows they improve fuel efficiency and vehicle stability.

Height

PROPOSAL 10**10A. Extend maximum allowable height to 4.30m, inclusive of load securing devices****10B. Allow operators with suitable technology to temporarily exceed the height limit when raising the vehicle to clear obstacles**

See Schedule 1 Table 1 and 2.2

The current Rule allows 4.25m as the standard height limit, but allows the addition of securing devices (e.g. chains) at an additional 25mm.

Under this proposal, fully enclosed vehicles would have a slight benefit; for example, stock trucks could fit safety frames without reducing the internal height for animal crates.

The requirement for vehicles to meet the static roll threshold (a measure of the resistance of a heavy vehicle to rollover) in the Rule would remain unchanged.

The Transport Agency has identified some structures on our highways that may need to be modified to meet the proposed increase⁵. Additional posting of structures with limited clearance for a standard height vehicle may also be needed.

Ground clearance

This change allows vehicles to temporarily raise their height above the height limit in order to clear a ground obstruction, where specified equipment criteria are met. Technology that temporarily raises vehicles is available so this change would simply enable the technology to be used.

While an increase in height can affect vehicle stability, this impact is expected to be minimal as the increase in height is temporary and is automatically retracted when the vehicle gathers speed (i.e. about 20 kilometres per hour).

Overweight Permitting

PROPOSAL 11

11A. Allow bulk permits for HPMV

11C. Allow heavy vehicle temporary exceptions from over-dimension permitting for towing or obtaining certification.

See 4.1, notes to Schedule 2, and 4.7

Bulk Permits. The proposed Rule allows identified prime movers (towing vehicles) to be ‘mixed and matched’ in combination with appropriate pro-forma trailer designs published by the Transport Agency. Other combinations would still require permitting of individual vehicles.

NOTE: While the Rule will allow this change, the Transport Agency will need to develop systems to identify which trailers can be matched to which prime movers. Options will be considered over the next few months, and operators will be provided with a timeline for progressing this work. Other RCAs would also be unable to provide bulk permitting until systems are in place.

The current Rule also includes “potential” processes – such as linking permits for increased gross mass to on-board tracking systems – that are not currently applied.

⁵ For example, the Ramarai Tunnel, on SH1 just South of Kaikoura.

Temporary exceptions. This change allows HPMV over-length vehicles (up to 23.0m long) to temporarily operate unladen without a permit when moving between the manufacturer and customer and/or vehicle compliance certifier pending registration and permitting. It also allows another heavy vehicle to be temporarily used to move a heavy vehicle (including any trailers) without an overdimension permit where a heavy vehicle has broken down or crashed.

Management of Overdimension Loads

PROPOSAL 12

12A. Allow the Agency to have regard to traffic offending history in considering a permit application

12B. Create critical conditions for overdimension permits

12C. Clarify matters that may be included as conditions

12D. Clarify the responsibilities of operators and pilots

12E. Allow crane booms to be disassembled and moved as an over-dimension load

See 4.2, 5.2, and 5.1

Context. Overdimension vehicles, especially very wide and/or very long vehicles pose particular risks to other vehicle users and at times road infrastructure such as tunnels, bridges and road signs.

The proposed Rule takes a graduated approach to the conditions it imposes on those using overdimension vehicles/loads on the roads. These include requirements to use warning panels and lights, restrictions on when and where loads can travel, and requirements for accompanying pilot vehicles. For larger vehicles or loads, permits are required; these are issued by the Transport Agency.

Roles. Defined roles in the VDAM Rule would require the permit-holder (operator) to be responsible for ensuring conditions of a permit are met, and the lead pilot to be responsible for the safe management of the overdimension load from origin to destination, and in ensuring the vehicle is no wider than allowed for in the permit.

Considerations. The key changes proposed are:

- establish in the Rule obligations on the Transport Agency, when issuing a permit, to give due consideration to the capability of the vehicle and the safety of road users. The intention is to align overdimension permits with considerations that already apply to permit applications for increased mass.
- in considering whether a permit should be issued, the Transport Agency would be able to have regard to the traffic offending history of the person who applied for the permit, including breaches of condition of any permit issued under the Rule.

