

# AUDITOR-GENERAL'S REPORT PERFORMANCE AUDIT

## Improving Road Safety – Heavy Vehicles

### Roads and Traffic Authority of NSW



The Legislative Assembly  
Parliament House  
SYDNEY NSW 2000

The Legislative Council  
Parliament House  
SYDNEY NSW 2000

In accordance with section 38E of the *Public Finance and Audit Act 1983*, I present a report titled *Improving Road Safety - Heavy Vehicles: Roads and Traffic Authority of NSW*.

A handwritten signature in black ink that reads 'Peter Achterstraat'.

Peter Achterstraat  
Auditor-General

Sydney  
May 2009

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## Foreword

I was prompted to do this audit as a result of an horrific crash on the F3 freeway at Mooney Mooney. On 22 October 2004 a semi-trailer loaded with 18 tonnes of building material crashed into 34 vehicles travelling north on the F3 freeway. One woman died and two people were seriously injured.

The crash investigation revealed that the semi-trailer was unregistered and unroadworthy. This raised questions about the Roads and Traffic Authority of NSW (RTA) role in regulating heavy vehicles travelling on our roads.

The RTA is responsible for improving road safety. It is also responsible for managing the impact of heavy vehicles on our roads, both in terms of safety and damage. It does this by regulating road use and checking compliance.

The RTA has achieved success in managing road safety issues, leading to steady reductions in the number of people killed on our roads to the lowest levels since 1945.

However, heavy vehicles are over represented in crashes. They represent around two per cent of vehicles registered in NSW and together with those registered interstate, are involved in nearly 22 per cent of crashes where someone is killed.

This report explores how well the RTA manages heavy vehicle safety and highlights some of the challenges in this complex issue.

Peter Achterstraat  
Auditor-General

May 2009



## Executive summary

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## The focus of our audit

Heavy vehicles are those that weigh 4.5 tonnes or more and include articulated trucks, trailers, rigid trucks and buses. There are around 120,000 heavy vehicles registered in NSW, but there are also many thousands of heavy vehicles registered elsewhere that travel on NSW roads.

There were over three thousand crashes involving heavy vehicles on NSW roads in 2007. Heavy vehicles represent around two per cent of all vehicles registered in NSW. And together with those registered interstate, were involved in nearly seven per cent of all crashes and in nearly 22 per cent of crashes where someone is killed.

Improving road safety and the regulation of heavy vehicles in NSW is the responsibility of the Roads and Traffic Authority of NSW (RTA). The RTA uses annual vehicle inspections, on-road compliance checks, Safe-T-Cam cameras and fixed speed cameras to test compliance with heavy vehicle safety regulations.

The RTA's on-road enforcement program for heavy vehicles focuses on three main causes of crashes: speed, fatigue and vehicle roadworthiness including load restraint. These factors are present in around a quarter of crashes involving heavy vehicles, and a third of crashes involving heavy vehicles where someone dies. This is one of many programs run by the RTA and the NSW Police Force to reduce heavy vehicle crashes.

This audit aimed to assess how well the RTA manages on-road enforcement to reduce the number and severity of crashes involving heavy vehicles. Specifically we wanted to find out how well the RTA:

- deters and detects breaches of heavy vehicle safety regulations
- enforces heavy vehicle safety regulations.

We also examined the RTA's response to the crash that occurred on the F3 freeway at Mooney Mooney. On 22 October 2004 an unregistered semi-trailer loaded with 18 tonnes of building material crashed into 34 vehicles travelling north on the F3 freeway. One woman died and two people were seriously injured.

## Audit opinion

The RTA's approach to detecting and enforcing heavy vehicle safety has produced mixed results.

There have been overall decreases in the number of crashes and people killed and injured in crashes involving heavy vehicles between 2002 and 2007. However, the number of crashes and the number of people injured have increased between 2006 and 2007.



The number of people killed in crashes involving heavy vehicles has fallen by nearly 29 per cent between 2002 and 2007 compared to 21 per cent for other crashes.

Yet, when compared to all fatal road crashes, the percentage involving heavy vehicles has increased. In 2007, heavy vehicles were involved in nearly 22 per cent of all motor vehicle crashes where someone was killed. This has increased from around 16 per cent in 2003.

The RTA has been most successful in reducing the number of crashes due to the vehicle's condition. It has also been successful in reducing the number of crashes and deaths due to fatigue.

In contrast, there has been a recent increase in the number of crashes involving speed. And nearly half of all fatal crashes involving heavy vehicles occur in high speed zones.

The RTA regularly surveys the speed of heavy vehicles travelling on major roads. Its 2008 survey shows that around 47 per cent of heavy vehicles exceed the 100 km per hour heavy vehicle speed limit, down from 52 per cent in 2006. The RTA's survey of all vehicles shows that around half exceed posted speed limits. Yet, the rate of infringements for speeding offences by heavy vehicles is three times lower than the rate for other vehicles.

There are possibly many reasons for this lower rate of speed infringements for heavy vehicles. One is that the RTA's fixed speed cameras located in 110 km per hour zones cannot distinguish a heavy vehicle from other vehicles and, therefore cannot differentiate those exceeding the heavy vehicle speed limit of 100 km per hour.

And while Safe-T-Cam is supposed to manage both speed and fatigue, we found that while it can detect speeding offences it is not used to enforce them.

