

## Agency Disclosure Statement

### **Amendments to Land Transport Act 1998: vehicle dimensions and mass related provisions**

The Regulatory Impact Statement has been prepared by the Ministry of Transport with assistance from the NZ Transport Agency (NZTA) and NZ Police.

It analyses the impacts of proposed amendments to provisions in the Land Transport Act 1998 (the Act), that relate to regulation of the dimensions and mass of motor vehicles.

A number of the proposed amendments are of a technical nature and involve no effective change to regulatory requirements for vehicle operators or owners. The proposals with potential regulatory impacts are:

- an increase in the maximum level of infringement fees that can be set in regulations made under the Act
- changes to provisions defining offences that could result in higher penalties for some regulatory breaches
- changes to enforcement powers that may either increase or reduce compliance costs for vehicle operators.

The main sources of evidence relating to proposals for changes to offences and penalties are numbers of offences detected by the Police and data collected by the Police and the NZ Transport Agency on the incidence of overloading and other relevant offending. Evidence relating to compliance costs is based on time estimates for enforcement tasks provided by NZ Police.

This Regulatory Impact Statement does not include the costs of overloading, such as pavement damage. All such costs are ultimately recovered from heavy vehicle users through road user charges, but the nature of the charging and road funding systems means that the costs imposed by overloaded vehicles are spread across all heavy vehicle operators.

It has not been possible to quantify all the possible impacts of the proposals to change the conditions under which vehicles may be redirected for the purpose of weighing, or lowering the threshold at which overloaded vehicles must have their loads reduced before proceeding (“offloading”). This is because there is insufficient information available to assess the likely impact of these measures on the efficiency of the road freight market.

Ideally, further analysis would have been undertaken to provide greater understanding of the effect of penalty levels in deterring overloading of vehicles, compared with probability of detection and other enforcement factors. This was not possible within the time available. It is also unclear whether such analysis could distinguish the effect of penalties and other enforcement tools from economic factors, such as freight demand, that are also likely to be associated with the prevalence of overloading.

Given the uncertainties involved, the approach taken seeks to maintain the real value of monetary penalties at levels consistent with the original intention of the Act.

The proposals will not impair private property rights, market competition, or the incentives on business to innovate and invest; or override any of the fundamental common law principles.

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## Regulatory Impact Statement

### **Amendments to Land Transport Act 1998: vehicle dimensions and mass related provisions**

1. This Regulatory Impact Statement (RIS) addresses impacts associated with proposed amendments to provisions in the Land Transport Act 1998 (the Act) relating to regulation of vehicle dimensions and mass. These proposals are intended to form part of a Land Transport Amendment Bill to be introduced in 2016. This Bill is also intended to include a number of other, unrelated, proposals which are the subject of separate regulatory impact statements.
2. The proposals described in this statement have arisen from a review of the regulatory system relating to vehicle dimensions and mass. Most of the legislative components of this system are contained in secondary legislation; principally the Vehicle Dimensions and Mass Rule 2002 (the VDAM Rule) and the Land Transport (Offences and Penalties) Regulations 1999 (the offences and penalties regulations). Further regulatory impact analysis will be undertaken to support policy proposals for change to the secondary legislation.

### **Executive Summary**

3. Regulation of vehicle dimensions and mass aims to ensure that vehicles are operated safely, that roads and bridges are protected from the excessive damage that can be caused by overloaded vehicles, and that barriers to productivity are minimised.
4. Road transport is a highly competitive industry with small margins and, although most vehicles on the road at any time are within applicable mass and dimension limits, there is a significant level of non-compliance. Detection of offending is challenging, and enforcement checks are costly and time consuming for both Police and transport operators.
5. Amendments to the Act are proposed to make enforcement more effective and efficient to improve compliance, while at the same time reducing compliance costs associated with enforcement activity for law-abiding operators.
6. The main proposals with regulatory impacts are to:
  - a) amend provisions that empower stopping of vehicles for inspection purposes (including weighing) to reduce the costs imposed on compliant operators and enable more efficient use of enforcement resources
  - b) amend the conditions under which a heavy vehicle can be redirected for more than 5 kilometres in order to reach a suitable site for weighing
  - c) increase the maximum level of infringement fee that can be set for overloading offences from \$10,000 to \$15,000 to compensate for inflation and removal of other penalties

- d) provide more visible and adequate sanctions for breaches of limits on vehicle height, length and width
  - e) provide for breaches of weight limits for bridges to have the same penalties as breaches of other vehicle weight limits
  - f) empower Police to order trucks to be offloaded where they are overloaded by either 10 percent or more than two tonnes, whichever is the lesser (instead of the existing blanket allowance of 10 percent).
7. Proposal (a) is expected to reduce the costs of enforcement activity for both Police and compliant vehicle operators. It also has the potential to achieve significant improvements in the rate of detection of overloaded vehicles at sites where technology can be deployed to screen vehicles before stopping them.
  8. Proposal (b) could involve added compliance costs for some operators. The likely overall impact is, however, unclear. In many cases, redirection will impose lower compliance costs on an operator than weighing a vehicle at the roadside.
  9. Proposal (c) does not have any direct effect on penalty levels, but would allow infringement fees for the most serious overloading offences to increase in future.
  10. Proposals (d) and (e) will allow for increased penalties and greater use of infringement offences for some types of regulatory breach. Proposal (d) would require regulations to be made in future defining new offences and penalties. Proposal (e) would apply existing overloading penalties to breaches of bridge limits. In both cases the numbers of offences involved are likely to be very small.
  11. Proposal (f) could result in substantial compliance costs for affected operators, but is also likely to provide a highly effective added deterrent to excessive overloading. It will therefore reduce the ability of non-compliant operators to gain a competitive advantage over those who comply with weight limits.

## Status quo

### Regulatory framework for vehicle dimensions and mass

12. The Act is the primary legislative authority for regulation of vehicle use on New Zealand roads. Its main focus is safe operation of vehicles, but rules and regulations made under the Act also address other objectives. These include protecting road infrastructure from damage due to overloading and minimising barriers to productivity.
13. Regulation of vehicle dimensions and mass has important safety objectives, particularly in relation to vehicle stability and fit to the available road space. However, vehicle and axle weight limits are chiefly determined by assessments of the loads that bridges and pavements are capable of carrying without suffering undue wear and tear.