The preference is not to regulate the largest overdimension loads through establishing specific limits, but to ensure better initial planning is undertaken and, where necessary, require permit conditions specific to the planned trip.

Critical conditions. This is to be supported by establishing penalties for breaching critical conditions. Breaching a critical condition would create a liability for a greater fine and a standard breach of permit condition, i.e. \$2,000 compared to \$350. These changes are also modelled on the current overweight permit regime. Government has not indicated directly which aspects of overdimension permits should be critical. Possible examples could be:

- the load or vehicle has dimensions greater than that stated on the permit, or
- failure to meet the piloting requirements specified in the Rule.

Your comment is sought on what breaches should be more significant/ critical.

Other conditions. Another way of aligning over-dimension permits with those used for overweight is to set out matters that the permit can contain (including conditions specific to a journey). Note that the form of the permit will not be set by the Rule, however.

Crane booms. It is proposed crane booms that can be disassembled to be stacked to 3.1m wide and 4.5m high (i.e. within Category 1 overdimension parameters). This significantly reduces the number of heavy vehicle trips needed to move the components for the largest cranes. Piloting and other conditions linked to Category 1 travel would apply to these vehicles.

Signage and Lighting

PROPOSAL 13

13A. Remove duty to use flags to mark edges for Category 4 loads

13B. Allow pilots to use sound warning devices

13C. All tractors between 2.5m and 3.1m to have the option to use a warning light or hazard panels to signify width

13D. Provide for the Transport Agency to be able to establish alternative warning signs for vehicles and pilots

13E. Remove requirement for all warning panels/signs to be frangible

13F. Define lighting by effect, not watts

See 5.4

A number of changes are proposed to improve the operation of the provisions regarding signage and lighting for overdimension vehicles. These changes are designed in particular, to accommodate the uptake of new technologies.

The Rule however uses some terms that potentially limit the uptake of new technologies. For example, minimum lighting output is specified in watts, which is no longer relevant for energy efficient LED lighting.

Another example is the use of variable messaging signs to provide warnings to motorists. At present, only the messages set in the Rule (such as “Wide Load Follows”) can be used. More flexibility (e.g. providing information about what to do or the nature of the load, would be helpful; but limiting which messages can be displayed would ensure that other drivers are given consistent information.

Flags for Category 4. At present, the Rule requires flags on the very largest vehicles and loads. This appears to be an error since these vehicles also have to be piloted, and display signs and hazard panels.

Alarms. Recent reports of crashes and near-misses with over-dimension loads indicate that some drivers pay insufficient attention to piloting vehicles. The Rule will therefore allow the use of audible alarms.

Frangible signs. Currently the Rule requires all hazard signs to be frangible – easily broken off if hit by another vehicle or roadside object. Most panels, however, are firmly affixed to part of a vehicle, and the requirement is therefore irrelevant. The Rule will continue to require frangible signs where these project outside the dimensions of the vehicle.

Piloting

PROPOSAL 14

14A. Allow vehicles to travel in convoy, subject to piloting and traffic flow requirements

14B. Remove limitation on tyre rim size for Class 2 pilot vehicles

See 5.6 and 5.7

The Rule will allow some (limited) travel by over-dimension vehicles in convoy, provided that additional piloting requirements are met. This is similar to the process allowed for specialised agricultural vehicles since 2013.

The removal of the maximum rim requirement for Class 2 pilot vehicles leading loads will give a greater range of vehicles to choose from so potentially reducing costs for new and replacement vehicles.

Travel Zones and Times

PROPOSAL 15

15A. Minor changes to zone descriptions and motorway restrictions for Category 3 and 4 vehicles

15B. Apply travel restrictions when ANZAC Day falls on a Saturday

15C. Allow most dedicated fertiliser spreaders to be exempt from the time restrictions currently in Clause 6.6(11) of the 2002 Rule

See Schedule 5 and 5.5

Proposed changes to travel zones and motorways restrictions reflect changes in road layouts and road use patterns since the Rule was established. For example, following the Christchurch earthquakes, there has been growth in industrial and commercial sites and traffic to the South of the city (e.g. around Rolleston). The Rule also proposes that toll routes can only be used by larger vehicles with the permission of the Transport Agency.