There are other areas where we think that the RTA can improve its approach. While it would be impossible for the RTA to detect all instances where the vehicle or driver fails to comply with regulations, we do expect the RTA to maximise detection, especially where it targets high risk vehicles.

Yet we found the rate of detection varied in different locations across the state with no apparent reason. In one location, every second vehicle inspected was given an infringement notice whereas in another location, a breach was detected in only one in every ten vehicles inspected.

Just prior to the fatal crash at Mooney Mooney in 2004, the RTA had failed to detect and stop the unregistered semi-trailer that caused the crash. The RTA has since made a number of changes to improve how it detects and stops an unregistered heavy vehicle.

We recognise that the RTA is unable to prevent all crashes. However, we consider that the RTA could do more to improve its ability to detect and respond to high risk heavy vehicles travelling on our roads.

## Key audit findings

### Chapter 1 The RTA's role in heavy vehicle safety

The RTA regulates the use of NSW roads by all heavy vehicles in order to minimise the number and severity of crashes due to speed, fatigue and vehicle roadworthiness. To do this, the RTA uses annual vehicle inspections, on-road compliance checks, Safe-T-Cam cameras and fixed speed cameras to test compliance with heavy vehicle safety regulations.

As well as the general road rules, there are specific rules for heavy vehicles due to their higher impact on road safety and the condition of our roads. If the regulations are breached, the RTA can take enforcement action against the driver as well as the owner or operator.

Many of the rules for heavy vehicles are part of the national heavy vehicle compliance and enforcement framework, which includes Chain of Responsibility powers. This means that the RTA can take action against parties in the supply chain for breaches of heavy vehicle safety regulations.

These national reforms are being progressively implemented by the RTA in NSW and its counterparts in other states. The RTA will continue to complement the national framework with its own regulatory and compliance policies for heavy vehicles. The RTA's on-road enforcement program underpins these policies.

### Chapter 2 How well does the RTA deter and detect breaches?

The RTA's on-road enforcement program is used to deter and detect breaches of heavy vehicle safety regulations. While it would be impossible for the RTA to detect all breaches across the state, we expect the RTA to maximise detection.

The RTA uses a range of methods to manage on-road enforcement. It has developed a risk-based approach to target on-road inspections to occur when and where heavy vehicle movements are at their highest.

However, we found that the RTA is not always in the right place at the right time to maximise deterrence and detection. This is because the risk-based approach is not used effectively in all regions.

We found that where the risk-based approach worked well, on-road enforcement was matched to the time and place of peak heavy vehicle traffic and crash risks. In contrast, one region had not changed its schedule of on-road enforcement in two years to correspond with changes in traffic flow or crash risks.

Another dimension to managing on-road enforcement is balancing the amount of resources allocated to the various components. The RTA's on-road enforcement program is delivered by Inspectors, who also work on annual registration inspections, as well as attending crashes and other activities. Priority is given to annual inspections, followed by on-road enforcement.

Around one-third of an Inspector's time is spent on annual registration inspections. While annual inspections have led to improvements in vehicle condition, there are opportunities for the RTA to better use Inspectors. In other states, such as Victoria, a risk-based approach is used for these inspections by accredited third parties. This is similar to the approach used for other vehicles registered in NSW.

We also found that the resources available for on-road enforcement over the last two years have remained the same despite increases in heavy vehicle registrations and the opening of a new checking station. The result has been less road-side inspections.

There are a number of other ways in which the RTA can improve its effectiveness. One is to ensure that minimum standards for vehicle compliance inspections include critical safety checks and that these checks are completed. Another is to ensure that checking stations use the same criteria to identify heavy vehicles that must be inspected.

The RTA only uses overt methods to detect breaches which may limit effectiveness. All fixed cameras and heavy vehicle checking stations are sign-posted and its inspection patrol vehicles are marked making avoidance easy. Other states use a mix of overt and covert methods to detect breaches.

In regard to detecting speeding offences, we found a low rate of infringements for heavy vehicles compared to the rest of the population. This has highlighted weaknesses in the RTA's current approach to the detection of speeding offences by heavy vehicle drivers.

**Chapter 3**  
**How well does**  
**the RTA enforce**  
**heavy vehicle**  
**safety**  
**regulations?**

The aim of enforcing heavy vehicle safety regulations is to change behaviour in order to reduce the number and severity of crashes. The RTA enforces the regulations by penalising the driver, the owner of the vehicle, and where appropriate, the operator, when it detects a breach.

We found that on-road enforcement can be effective in reducing the number and severity of crashes involving heavy vehicles, although the RTA has achieved mixed results.

For example, the number of crashes involving heavy vehicles has decreased by 11 per cent from 2002 to 2006, but increased by more than five per cent from 2006 to 2007. The number of people killed has fallen by nearly 29 per cent since 2002. However, when compared to all fatal road crashes, the percentage involving heavy vehicles has increased from 16 per cent in 2003 to nearly 22 per cent in 2007.

The RTA's focus on annual registration inspections has resulted in a low rate of crashes due to vehicle condition. In addition, a tripling of infringements for fatigue offences since 2002-03 has led to reductions in the number of crashes and deaths due to fatigue.

Other factors that may have contributed to these results include changes to the way enforcement action is taken over the last ten years. Rather than targeting only the driver, regulations now hold owners and operators responsible for ensuring both their drivers and vehicles comply.