14. The Act contains no specific dimension or mass limits. Instead, it establishes a high-level framework for setting limits in land transport rules and defining relevant offences and penalties in regulations. It also provides the key enforcement powers that enable Police to stop and check vehicles for compliance.
15. Enforcement of heavy vehicle regulation is the responsibility of the NZ Police Commercial Vehicle Investigation Unit (CVIU). The CVIU is able to stop heavy vehicles for checking compliance with mass limits at weigh stations positioned at key points on State highways. Checks can also be carried out at other locations, using portable scales.

### **Enforcement Checks**

16. Heavy vehicle compliance checks are relatively resource intensive. Checks cover a wide range of requirements and involve inspection of documents, vehicles and loads. A level 3 check<sup>1</sup> that does not involve weighing a vehicle will take about 20 minutes. A check involving weighing at a dedicated weigh facility will require an additional 10 minutes. Roadside weighing using portable scales can take between 20 and 90 minutes. Vehicles are only weighed if an officer considers, following a visual inspection and check of documents (including any over-weight permits), that there is a possibility of overloading. The Act, however, does not require the Police to have any specific reason to weigh a vehicle.
17. The CVIU performs about 90,000 inspections a year. About one inspection in 10 involves weighing. It has been estimated that current heavy vehicle inspection stops result in a loss of 45,000 transport operator hours and consumption of an additional 180,000 litres of diesel (for idling time and acceleration after stopping).
18. A rough estimate of the cost of lost time for operators is \$50.00 an hour. But the actual impact of an inspection stop is unlikely to be directly proportional to the length of the delay. The time required for a short inspection can often be made up, whereas a longer delay is much more likely to have an impact on delivery schedules, or result in drivers reaching the limit of their available work hours before reaching their destinations.
19. In the interests of efficiency, NZ Police concentrate resources on high volume roads. Enforcement activity also takes place on minor roads, but the level of police surveillance on New Zealand's extensive network of rural roads is relatively low. A significant number of heavy vehicle freight movements are on low-volume rural roads, carrying primary produce.

### **Penalties**

20. Penalties for operators breaching the VDAM Rule weight limits are set out in the offences and penalties regulations. Infringement fines for exceeding total allowable vehicle weight begin at \$350 for the first 1,000 kgs of weight recorded above the applicable limit, after taking account of a tolerance for weighing inaccuracies. Penalties then increase in steps to

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<sup>1</sup> Level 3 checks involve an inspection of the operator's driver licence, registration and certificate of fitness, road user charges compliance and vehicle equipment such as lights, tyres and brakes. A level 4 check also involves weighing the vehicle.

a maximum of \$10,000, depending on the extent to which the vehicle exceeds the relevant weight limit. Fines can be cumulative, depending on the number of axles and sets of axles that are over-weight. An operator can accumulate fines in excess of \$30,000 for a single instance of overloading.

21. These fines are relatively high compared with other infringement offences. This reflects the economic incentive for vehicle operators to overload. It is estimated that each additional tonne of payload generates \$0.10 of revenue per kilometre for freight transport operators.
22. In cases of gross overloading the Police must order a vehicle's load to be reduced (off-loading). Section 126 of the Act provides for a heavy vehicle to be prevented from proceeding with its journey if, when it is weighed, either its total weight, or the weight on any axle or set of axles, is found to be more than 10 percent over the relevant limit. The vehicle concerned then has to either remain at the roadside, or be moved to a place of safety approved by a Police officer, until its load has either been reduced or redistributed to bring it within all applicable weight limits.
23. In the 12 months ending on 30 June 2015, Police ordered 1,284 vehicles to be offloaded. The costs of offloading to an operator can vary greatly, and no estimate is available of the overall level of compliance costs involved. However, the cost of resulting delays and the potential need to send another truck to collect offloaded goods can be considerable.

## Problem Definition

24. No fundamental problems have been identified with the framework in the Act. However, there are a number of provisions that require updating in order to ensure that the regulatory system continues to function effectively, and current enforcement practice imposes relatively high costs on compliant operators. New technology provides opportunities for modernising enforcement provisions to achieve higher levels of compliance at lower cost to both government and the road transport industry.
25. The proposals covered in this statement address three problem areas relating to enforcement of mass and dimension limits:
  - A. Probability of detection of overloading and other offences
  - B. Ability to direct vehicles to safe locations for weighing
  - C. The adequacy of penalties and other enforcement sanctions.

### Low probability of detection

26. Detection of overloading offences requires trucks to be stopped and weighed. The average probability that a heavy vehicle will be stopped and checked by Police has been estimated at once per 44,000 kilometres<sup>2</sup>. This probability will vary depending on route followed. In

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<sup>2</sup> NZ Transport Agency Research report 500, Strategic electronic monitoring and compliance of heavy commercial vehicles in the Upper North Island, October 2012.

practice some vehicles are stopped relatively frequently, but others are rarely inspected, if ever.

27. As noted in paragraph 17 above, only a small proportion of vehicles pulled over are weighed, but it is not usually possible to determine whether weighing is required until a vehicle has been pulled over and an officer has carried out an initial inspection. This means that relatively high total compliance costs are imposed for the number of overloading offences detected.
28. Stopping of heavy vehicles is largely random. The Act provides that vehicles can either be pulled over by an officer, or be instructed to stop by a sign with the specific wording “all trucks stop”. The latter is usual practice at weigh stations, as this helps to ensure the safety of enforcement officers on busy highways. As there is limited space available at weigh stations, and limited staff available, it is likely that some overloaded vehicles are able to drive past while other vehicles are being inspected.
29. The NZ Police carry out annual heavy vehicle compliance surveys aimed at providing an objective measure of the extent of compliance with regulatory requirements. Over the past 5 years these surveys have found that the percentage of heavy vehicles that are over-weight is typically in a range between 8 and 9 percent.
30. The Police survey findings are consistent with NZTA data collected through the operation of unmanned devices placed at strategic points on State highways. Weigh-in-motion<sup>3</sup> (WiM) data is recorded each time a truck travels over a device. In 2013, 9.2 percent of all heavy vehicles passing WiM sites were recorded as over-weight. This figure will include some vehicles operating legally with permits issued under the VDAM Rule. On the other hand, it does not include vehicles that may have been compliant in terms of gross mass, but overweight on one or more individual axles due to poor load distribution.
31. As WiM sites are located solely on State highways they do not provide any data about the extent of overloading on local roads. Anecdotal evidence suggests offending is more frequent on rural roads that are subject to less surveillance than the State highway network.
32. WiM data is subject to measurement error of up to 5 percent, which is not sufficiently accurate for evidential purposes. Over time, it is likely that accuracy will improve, but for the immediate future roadside checks and static weighing will remain essential to weight limit enforcement.