It is also proposed to apply travel restrictions when ANZAC Day falls on a Saturday (consistent with other holiday restrictions). The Rule also needs to align with the practice of “Mondayising” some public holidays.

Dedicated fertiliser spreaders (with trailers that fit standard width requirements) will no longer require certification that they meet a swept path test before becoming exempt from the time restrictions in the current Rule. This is on the basis such vehicles easily meet the swept path test.

Additional issues

(These are not change proposals included in the draft Rule).

Issue 1. The revised Rule has a number of “explanatory” notes that are designed to help the reader understand key distinctions (e.g. the difference between general access and permit mass limits. Do you consider that these and other drafting changes (such as the way tables are set out) assist clarity?

Issue 2. The current Rule has 7 tonnes as the cut-off point for class 1 pilot vehicles. This is the only place where this boundary occurs in transport legislation. Is there any reason why this boundary should not be changed to 6 tonnes (aligning with driver licensing)?

Issue 3. On many heavy vehicles, the driver’s cab is narrower than the full width across the axles. The current allowance for grab rails (50mm) is too narrow for easy grip with a gloved hand. One option would be to allow a wider grab handle, but only where the extension does not exceed 50mm on either side beyond the axle width (proposed as 2.55m in this Rule).

Issue 4. The current Rule includes 3 methodologies for calculating Static Roll Threshold and swept path characteristics (Schedules 1, 8 and 9 in the current Rule). Your view is sought on whether these should be removed from the Rule. Note that the Transport Agency would still be responsible for authorising and publishing any methodology linked to the Rule (Section 6.5 in the revised Rule).

Issue 5. The current definition of Gross Vehicle Mass (GVM) does not create a clear link between design limits and the value recorded on the Motor Vehicle Register. While a change to the Rule definition is anticipated, the ideal solution is to link this to a parallel change in the Land Transport Act 1998 (where it could replace the current gross laden weight definition).

Process for making Rule changes

The Land Transport Act 1998 (the Act) provides the legal framework for making Land Transport Rules. *Section 161* states the procedures by which the Minister makes ordinary Rules.

What are Land Transport Rules?

Land Transport Rules (Rules) are legislation made by the Minister of Transport or his delegate ('the Minister') under the Act.

The Act sets out principles and the policy framework; Rules contain detailed requirements, including standards and processes, for putting those principles and policy into operation. Rules cover a range of land transport issues. Among the outcomes that Rules aim to achieve are: safeguarding and improving land transport safety and security, improving access and mobility, assisting economic development, protecting and promoting public health and ensuring environmental sustainability.

Compliance with Rules is required because they form part of New Zealand transport law. The specific offences and penalties that apply to each Rule are set out in the Act or in regulations.

Most Rules are drafted by the Transport Agency, by an arrangement with the Chief Executive of the Ministry of Transport, working closely with the Ministry of Transport's policy and legal advisors.

Rules are drafted in plain language to be easily understood. The Transport Agency undertakes consultation on proposed changes to Rules on behalf of the Minister. The issues that are raised in submissions on the draft Rule will be analysed and taken into account in preparing the Rule for the Minister to sign.

Subject to the approval of the Minister, the proposed Rule would take effect later this year.

Application of Rule-making criteria

Proposed activity or service

Section 164(2) of the Act sets out the matters that the Minister must have regard to when making a rule. This includes the nature of the proposed activity or service for which the Rule is being established.

The VDAM Rule is designed to ensure the safety of heavy vehicles and other road users, and the appropriate use of the road network, by setting limits on mass and dimensions.

Risk to land transport safety

Section 164(2)(a), (c) and (d) requires the Minister to take into account the level of risk to land transport safety in each proposed activity or service, the level of risk existing to land transport safety in general in New Zealand, and the need to maintain and improve land transport safety and security.