There has been a recent increase in the number of crashes involving speed, which we found corresponded to a decline in the number of infringements issued for speeding.

The decline in speed infringements may be due to either increased compliance by drivers or decreased detection. The RTA's role in detecting speed offences is discussed in more detail in Section 2.6.

Enforcement is most likely to change behaviour if it is consistent and matches the severity of the offence. The RTA has a range of enforcement options available and in some cases it can apply further penalties where the offence is repeated.

We found that the RTA does not apply enforcement action consistently. And some minor breaches may be better dealt with using formal warnings which are currently not available.

## Recommendations

- Better detect and enforce speeding offences**
- We recommend that the RTA focus on improving the detection and enforcement of speeding offences by heavy vehicle drivers by:
1. using Safe-T-Cam or better technology to enforce point to point speed offences against heavy vehicle drivers by July 2009 (page 31)
  2. routinely checking the operation of all Safe-T-Cam cameras to maximise accuracy (page 31)
  3. ensuring that its fixed speed cameras detect all speeding offences by heavy vehicle drivers by December 2009 (page 32).
- Better response to high risk heavy vehicles**
- We recommend that the RTA sharpen its response to high risk heavy vehicles travelling on our roads by:
4. clearly defining what is meant by visual mechanical check by July 2009 (page 27)
  5. standardising the weightings for serious road-safety criteria used in checking station screening lane templates by July 2009 (page 29)
  6. increasing the risk rating of any heavy vehicle that is identified as high risk but not inspected to make sure that it will be inspected at the next available opportunity by July 2009 (page 29)
  7. introducing formal warnings for some minor breaches of regulations, including escalation options for repeating the same offence, by December 2009 (page 39)
  8. ensuring that it can identify all heavy vehicles travelling on NSW roads regardless of registration status by December 2009 (page 43)
  9. taking immediate action to identify drivers or operators who may have committed a safety breach (page 43).
- Better use of resources**
- We recommend that the RTA more effectively target its resources to be in the right place at the right time by:
10. ensuring that risk assessments are consistently used to determine where and when on-road inspections operate and that risks are regularly reviewed by December 2009 (page 24)
  11. introducing a risk-based approach to the annual inspection scheme for heavy vehicles by July 2010 (page 26)
  12. introducing a mix of overt and covert methods to detect breaches of heavy vehicle safety laws by July 2009 (page 26).

## Response from the Roads and Traffic Authority

*I refer to your letter of 31 March 2009 which provides the final report on how well the Roads and Traffic Authority (RTA) manages heavy vehicle safety.*

*I appreciate the professionalism your staff have demonstrated throughout the audit and the constructive comments made to the RTA during the process to improve road safety.*

*The challenge of regulating heavy vehicles requires a mix of technology, regulation and enforcement initiatives to provide the economic, environmental and safety outcomes the community expects. While on-road enforcement, the focus of this audit, is a critical compliance and enforcement tool in regulating heavy vehicles, it has to be complemented by other compliance assurance tools to meet the challenge of increasing freight tasks in NSW and increasing complexities in the road freight and logistics sector.*

*An integrated and more sophisticated heavy vehicle compliance and enforcement framework is required in addition to conventional on-road enforcement. This framework now includes chain of responsibility legislation, accreditation and incentive based schemes, industry consultation and education, a professional RTA Inspectorate, and better use of technology such as the Intelligent Access Program. The framework facilitates appropriate and timely regulatory responses to areas of non-compliance that pose high risks to road safety and road wear. The highest deterrent value is achieved by appropriate enforcement. For example, chain of responsibility investigations and prosecutions have produced significant improvement in the compliance of vehicle loading.*

*It is pleasing to note that the report has identified a number of road safety successes achieved in NSW:*

- There have been overall decreases in the number of crashes and people killed and injured in crashes involving heavy vehicles between 2002 and 2007.*
- The number of people killed in crashes involving heavy vehicles has fallen by nearly 29% between 2002 and 2007 compared to 21% for other crashes.*
- The RTA has been successful in reducing the number of crashes from contributing factors such as vehicle's condition and fatigue.*

*I also note the concerns in the report regarding heavy vehicle road safety results.*

### *How well does the RTA deter and detect breaches*

*I further note the acknowledgement in the report that it would be impossible for the RTA to detect all instances where the vehicle or driver fails to comply with regulations.*

*The RTA agrees with the need to maximise detection and has invested significantly in the last few years in the development of risk based heavy vehicle compliance profiling tools to be deployed in the field to support intelligence driven enforcement and to drive desk top investigations and triggered audits to target recidivist offenders.*

*Enforcement resources are regularly reviewed and flexibly deployed in response to special operations, new initiatives and national reforms.*

*I note the various report recommendations to enhance fixed speed cameras and Safe-T-Cam network capabilities to better enforce heavy vehicle speeding. The RTA undertakes to explore their feasibility.*

*It is important to note that NSW is the only state so far to have implemented the national speed compliance chain of responsibility legislation. In addition to driver speeding offences, parties in the logistics supply chain that have caused speeding due to their commercial arrangements can now be prosecuted under the new legislation. The RTA has expanded its enforcement program to include this.*