### **Limited ability to weigh vehicles**

33. A significant limitation on the ability to obtain evidence of overloading offences is the availability of suitable weighing sites. At present there are 10 weigh stations equipped with fixed scales at various locations around New Zealand, along with more than 100 weigh pits that can be used with portable scales. Portable scales can also be used at other locations,

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<sup>3</sup> WiM measures the weight of a vehicle as it crosses a weight sensitive strip lying beneath the upper layer of road pavement (sealed road surface).

but there are many parts of the road network where space and terrain constraints do not allow vehicles to be pulled over for weighing.

34. Section 125(3) of the Act empowers Police to re-direct vehicles for weighing purposes, by up to 5 kilometres in total (i.e. redirection must not add more than 5 kilometres to the vehicle's journey), or 20 kilometres if an officer "has good cause to suspect that the driver has detoured from the normal route for the purpose of avoiding [weighing]".
35. The NZ Police state that they seldom redirect vehicles for more than 5 kilometres, due to the difficulty in demonstrating cause to suspect that a vehicle has deviated from the normal route. Police consider, however, that limiting redirection to 5 kilometres is becoming increasingly less feasible for enforcement officers. Higher traffic flows and road infrastructure changes designed to facilitate more efficient use of the network have resulted in fewer locations where vehicles can safely be weighed and inspected. Often there is no suitable weighing site accessible by a 5 kilometre redirection.
36. Over the past 15 years there have been significant changes in the makeup of the heavy vehicle fleet, with large increases in the use of multiple axle truck and trailer combinations. For example, in 1999/2000 trucks or trailers with four or more axles covered about 18 percent of all distance travelled by heavy vehicles. By 2013/14 this proportion had increased to 33 percent. Most such vehicles are used in truck and trailer combinations with at least 8 axles in total and a usual maximum weight of 44 tonnes. These vehicles are much more difficult and time consuming to weigh at the roadside compared to smaller trucks.
37. Vehicle size is increasing further with the rapid uptake of large 9 axle high productivity combinations. Such vehicles can now operate on a large part of the road network (not necessarily just on main highways) and it is often impractical to weigh these vehicles at the roadside, due to lack of suitable space.
38. Where roadside weighing is possible it requires much more time than at a weigh station, because of the limitations of portable scales. At the side of the road the total time required to weigh a large combination vehicle is commonly more than an hour. In many cases therefore it is likely that redirection would result in less lost time for operators than roadside weighing. NZ Police estimate that on average redirection for weighing would involve a 50 percent time saving for an operator compared to weighing at the roadside.
39. The need to redirect vehicles is likely to increase under the new health and safety legislation. This will place a stronger requirement on Police to use dedicated weighing sites, where staff are safe from other road users.
40. Appendix One lists examples of situations in which the current 5 kilometre limit on redirection restricts Police ability to enforce weight limits and can result in higher compliance costs for operators in individual cases.



## Adequacy of Penalties

### *Infringement fees for overloading*

41. A review of infringement fees for overloading was carried out in 2014. This resulted in increases in the level of infringement fees for most overloading offences. Details of these increases, which came into effect on 8 July 2015, are set out in Appendix Two.
42. The 2014 review was undertaken primarily to compensate for the removal of penalties for exceeding road user charges licence weight. This followed the implementation of the Road User Charges Act 2012, under which charges generally do not vary with loading. The review also took account of inflation since the regulations were created in 1999.
43. The previous Road User Charges Act 1977 provided infringement fees of up to \$10,000 for exceeding road user charges licence weight. These were frequently imposed in conjunction with fines for overloading. When the Government decided to change the road user charges system it was advised that this would reduce disincentives for overloading and Cabinet noted that a review of the penalties available for breaches of VDAM Rule limits would be carried out.
44. Road user charges data shows that total distance travelled by vehicles weighing over 6 tonnes has increased by about 40 percent between 2000 and 2014. WiM data shown in Appendix Three suggests that there may also have been an increase in the proportion of vehicles exceeding normal weight limits within total heavy vehicle movements. WiM data does not show what proportion of over-weight vehicles have appropriate permits, but it is clear that the number of heavy vehicle movements that have the potential to involve breaches of weight limits has increased.
45. The 2014 review resulted in substantial increases in penalties at the lower end of the scale, but increases in fines for more serious overloading offences were limited by the \$10,000 maximum fee specified in section 167(1)(e) of the Act. This maximum applies only to overloading of more than 13,000 kgs and has not increased since the Act was passed in 1998. Since then, the CPI has increased by about 44 percent and, in the same period, the road freight price index has increased by 75%<sup>4</sup>. This has eroded the value of the maximum penalty relative to the rewards that operators can obtain through overloading. Unlike most offences, it is not possible to seek a higher penalty for an overloading offence by taking a prosecution.
46. For a typical truck and trailer,<sup>5</sup> an overload of more than 13,000 kgs is equivalent to a total weight of over 57 tonnes. WiM data indicates that about one heavy vehicle in 2,000 is loaded to this level.

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<sup>4</sup> Statistics NZ.

<sup>5</sup> Most truck and trailer combinations are subject to a maximum weight limit of 44 tonnes before an overweight permit is required.