The VDAM Rule maintains road safety, and in some areas is designed to improve outcomes by

- *encouraging the uptake of more modern technologies*
- *reducing exposure by improving vehicle productivity and*
- *providing for better management of the largest over-dimension loads*

Assisting achievement of strategic objectives for transport

Section 164(2)(e) of the Act requires that the Minister have regard, and give such weight as he or she considers appropriate in each case, to whether a proposed Rule (i) assists economic development; (ii) improves access and mobility; (iii) protects and promotes public health; and (iv) ensures environmental sustainability.

Assists economic development

The Rule provides for improved productivity for heavy vehicles, especially through the permit system, while continuing to manage the road network in an appropriate manner.

Improves access and mobility

The Rule improves the options available for the provision of public transport.

Protects and promotes public health

The Rule encourages the uptake of more modern vehicles with better emission controls.

Ensure environmental sustainability

The Rule is designed to encourage more efficient use of vehicles and the road network.

Costs of implementing the proposed changes

Section 164(2)(ea) of the Act requires that the Minister have regard to the costs of implementing measures proposed in a Rule.

A summary of the costs, and benefits, of the proposed changes, can be found in the regulatory impact statement on the Ministry of Transport's website.

www.transport.govt.nz/land/vdam/

International considerations

Section 164(2)(eb) and (f) of the Act requires that, in making a Rule, the Minister must have regard to New Zealand's international obligations concerning land transport safety, and the international circumstances in respect of land transport safety.

The Rule does not impinge on any international obligations.

How the Rule fits with other legislation

Land Transport Act 1998

Government is currently considering some amendments to this Act, which would support the changes proposed in the Rule.

For example, the “All Trucks Stop” sign used at weigh stations is prescribed in *section 125(4)* of the Act. One proposal is to allow variable messages – e.g. require a class of vehicles to stop while other vehicles are allowed to continue. This would require a change to the Act.

These proposals have not as yet been presented to Parliament, and therefore are subject to change.

Bylaws

The proposed Rule refers to prohibitions or restrictions on heavy vehicles that are imposed by Road Controlling Authorities (RCAs) by making bylaws. RCAs are empowered to make bylaws prohibiting or restricting any specified class of traffic or type of load by *section 22AB* of the Land Transport Act 1998. No change to the bylaw making power is envisaged.

Offences and penalties

Land Transport Rules do not contain offences and penalties for breaches of Rule requirements. These provisions are set out in Regulations.

If the proposed Rule is signed into law, government will be asked to agree to minor changes to existing infringement fees which would be made by amending the Regulations. These would reflect the re-positioning in the Rule of the duties they refer to.

In addition, some new offences (critical breaches of an over-dimension permit) will be added. These would link to the existing overweight offences.

The weighing tolerances, which are currently split between the Rule (for vehicles under permit) and the Regulations (for general access vehicles) will be combined within the Offences and Penalties Regulations.

Fees

Rules cannot include fees; these must be set in regulations.

Permit fees are currently set by the *Heavy Vehicles Regulations 1974* and will need to be updated.

Publication and availability of Rules

Access to consultation material

Copies of this consultation document may be obtained by calling the Transport Agency Contact Centre on 0800 699 000. It is also available on the Transport Agency's website at:

www.nzta.govt.nz/vdam-2016

Availability of Rules

Land Transport Rules can be purchased from selected bookshops throughout New Zealand that sell legislation. They are also available to be read free of charge at the National Office and regional offices of the Transport Agency. Rules are also available on the Transport Agency's website at:

www.nzta.govt.nz/resources/rules/

Information about Rules

Information about Rules and the Rule-making process is available online at:

If you have not registered your interest in the VDAM Rule (or other Land Transport Rules), you can do so by contacting the Transport Agency at our addresses shown in the *Making a submission* section at the front of this publication, or at: <http://www.nzta.govt.nz/resources/rules/about/registration.html>. This includes a form for registering an interest in Rules.