#### ***How well does the RTA enforce heavy vehicle safety regulations***

*The audit report notes that on-road enforcement can be effective in reducing the number and severity of crashes involving heavy vehicles, and in particular, the positive road safety outcomes associated with the annual heavy vehicle inspection program and high level of fatigue related infringements.*

*The RTA agrees with the audit opinion that enforcement action needs to be applied consistently and needs to match the severity of the offence. We will continue to review our risk based approach to enforcement and our sanction regime to ensure they are relevant and produce the best compliance and road safety outcomes.*

*In comparison to other states in Australia, NSW has the largest road transport enforcement workforce, the greatest number of checking stations, a Safe-T-Cam network across the state, and the highest level of investment and usage of technology in heavy vehicle compliance and enforcement.*

*The RTA will continue to develop an integrated approach to heavy vehicle compliance and enforcement and has commenced action in implementing the audit recommendations.*

*(signed)*

*Michael Bushby  
Acting Chief Executive*

*Dated: 4 May 2009*

Audit Recommendation	RTA Response
<b>Better detect and enforce speeding offences. Recommended RTA focus on improving the detection and enforcement of speeding offences by heavy vehicle drivers by:</b>	
1. Use Safe-T-Cam or better technology to enforce point to point speed offences against heavy vehicle drivers by July 2009.	Agreed. The NSW Government is considering a point to point speed enforcement program for heavy vehicles in NSW. If approved, the program will be spread over a number of years to allow for the complexity of state-wide implementation.
2. Routinely check the operation of all Safe-T-Cam cameras to maximise accuracy.	Agreed. There is an existing maintenance and component replacement program for STC cameras. The RTA will undertake a review of the current maintenance program and will improve where required.
3. Ensure that its fixed speed cameras detect all speeding offences by heavy vehicle drivers by December 2009.	While the RTA agrees that this is a desirable outcome, there are technical and regulatory issues that need to be explored. The RTA will undertake an investigation into the feasibility of using fixed speed cameras to detect all heavy vehicle speeding offences.
<b>Better response to high risk heavy vehicles. Recommended RTA sharpen its response to high risk heavy vehicles travelling on our roads by:</b>	
4. Clearly define what is meant by visual mechanical check by July 2009.	Agreed. Procedures for visual mechanical checks already exist for RTA Inspectors for on-road enforcement. RTA will undertake a review of these procedures and provide refresher training for RTA Inspectors as required.
5. Standardise the weightings for serious road-safety criteria used in checking station screening lane templates by July 2009.	Agreed. The RTA will undertake a review of screening lane templates and the procedure for their consistent use, and will update where required.
6. Increasing the risk rating of any heavy vehicle that is identified as high risk but not inspected to make sure that it will be inspected at the next available opportunity by July 2009.	Agreed. The RTA will investigate the feasibility of system enhancement to ensure such vehicles will be intercepted at the next available opportunity.
7. Introduce formal warnings for some minor breaches of regulations, including escalation options for repeating the same offence by December 2009.	Agreed. A formal warning policy has been developed by the RTA for implementation.



Audit Recommendation	RTA Response
8. Ensure that it can identify all heavy vehicles travelling on NSW roads regardless of registration status by December 2009.	<p>Due to technical system capacity issues, RTA has adopted a risk based approach to the identification of registration status of heavy vehicles travelling on NSW roads.</p> <p>RTA will investigate the feasibility of a technical or other solution under known constraints to support the identification of all heavy vehicles travelling on NSW roads regardless of registration status.</p>
9. Take immediate action to identify drivers or operators who may have committed a safety breach.	<p>Agreed.</p> <p>RTA will review existing enforcement procedure in line with regulatory requirements and update where required.</p>
<p><b>Better use of limited resources. Recommended RTA more effectively target its limited resources to be in the right place at the right time by:</b></p>	
10. Ensure that risk assessments are consistently used to determine where and when on-road inspections operate and that risks are regularly reviewed by December 2009.	<p>Agreed.</p> <p>RTA will continue to fine tune risk based profiling tools to support tactical enforcement plans.</p> <p>RTA has already introduced the development of enforcement strategies based on risk assessment and will continue to implement these across the State.</p>
11. Introduce a risk - based approach to the annual inspection scheme for heavy vehicles by July 2010.	<p>Agreed.</p> <p>A review of the annual inspection scheme for heavy vehicles has already been initiated. An implementation date of July 2010 may not be feasible due to the lead time for implementation, community consultation and communication for any regulatory change.</p>
12. Introduce a mix of overt and covert methods to detect breaches of heavy vehicle safety laws by July 2009.	<p>The RTA works collaboratively with the NSW Police Force in a variety of covert and overt operations for heavy vehicle enforcement.</p> <p>The RTA already conducts a range of covert investigations to detect breaches of heavy vehicle safety laws through chain of responsibility investigations. Other covert investigations are triggered by reports from risk based profiling tools and intelligence reports.</p>



## 1 The RTA's role in heavy vehicle safety

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## 1.1 Heavy vehicles in NSW