47. Based on total annual heavy vehicle distance travelled of about 4 billion kilometers, it is estimated that 2 million kilometres are travelled each year by vehicles weighing over 57 tonnes.
48. Road user charges licence purchases indicate that up to half of this distance could relate to vehicles that are operating under appropriate permits and have paid a correct charge for their road use. This leaves an annual distance of about a million kilometres travelled by vehicles liable to the maximum level of penalty.
49. Although this is a very small proportion of all heavy vehicle movements, overloading of this level poses disproportionate risks to infrastructure. Road damage caused by overloaded vehicles increases exponentially with weight and an 8 axle truck and trailer that weighs 58 tonnes is estimated to cause three times as much road wear as one loaded to 44 tonnes. The estimated cost of the additional road wear compared to a 44 tonne vehicle is \$1.12 per kilometre. This is an average estimate for all roads. On relatively strong pavements the impact of additional weight is likely to be less, but on pavements that are not designed to withstand large volumes of heavy traffic the impact will be greater.
50. Most 8 axle vehicles are capable of operating at 58 tonnes, in terms of manufacturers' weight ratings. At this level of overloading the value of the additional payload could be enough to cover the cost of a \$10,000 fine within less than 8,000 kilometres. As noted above, the average probability of being stopped and weighed is once per 44,000 kilometres. Over that distance, the estimated average value of extra road damage caused by an 8 axle vehicle overloaded to 58 tonnes is almost \$50,000.
51. As more than 90 percent of road damage costs are met through road user charges paid for heavy vehicles, the cost of extra road damage caused by overloaded vehicles represents a subsidy to operators of overloaded vehicles from heavy vehicle operators who comply with the law.

*Offences for breaching height, length or width limits*

52. Breaches of limits on dimensions other than mass are not currently specified in the Act in the same way as overloading offences. This inconsistency of treatment cannot be justified on safety grounds, as vehicles (or loads) that are seriously over-dimension can pose severe safety risks for other road users. Over-dimension permits can be obtained to enable larger loads to be carried under controlled conditions, but if such permits have not been obtained there can be no assurance that an over-dimension load is being transported safely.
53. At present, the penalties for breaching dimension limits (other than weight) are either a fine of up to \$1,000 or an infringement fee of \$370. These are the default penalties for any non-specific breach of VDAM Rule requirements. Such penalties may be adequate for most breaches, but do not reflect the risks posed by more serious offences.
54. Serious breaches of dimension limits can have significant consequences. For example, if a truck or its load strikes an overhead bridge this can result in severe traffic disruption. There

can also be a safety risk for other road users. For example, an over-height load may fall off a vehicle, or cause concrete or other debris to fall onto the road.

55. The NZTA has indicated that it has a particular concern about the risk of over-height loads striking the portals of the new Waterview tunnels. Depending on the circumstances, this could both endanger other road users and cause serious disruption to traffic flows on the Auckland motorway system.
56. Over-height detection sensors located near Penrose in Auckland are activated on average about once every 3 days. These sensors do not show exactly how high the vehicles concerned were, but in 2013 there were 14 incidents on State highways in the Auckland region involving over-height loads striking bridges or overhead signs.

#### *Breaches of weight limits on bridges*

57. The Heavy Motor Vehicle Regulations 1974 enable road controlling authorities to set specific weight limits for the purpose of protecting bridges. At present breaches of such limits are not treated as overloading offences for the purposes of the offences and penalties regulations and the maximum penalty is a fine of \$500. There is no applicable infringement offence.
58. Officials consider that this is an anomaly in the current legislation. In principle, breach of a specific bridge limit is at least as serious in terms of risk of damage to infrastructure as any other breach of a weight limit. Potentially, it may be more serious in terms of safety risk, as a reduced limit will have been set for a bridge on the basis of known weaknesses. In contrast, general weight limits are usually well within the safe operating limits of bridges and other road structures<sup>6</sup>.
59. There is no reliable information on the incidence of this type of breach. The number of offences detected is very small. In the period 1 June 2013 to 31 May 2015 only 21 offence notices were issued for breaching a bridge limit. This is likely to reflect that bridges with weight restrictions are not located on routes with high heavy vehicle traffic volumes, but is also likely to be associated with low levels of enforcement surveillance on such routes.

#### *Power to order overloaded vehicles to be offloaded*

60. At present a vehicle can be overloaded by up to 10 percent before offloading must be ordered. This is considered reasonable for medium sized vehicles, in view of the potential for errors in estimating the size of loads. For the largest vehicles, however, it is well in excess of usual margins of error. For example, it allows an 8 axle truck and trailer, usually limited to a maximum of 44 tonnes, to run at up to 48.4 tonnes before reaching the offloading threshold. For the increasing number of vehicles permitted to operate at weights of up to 50 tonnes, offloading is only required above 55 tonnes.

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<sup>6</sup> Frequent breaches of weight limits will, however, lead to premature aging of structures, imposing substantial costs for repair or rebuilding.

61. WiM data and Police experience indicate that overloading is relatively common within the 10 percent margin, but drops off sharply above that level. For example, Appendix Four shows that although many 44 tonne 8 axle truck and trailers are recorded as weighing up to 48 tonnes, the number that are detected loading to 49 tonnes is much lower.
62. If a 44 tonne 8 axle vehicle is overloaded to 49 tonnes the estimated road wear increases by 54 percent. This is an estimated average value for all road surfaces and the implications for stronger pavements may be less serious. On the other hand, the implications for less robust pavements, such as often found in rural areas, may be considerably more serious.

## Objectives

63. The review of the regulatory system for vehicle dimensions and mass is intended to contribute to the overall Government objective of better quality regulation. The proposals for amendment of the Act have been assessed against the following specific objectives:
  - Improving transport productivity
  - Improving road safety and community well-being
  - Improving compliance
  - Optimising road network utilisation

## Options and Impact Analysis

### Options to improve detection of overloading and ability to weigh vehicles

64. The following options were assessed in detail:

#### **Option 1 (preferred option):**

- a) Allow for heavy vehicles to be stopped for inspection using signage other than just 'all trucks stop'.
- b) Explicitly authorise use of technology such as WiM devices to screen vehicles for enforcement action.

**Option 2A:** Amend the cause required for redirecting a vehicle for weighing for up to 20 kilometres from a suspected change of route to an officer having determined that the roadside location where the vehicle has been brought to a stop is unsuitable for weighing, either for safety reasons, or because it does not meet the requirements of the Transport (Measurement of Weight) Notice 1997 (i.e. the site is not level enough for accurate weighing).

**Option 2B:** As for option 2A, but with the maximum re-direction reduced to 10 kilometres.

65. The following options have not been assessed in detail, as they are either not considered likely to be cost-effective, or are not feasible with current technology.