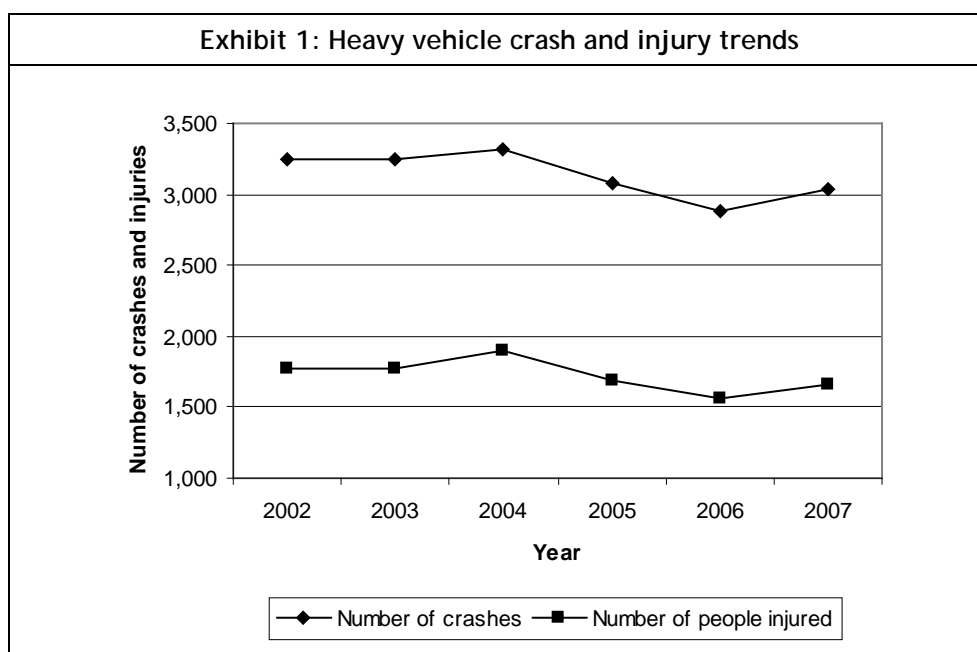
Heavy vehicles are defined as weighing 4.5 tonnes or more and include articulated trucks, rigid trucks and buses. There are around 120,000 heavy vehicles registered in NSW, but there are also many thousands of heavy vehicles that travel on NSW roads that are registered outside the state.

**Heavy vehicles are over-represented in crashes**

In 2007, there were 3,032 crashes on NSW roads involving heavy vehicles. Heavy vehicles represent around two per cent of all vehicles registered in NSW, and together with those registered interstate, are involved in nearly seven per cent of all crashes.

The number of crashes involving heavy vehicles has decreased by over six per cent since 2002, but has increased by more than five per cent between 2006 and 2007. 2008 data was not available at the time we wrote this report.

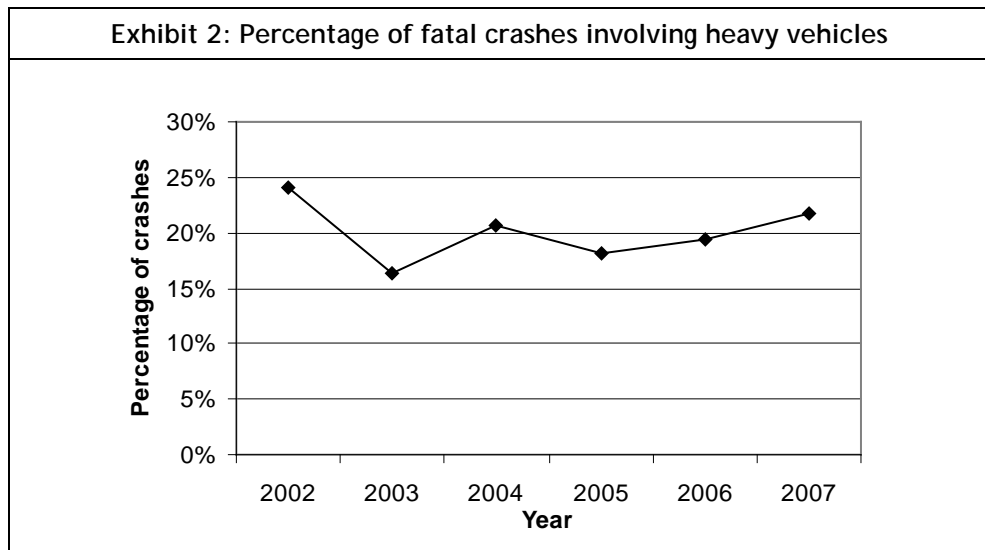
Similarly, the number of people injured in crashes involving heavy vehicles has decreased by nearly seven per cent since 2002, but increased by over six per cent between 2006 and 2007.