**Option 3:** Increase the resources available to the Police to enable more heavy vehicles to be stopped and inspected.

**Option 4:** Remote monitoring of vehicle mass using on-board vehicle weighing technology.

**Option 5:** Automated enforcement of overloading using weigh-in-motion devices in combination with number plate recognition.

### **Option 1: Screening using weigh-in-motion for selective stopping of vehicles**

#### *Description*

66. This option comprises:

- amending section 125(4) of the Act to enable selected vehicles to be pulled over using appropriate signs (the nature and content of signs would be addressed in secondary legislation)
- amending section 147 to provide for technology such as WiM to be approved to screen vehicles for subsequent evidential weighing
- automatic number plate recognition technology would be used in conjunction with WiM to aid positive identification of vehicles for enforcement action (this does not require any legislative change).

67. Screening using WiM or other methods of selection is possible under current legislation, so long as an enforcement officer pulls the vehicle over, but it is unclear whether the Act enables WiM screening to result in automatic stopping of vehicles. The proposal is to provide a clear basis for automated screening of vehicles for further inspection, and ensure that devices used for screening purposes meet appropriate quality standards.

#### *Benefits*

68. This option has the potential to achieve a major improvement in the rate of detection of overloading offences.

69. A UK trial of pre-screening using WiM<sup>7</sup> combined with number plate recognition technology achieved a 700 percent improvement in identifying overweight vehicles, compared with traditional enforcement methods similar to those used in New Zealand. This trial also found that in many cases overloading was associated with other compliance issues<sup>8</sup>.

70. Higher rates of detection have the potential to lead to greatly improved deterrence of overloading. At this stage it is not possible to quantify the likely benefits of the option,

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<sup>7</sup> [http://road-transport-technology.org/HVTT10/Proceeding/Papers/Papers\\_WiM/paper\\_22.pdf](http://road-transport-technology.org/HVTT10/Proceeding/Papers/Papers_WiM/paper_22.pdf)

<sup>8</sup> At this stage no information is available as to the extent of the deterrent effect of the higher rate of detection.

which will depend on the coverage achieved and other aspects of implementation, but this will be a focus for evaluation of any particular initiative.

#### *Issues and risks*

71. At present WiM sites are largely limited to State highways and the cost of WiM infrastructure<sup>9</sup> means it is not cost effective to extend this technology to low volume roads.
72. Anecdotal evidence suggests that some truck drivers plan timing of travel and route taken to avoid passing weigh stations when they are in operation. These strategies will presumably also be used to avoid WiM pre-screening sites.
73. There will still be a need to stop and inspect vehicles that have no overloading issues to check compliance with other standards (e.g. tyres and brakes).

#### **Options 2A and 2B: redirecting vehicles for weighing**

##### *Description*

74. These options both involve amendment of section 125(3)(b) of the Act to change the conditions under which the Police may redirect heavy vehicles for weighing purposes for more than 5 kilometres. At present this sub-section requires that an officer may redirect a vehicle for up to 20 kilometres if there is cause to suspect that a driver has “detoured from the normal route” in order to avoid weighing. The proposed replacement conditions are that Police determine that it is unsafe to weigh the vehicle where it is first stopped, due to proximity to other traffic or risk to other road users, or the location does not meet the requirements of the Transport (Measurement of Weight) Notice 1997 (i.e. it is not sufficiently level).
75. Two sub-options have been considered. Option 2A would apply the new criteria to the existing 20 kilometres maximum additional travel. Option 2B would reduce the maximum redirection to a total of 10 kilometres.
76. Section 125(3)(a) provides for redirection of up to 5 kilometres without cause and this is to remain.

##### *Benefits*

77. The proposed amendment is expected to make it easier for Police to redirect a vehicle in situations where:
  - a) there is insufficient cause to suspect that a vehicle has detoured from the normal route, but
  - b) there is no suitable weighing site within the 5 kilometres for which redirection is possible without cause.

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<sup>9</sup> The NZ Transport Agency estimates the construction cost for each Weigh-in-Motion site at approximately \$500,000.

78. The proposal will enhance the credibility of enforcement activity by reducing opportunities for vehicle operators to avoid fixed weighing sites. It will also help to ensure the safety of both Police and vehicle operators by reducing the need to weigh vehicles in locations where they may be at risk from passing traffic.
79. The loss of time for an operator resulting from redirection is most likely to be less than what would have resulted from weighing at the roadside. This assumes that roadside weighing requires a minimum of 20 minutes, in addition to any other inspection performed (at least 10 minutes more than weighing at a dedicated site), and that the average additional distance covered will be 15 kilometres (under option 2A), at a speed of 90 kmh. In many cases the extra distance will be lower and the average time required for roadside weighing is likely to be much higher for any vehicle with more than 2 axles.
80. The total compliance costs at present incurred due to roadside weighing are unknown. This is because the NZ Police do not keep separate records of the numbers of vehicles weighed at the roadside. Approximately 6,500 vehicles are weighed using portable scales each year, but this includes the use of these scales at dedicated weighpits.
81. The compliance costs currently resulting from re-direction are likely to be very small. Numbers of current redirections are not recorded, but NZ Police estimate that fewer than 100 vehicles are re-directed within the 5 kilometre limit each year and between 10 and 15 are redirected for between 5 and 20 kilometres using the existing power in the Act.
82. The additional compliance costs resulting from the proposal are difficult to estimate. Police have advised that they would not expect total numbers of re-directions to exceed 200 per annum under the proposed changes. On this basis, the direct costs and benefits of the proposal have been estimated to be small. Cost benefit analysis has indicated that option 2A would generate net benefits of just over \$6,000 per annum.
83. No information is available to enable an assessment of the effect on costs and benefits of a reduction in the maximum redirection to 10 kilometres.
84. Cost benefit analysis has been unable to quantify the indirect benefits or costs of either option resulting from greater compliance with weight limits.

#### *Issues and Risks*

85. There could be an increase in compliance costs for the industry, to the extent that the option:
  - a) results in an increase in total distance travelled for redirection purposes by heavy vehicles, and
  - b) this increase is not offset by reduced time for actual weighing.
86. There is limited information available on numbers of vehicles redirected at present and uncertainty around the number likely to be redirected in future. The new health and safety

legislation is likely to result in a greater need for redirection, but the practical effect is yet to be seen.