Source: Roads and Traffic Authority of NSW

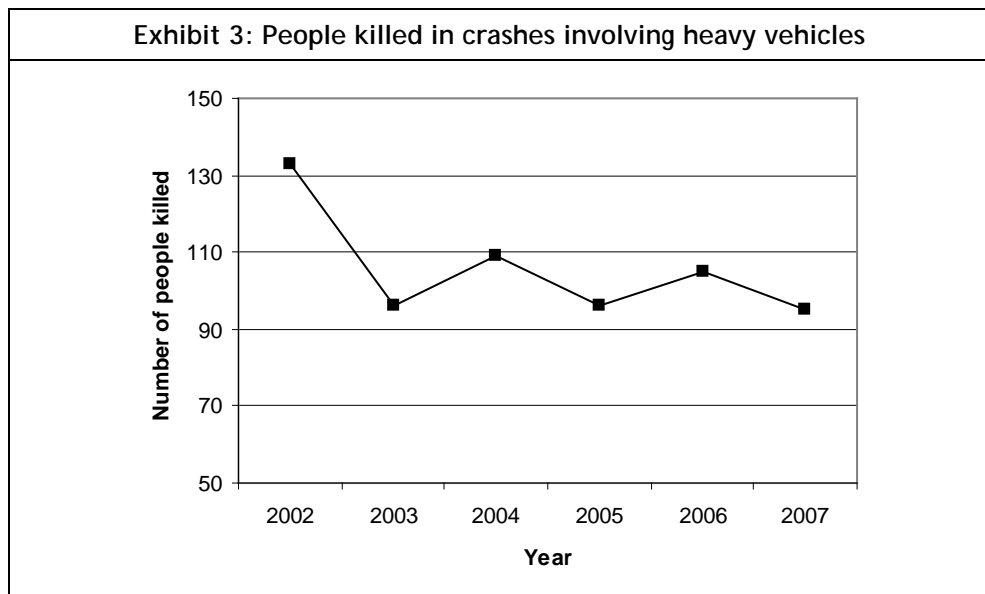
**More people die in crashes involving heavy vehicles**

In 2007 heavy vehicles were involved in nearly 22 per cent of all crashes where someone is killed. This has increased from around 16 per cent in 2003. You are three times more likely to die in a crash when a heavy vehicle is involved.



Source: Roads and Traffic Authority of NSW

Although a person is more likely to die in a crash that involves a heavy vehicle, the number of people killed has decreased by nearly 29 per cent since 2002.



Source: Roads and Traffic Authority of NSW

**NSW has the highest number of deaths**

Interstate data is only available for crashes involving heavy articulated trucks. These crashes accounted for ten per cent of the people killed on Australian roads in 2007. The highest number of people were killed on NSW roads, despite being one of only three states to record a decrease.

<b>Exhibit 4: People killed in heavy articulated truck crashes in Australia</b>		
	<b>2006</b>	<b>2007</b>
New South Wales	69	60
Victoria	31	43
Queensland	37	41
South Australia	10	6
Western Australia	11	15
Tasmania	8	5
Northern Territory	2	2
ACT	0	0
Australia	168	172

Source: Australian Transport Safety Bureau

## **1.2 What is the RTA's role in reducing crashes involving heavy vehicles?**

### **The RTA is the regulator and enforcer**

The NSW Roads and Traffic Authority (RTA) is responsible for heavy vehicle regulation and enforcement in order to improve road safety and limit the damage to roads and bridges.

The RTA identifies three main causes of crashes involving heavy vehicles. Speed is identified as the major cause followed by fatigue. Vehicle roadworthiness also plays a role as the cause of crashes involving heavy vehicles.

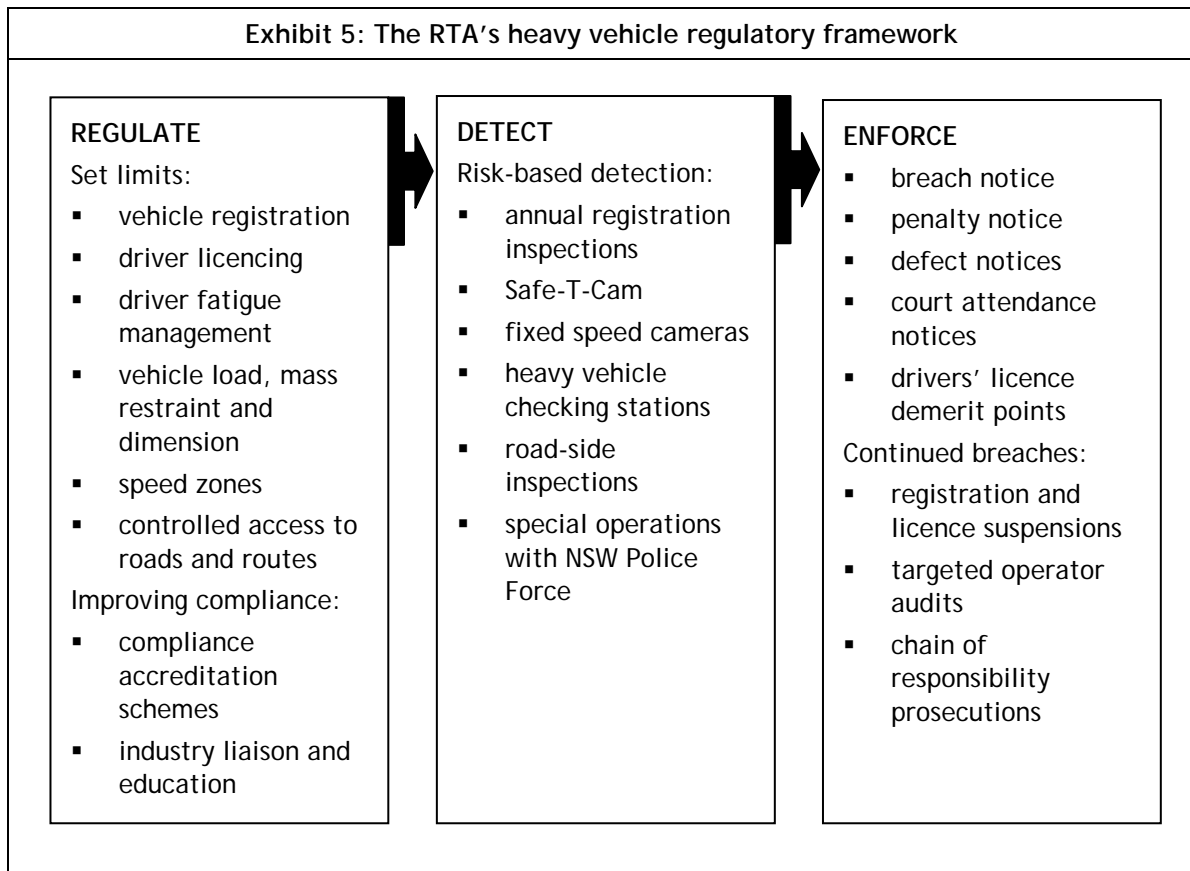
In 2007-08, nearly 50,000 fines with a value of over \$17.7 million were issued against heavy vehicles and heavy vehicle drivers for various offences including speeding, unlicensed driving and disobeying road rules.

The RTA regulates vehicles registered in NSW and those travelling through NSW but registered elsewhere in order to minimise the number and severity of crashes.

As well as the general road rules, there are specific rules for heavy vehicles. Heavy vehicle safety regulations are contained in nine acts and 11 regulations which set out the requirements that heavy vehicle drivers, owners and operators must follow to use the roads. If the regulations are breached, enforcement action can be taken against the driver as well as the owner or operator.

The RTA establishes policies for heavy vehicle regulation and enforcement programs. Inspectors Vehicle Regulation (Inspectors) deliver these programs in the RTA's six regions: Sydney, Hunter, Northern, Southern, South West, and Western.

Exhibit 5: The RTA's heavy vehicle regulatory framework



Source: The Audit Office of NSW

Exhibit 6: Heavy vehicle regulations include load restraint



Source: The Audit Office of NSW

### **1.3 National heavy vehicle safety reforms**

In 1999, the federal and state governments agreed to introduce a national heavy vehicle compliance and enforcement framework.

The national framework includes:

- self regulation by way of accreditation schemes to promote the implementation of safety management systems
- the use of chain of responsibility legislation to prosecute parties in the supply chain
- incentive schemes allowing accredited operators to carry greater loads
- industry education
- a range of penalties that allow courts to target the cause of breaches, such as supply contracts.

The national framework is being progressively implemented by the RTA and its counterparts in other states. The RTA will continue to complement the national framework with its own regulatory and compliance policies for heavy vehicle safety. The RTA's on-road enforcement program underpins these policies.

### **1.4 What is the focus of the audit?**

This audit assessed how well the RTA manages on-road enforcement to reduce the number and severity of crashes involving heavy vehicles. Specifically, we examined how well the RTA:

- deters and detects breaches of heavy vehicle safety regulations
- enforces heavy vehicle safety regulations.

To do this, we examined the RTA's on-road enforcement program. This includes compliance inspections at the road-side and at heavy vehicle checking stations, the Safe-T-Cam network and fixed speed cameras.

Appendix 2 provides the data we used to assess results. This data is presented in various report exhibits.

Appendix 3 provides further information on the lines of inquiry, scope, criteria and audit approach.



## 2 How well does the RTA deter and detect breaches?

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**At a glance**

**The key question we wanted to answer was:**

How well does the RTA deter and detect breaches of heavy vehicle safety regulations?

**Our assessment:**

The RTA's on-road enforcement program is used to deter and detect breaches of heavy vehicle safety regulations. While it would be impossible for the RTA to detect all breaches across the state, we expect the RTA to maximise detection.

However, we found that the RTA is not always in the right place at the right time to maximise deterrence and detection. This is because the risk-based approach is not used effectively in all regions.

The balance of resources allocated to the various components could also be improved. The RTA's on-road enforcement program is delivered by Inspectors, who also work on annual registration inspections, as well as attending crashes and other activities. Priority is given to annual inspections, followed by on-road enforcement.

Around one-third of an Inspector's time is spent on annual registration inspections. While annual inspections have led to improvements in vehicle condition and a reduction in crashes due to vehicle equipment failure, there are opportunities for the RTA to now better use its Inspectors.

We also found that the resources available for on-road enforcement over the last two years have remained the same despite increases in heavy vehicle registrations and the opening of a new checking station.

The RTA could also improve the way in which Inspectors conduct vehicle compliance inspections.

The RTA only uses overt methods to detect breaches which may also limit effectiveness. All fixed cameras and heavy vehicle checking stations are sign-posted and its inspection patrol vehicles are marked making avoidance easy.

Of greater concern is the recent increase in the number of crashes involving speed. And nearly half of all fatal crashes involving heavy vehicles occur in high speed zones.

The RTA has found that around half the heavy vehicles it surveys exceed the 100 km per hour heavy vehicle speed limit. Yet, the rate of infringements for speeding offences by heavy vehicles is three times lower than the rate for other vehicles.

There are possibly many reasons for this. One is that the RTA's fixed speed cameras located in 110 km per hour zones cannot distinguish a heavy vehicle from other vehicles and, therefore cannot differentiate those exceeding the heavy vehicle speed limit of 100 km per hour.