87. It is possible that implementation of this option could result in more heavy vehicles being stopped by Police overall, due to more efficient use of Police resources. This could entail additional compliance costs for operators, but also added benefits from increased enforcement of safety standards.
88. This option is of limited value in improving enforcement on low volume roads, where reaching dedicated weighing facilities may require a diversion of more than 20 kilometres.

### **Option 3: Increase the number of vehicles pulled over and weighed by Police**

#### *Description*

89. This option does not involve any legislative change, but requires allocation of additional Police resources to heavy vehicle enforcement activity and, potentially, increased investment in weigh stations to increase coverage of the road network.

#### *Benefits*

90. Increased surveillance by NZ Police would lead to increased rates of detection and act as a disincentive to vehicle overloading. There is insufficient evidence available to enable an estimate of the value of this disincentive compared to either the status quo, or the preferred options.

#### *Issues and Risks*

91. This option is very resource intensive and would impose additional compliance costs on vehicle operators who are keeping within the law.
92. As heavy vehicles frequently carry primary produce, increasing surveillance would involve increased coverage of the large network of local roads. This would be likely to involve additional costs to establish new weighing sites. Operation of sites on roads with lower traffic counts would be less productive in terms of use of Police resources than current main highway weigh stations.
93. Even with a doubling of Police enforcement activity, probability of detection of overloading will remain low and some operators will still find it profitable to overload and accept the risk of incurring fines. It is uncertain what level of additional activity would be required to have a significant effect on practice in the transport industry.



#### **Option 4: Remote monitoring of vehicle mass using on-board vehicle weighing technology**

##### *Description*

94. This option would involve requiring either all heavy vehicles, or a sub-set of the heavy vehicle fleet, to be fitted with on-board scales. Information from these scales would be transmitted electronically and monitored for enforcement purposes.

##### *Benefits*

95. This option has the potential to greatly increase surveillance of the heavy vehicle fleet. It could be applied selectively to target either the heaviest vehicles, or those vehicles considered most at risk of overloading, or vehicles operating on routes where there is a recognised risk of damage from excessive loads.

##### *Issues and Risks*

96. On-board scales are now widely used in the transport industry, both for business purposes and for operators to monitor their own compliance with load limits. The technology is capable of reasonable accuracy, but officials are not aware of any jurisdiction that uses such systems for the purpose of determining overloading penalties.

97. The Ministry of Transport considers that, although there is future potential for on-board weighing to be used to prove compliance, the technology has not yet been shown to be sufficiently secure for enforcement purposes.

98. For this reason, the Ministry has not undertaken any analysis of the costs and benefits that could be involved in applying this technology to enforcement.

#### **Option 5: Automated enforcement of overloading using weigh-in-motion devices in combination with number plate recognition**

##### *Description*

99. This is similar to Option 1, but instead of WiM only being a screening tool, the weight readings obtained would be used directly as a basis for enforcement action. The operational model would be similar to that for other forms of automated enforcement such as speed and red light cameras.

##### *Benefits*

100. This option would greatly increase the efficiency of overloading enforcement, as it would greatly reduce the necessity to stop and weigh vehicles on routes where WiM is available.

##### *Issues and Risks*

101. There are currently limits to the effectiveness of WiM infrastructure in detecting individual instances of overloading. In the future, it may be possible to use WiM data as evidence of

overloading for prosecution purposes, but this would require additional policy analysis on appropriate options, as WiM records of individual vehicle weights are subject to a margin of error.

102. It would also be essential to ensure that all information about a vehicle's allowable weight (e.g. any overweight permits applying to the vehicle on the route concerned) was available and up to date. Some of the vehicles recorded as overweight by WiM will be operating legally on permits issued under the VDAM Rule<sup>10</sup>. Some vehicles will have overweight permits, but will not be on the permitted route, or may be non-compliant in other respects. At present, this can only be ascertained if the vehicle is stopped and documents checked. At the current state of technology it may also be necessary to weigh such vehicles to confirm that they are within axle mass limits specified in permits.
103. The limited number of WiM sites means that weight enforcement in many locations would still be dependent on weighing by Police personnel.
104. The Ministry of Transport considers that allowing WiM to be used for screening purposes (option 1) is the most appropriate step at this time. This will enable further information and experience to be gained that will inform any future decision on extending the use of the technology for automated enforcement.

### **Options to address adequacy of penalties**

105. Four options have been assessed to ensure that sanctions for overloading and other dimension and mass related offences are appropriate and effective.
- Option 6:** Increase the maximum infringement penalty that can be set for overloading offences.
- Option 7:** Provide for specific infringement penalties to be prescribed for exceeding height, length and width limits.
- Option 8:** Define exceeding a specific bridge weight limit as an overloading offence for penalty purposes.
- Option 9:** Reduce the margin allowed for overloading before a vehicle must be offloaded.
106. **All of options 6 to 9 are preferred.** No other options have been identified or assessed apart from the status quo. This is not preferred, but remains a viable option, as options 1 to 3 would go some way to improve deterrence of overloading, even if penalties remain unchanged.

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<sup>10</sup> At present there is no central database of over-weight permits. Establishing such a database is not straightforward due to the number of different road controlling authorities that can issue permits.

## **Option 6: Increase the maximum infringement penalty that can be set for overloading offences**

### *Description*

107. The proposal is to increase the maximum allowable level of infringement fines that can be set for overloading from \$10,000 to \$15,000. This is similar to the increase in the CPI since the Act was passed (44 percent) and would allow for subsequent amendments to regulations to set higher infringement penalties for the highest levels of overloading.

### *Benefits*

108. This option would enable the relativity between the infringement penalties for least serious and most serious offences to be restored and penalties for all overloading offences greater than 4 tonnes to be increased to levels more commensurate with their real value when originally set. If this is not done then penalties effectively reduce over time relative to the economic benefits to be gained from offending of this nature.

109. An increase in the maximum infringement penalty will partly compensate for the fact that a vehicle overloaded to this extent would, before 2012, have also been liable for penalties for exceeding the weight specified in its road user charges licence or licences. Reduction of disincentives for overloading was an unintended consequence of the road user charges reform, which aimed primarily to simplify the charging system.

### *Issues and Risks*

110. The likely effectiveness of this option is unclear, as there is no evidence on the extent to which heavy vehicle operators are sensitive to penalty levels.

111. Numbers of overloaded vehicles increased in 2013, following removal of penalties for exceeding road user charges licence weight, but this was in a context of strong increasing demand for road freight.

112. It may be unlikely that changes in penalty levels alone will have any significant effect on levels of overloading, given current rates of detection.

## **Option 7: Provide for specific infringement penalties to be prescribed for exceeding height, length and width limits**

### *Description*

113. This option envisages adding a provision to the Act to enable specific offences and penalties for breaches of dimension limits to be set by regulation. This would be similar to the existing provision in respect of overloading offences in section 43, but (unlike overloading offences) would provide for offences to be dealt with either by infringement or by prosecution.

### *Benefits*

114. This option would allow penalties for breaches of height, width and length limits to be set at levels appropriate to the risks involved. It is likely that this will result in different levels of penalty for exceeding the different dimensions involved and more serious penalties for breaches that pose more serious risks to infrastructure or other road users.

#### *Issues and Risks*

115. Further analysis is required to determine the appropriate levels of penalties and definitions of offences. Such analysis would include consideration of whether infringement penalties should be set and if so for which specific offences. Given the small numbers of serious over-dimension offences detected it may be more appropriate for these to be dealt with by prosecution rather than infringement notice.

### **Option 8: Define exceeding a specific bridge weight limit as an overloading offence for penalty purposes**

#### *Description*

116. The proposal is to add “exceeding a bridge limit” to the definition of overloading offences in section 43 of the Act. This would enable amendment of the offences and penalties regulations to apply the same penalties to exceeding bridge limits as applied to exceeding total vehicle weight. These are the infringement penalties referred to under Option 6.

#### *Benefits*

117. This option enables penalties for exceeding bridge limits to be commensurate with those for exceeding other limits on total vehicle weight. This will result in similar penalties applying to offences that involve at least similar risks in terms of safety and infrastructure damage.

118. It is not possible to estimate what effect this is likely to have on levels of offending. However, the resulting increase in maximum penalty is very substantial and this would be expected to have a significant deterrent effect.

#### *Issues and Risks*

119. Actual current levels of offending are very uncertain, as bridges with weight limits are not usually on routes that are subject to frequent Police surveillance, and it is possible that not all offences detected result in Court proceedings.

120. Given that there are no existing infringement penalties for exceeding bridge limits (at present such offences can only be dealt with through Court prosecution, whereas the proposal will mean they will only be dealt with by way of infringement), it is possible that the change will result, at least initially, in an increase in numbers of reported offences.

## **Option 9: Reduce the margin allowed for overloading before a vehicle must be offloaded**

### *Description*

121. This option involves an amendment to section 126(1)(b) of the Act to make the maximum level of overloading allowed before offloading is required 2 tonnes, or 10 percent of the applicable limit, whichever is the lesser.

### *Benefits*

122. This amendment would be expected to have a significant impact on levels of overloading. At present WiM data indicates that 6 percent of 8 axle truck and trailer combinations are overloaded by more than 2 tonnes, while fewer than 2 percent are above the current offloading threshold of 48.4 tonnes. This data is consistent with anecdotal reports that while many operators are prepared to take the risk of incurring overloading fines, fewer are prepared to risk off-loading.

123. In 2014, WiM data indicated that about 21 percent of all truck and trailer combinations were over-weight and that the average weight of all over-weight truck and trailers was 47.7 tonnes<sup>11</sup>. An 8 axle combination loaded to this weight is estimated to cause road damage costs of about \$0.75<sup>12</sup> per kilometre, as compared to \$0.55 per kilometre at 44 tonnes.

124. Cost benefit analysis indicates that a reduced offloading threshold could be expected to result in direct costs of \$162,000 in year 1 due to increased numbers of offloads. This cost would be expected to abate rapidly in subsequent years as the industry adjusted to the lowered threshold.

125. The effect of improved compliance resulting from the changes in the offloading threshold, together with increased ability to redirect vehicles for weighing, has been estimated as a reduction in average road freight vehicle payload of 0.08 tonnes. Cost benefit analysis has assessed the net present value of this reduction as a saving in pavement wear of \$7.2 million over 30 years, and a reduction in productivity of \$188 million over the same period, giving an overall net negative productivity impact of \$180.8 million.

126. The cost benefit analysis prepared for this RIS was not able to quantify the benefits of improved compliance in terms of improving competition in the road freight market, but noted that this benefit may outweigh the productivity loss.

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<sup>11</sup> WiM sites are unable to distinguish whether vehicles are operating under appropriate over-weight permits. It is likely that at least 20 percent of truck and trailer combinations identified as “over-weight” in WiM data are operating under permits.

<sup>12</sup> Averaged across all roads, including GST.

## *Issues and Risks*

127. The effect of the change in offloading threshold on operator behavior is uncertain as there is no recent experience of a change in this limit. The response is likely to vary depending on individual operator perceptions of the likelihood of detection on a given route.
128. Operators who wish to continue to operate at higher weights may be able to obtain overweight permits. Some will not be able to do so, but this is likely to indicate that either the route they intend to travel, or the vehicle they wish to use, is unsuitable for overweight loads and would impose higher than average costs on other road users, either through excessive damage to the infrastructure, or increased safety risks.

## **Monitoring, Evaluation and Review**

129. The WiM data provided by the NZTA and the Police compliance surveys will provide ongoing information as to the level of operator compliance with VDAM Rule weight limits.
130. The NZTA records the kilometres travelled by HPMV permitted vehicles. This can provide an indication of the proportion of vehicles recorded as overweight at WiM sites that are operating legitimately on permits.
131. Implementation of Option 1 would be subject to evaluation by the NZTA in order to assess the effect on operator behaviour and enable implementation to be fine tuned to achieve the best outcomes.

## **Consultation**

132. The Ministry and the NZTA have developed the proposed options in close collaboration with the NZ Police CVIU.
133. There was previous consultation on the need to increase infringement fines for overloading offences. In this context, it was made clear that the maximum penalty level was constrained by the Act. There was general acceptance among stakeholders that the level of penalties needed to increase.
134. Further consultation with key stakeholders will be undertaken prior to setting infringement offence penalties in regulations.
135. The option of using WiM to screen vehicles for overloading enforcement has been discussed with an industry reference group. There is a significant level of support for this approach in industry, on the basis that it should result in lower compliance costs for operators who keep within the law.
136. Proposals to make it easier to redirect vehicles for weighing and to reduce the threshold for offloading have been the subject of targeted consultation with key road transport stakeholders. Responses indicate that the changes to redirection conditions are likely to be

opposed by the industry, especially if the maximum distance remains at 20 kilometres. The major industry groups favour a 10 kilometre limit. There is greater acceptance of the proposal to reduce the offloading threshold.

## **Appendix One: Effects of current 5 kilometre limit for redirection of vehicles for weighing.**

The following are examples of cases in which inability to redirect heavy vehicles to a more suitable site for weighing has resulted in higher compliance costs for operators or reduced Police ability to enforce weight limits.

- 1 One officer weighed an eight axle truck/trailer combination at the roadside with one set of scales ... he was able to get the combination off the road into a suitable area and had a compliant driver. The weigh took him over 1 hour to complete, plus time for subsequent paper work. Had he been able to direct him to a weigh pit or weigh bridge the weighing part of the task would have taken no more than 15 minutes.*
- 2 Kiwi fruit transport operators in Te Puke advise police staff that they know police cannot direct them to Paengaroa [weigh bridge] to be weighed, as it is over 5kms off their routes, and operate overloaded because of this.*
- 3 At Rotorua an operator who travels on SH5 from Hamilton can take a short cut to travel behind Lake Rotorua and then turn off on SH30 towards Kawerau. The Rotokawa weigh bridge is close to the turnoff, but staff cannot direct a vehicle to be weighed at this site, as it would add 5.8 km to the length of the journey.*
- 4 The Waikato expressway has no suitable space to stop or weigh a heavy motor vehicle. While prior to the expressway being built, SH1 had a set of pits that could be used by Police, an operator would now be required to travel further than 5km if they were directed there.*

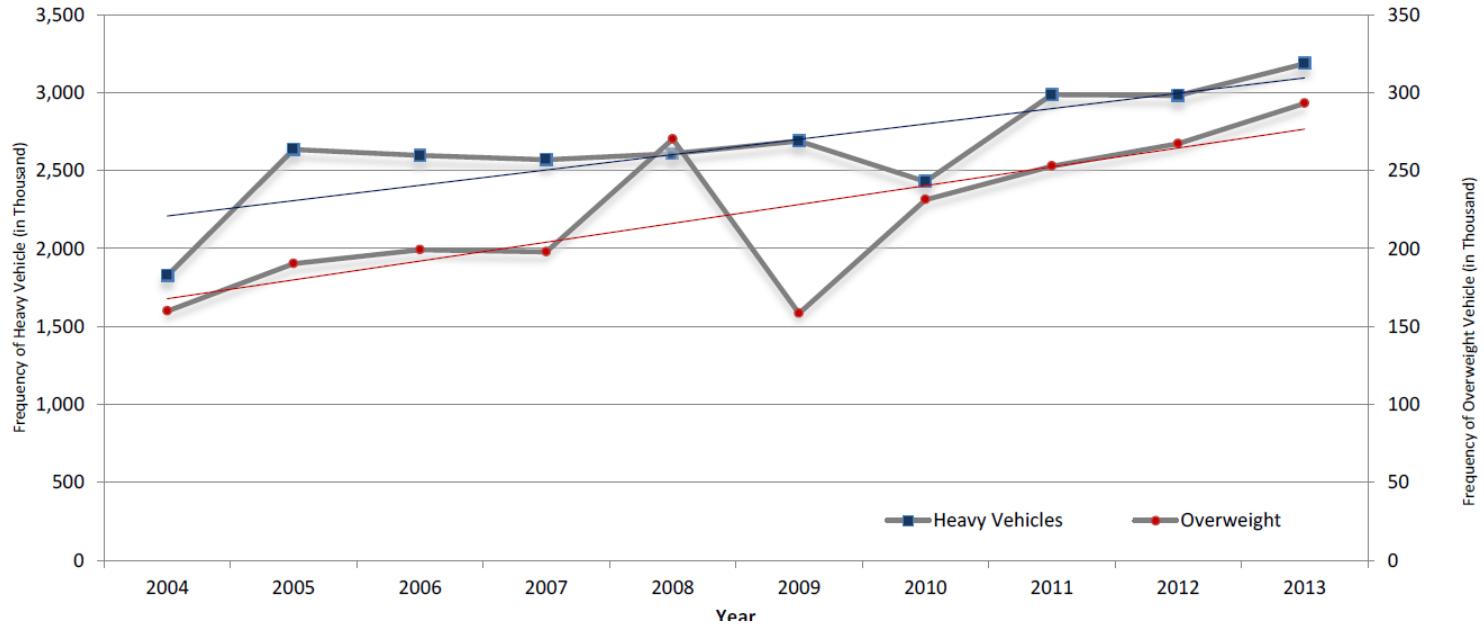


## Appendix Two : Increases to overloading infringement fees in 2015

Previous and current penalties for exceeding gross vehicle weight.

<b>Offence</b>	<b>Previous penalties</b>	<b>Since 8 July 2015</b>
<b>Amount in excess of the maximum permitted weight</b>	<b>Infringement fee (\$)</b>	<b>Infringement fee (\$)</b>
not more than 1,000 kg	150	350
more than 1,000 kg but not more than 2,000 kg	350	600
more than 2,000 kg but not more than 3,000 kg	600	900
more than 3,000 kg but not more than 4,000 kg	900	1,250
more than 4,000 kg but not more than 5,000 kg	1,250	1,650
more than 5,000 kg but not more than 6,000 kg	1,700	2,100
more than 6,000 kg but not more than 7,000 kg	2,250	2,600
more than 7,000 kg but not more than 8,000 kg	2,900	3,250
more than 8,000 kg but not more than 9,000 kg	3,650	4,050
more than 9,000 kg but not more than 10,000 kg	4,550	5,000
more than 10,000 kg but not more than 11,000 kg	5,600	6,000
more than 11,000 kg but not more than 12,000 kg	6,850	7,150
more than 12,000 kg but not more than 13,000 kg	8,300	8,500
more than 13,000 kg	10,000	10,000

**Appendix Three: trends in numbers of heavy vehicles and overweight vehicles at WiM sites**



## Appendix Four: Weigh-in-motion data for 8 axle truck and trailer combinations