And while Safe-T-Cam is supposed to manage both speed and fatigue, we found that while it can detect speeding offences it is not used to enforce them.

## 2.1 Managing on-road enforcement

The RTA uses annual registration inspections, on-road compliance checks, Safe-T-Cam cameras, and fixed speed cameras to detect breaches of heavy vehicle safety regulations.

On-road compliance checks are done by Inspectors at heavy vehicle checking stations, or at road-side inspection sites. Inspectors can direct a vehicle into a checking station or road-side site to inspect loads, vehicle condition, drivers' work diary and licence and registration status.

The RTA also uses a number of automated systems to monitor the movement of heavy vehicles and detect breaches.

Detection methods	Vehicle condition	Load	Speed	Fatigue	Driver licence	Vehicle registration
Heavy vehicle checking station	✓	✓	X	✓	✓	✓
Road side inspections	✓	✓	X	✓	✓	✓
Safe-T-Cam	X	X	X	✓	X	✓
Fixed speed cameras	X	X	✓	X	X	X

Source: The Audit Office of NSW

The RTA has seven heavy vehicle checking stations. These are:

- Chinderah - Northern region
- Kankool - Northern region
- Twelve Mile Creek- Hunter region
- Mt White - Hunter region
- Mt Boyce - Sydney region
- Bell - Sydney region
- Marulan - Southern region

Checking stations are an important tool to monitor vehicle loading and driver fatigue en route. The RTA has improved how it detects breaches of heavy vehicle safety regulations by introducing screening lanes at four of the seven heavy vehicle checking stations (Mt White, Marulan, Mt Boyce and Twelve-Mile Creek).

As heavy vehicles move through the screening lane, a Safe-T-Cam camera will read the vehicle's number plate, check earlier Safe-T-Cam sightings and registration records, and check the vehicle's weight and height. This data, as well as vehicle and operator offence histories, are used to determine if the vehicle should be directed into the checking station for further inspection.

Exhibit 8: The screening lane at Mt White southbound heavy vehicle checking station



Source: The Audit Office of NSW

For those checking stations without a screening lane, heavy vehicles are selected at random for a compliance inspection.

## 2.2 Is the RTA in the right place at the right time?

### Our assessment

The RTA's on-road enforcement program is used to deter and detect breaches of heavy vehicle safety regulations. While it would be impossible for the RTA to detect all breaches across the state, we expect the RTA to maximise detection.

The RTA uses a range of methods to manage on-road enforcement. It has developed a risk-based approach to target on-road inspections to occur when and where heavy vehicle movements are at their highest.

However, we found that the RTA is not always in the right place at the right time to maximise deterrence and detection. This is because the risk-based approach is not used effectively in all regions.

We found that where the risk-based approach worked well, on-road enforcement was matched to the time and place of peak heavy vehicle traffic and crash risks. In contrast, one region had not changed its schedule of on-road enforcement in two years to correspond with changes in traffic flow or crash risks.

**The RTA chooses sites on major transport routes**

The RTA maximises detection by:

- locating heavy vehicle checking stations and road-side inspection sites on major transport routes where avoidance is difficult
- operating heavy vehicle checking stations and road-side inspection sites at times which match heavy vehicle traffic volumes and crash data
- operating mobile patrols based on local traffic patterns.

Out of the six regions, two do not have checking stations (South West and Western). Most checking stations have been in place for more than 10 years except Mt White southbound on the F3 freeway north of Sydney which opened in 2007. See Appendix 1 for checking station locations.

Two of the seven checking stations (Marulan and Mt White) also operate on both sides of the road.

The RTA considers that building more checking stations is not always the best way to manage on-road enforcement. Rather, the RTA plans to use road-side inspection sites to get greater flexibility and better coverage.

**Some road-side inspection sites are not in use**

The RTA has around 200 road-side inspection sites where heavy vehicles can be checked. (See Appendix 1)

Not all existing sites are in use because transport movements and routes have changed over time. In fact, only 166 sites are currently in use. The RTA reports that it is undertaking a review in each region to identify which sites should remain, and to ensure that new sites are in the right locations. The RTA has indicated that road-side sites are also considered as part of any major road maintenance or upgrade works.



Source: The Audit Office of NSW

**Opening hours should match traffic and crash risks**      None of the checking stations or on-road inspection sites are staffed 24 hours, seven days per week. Regions must decide the right place and the right time to operate on-road enforcement.

The RTA recommends that regions use risk assessments to determine where and when road-side inspections and checking stations will operate. Regions are also expected to operate at random in quiet times to limit predictability. Criteria for assessing risk include:

- traffic flow by time of day
- crashes
- the results of previous enforcement action
- seasonal changes in traffic movements.

We found that in some regions staffing at checking stations were matched to peak heavy vehicle traffic and crash risks.

However, we found not all regions considered all risk criteria or reviewed changes to the risks to decide when to operate on-road enforcement. For example, one region had not changed its operating times to correspond with changes in traffic flow or crash risks over a two-year period.

**Recommendation**      We recommend that the RTA ensures that risk assessments are consistently used to determine where and when on-road inspections operate and that risks are regularly reviewed by December 2009.

### 2.3 Has the RTA achieved the right mix of regulatory tools?

**Our assessment**      Another dimension to managing on-road enforcement is balancing the amount of resources allocated to the various components. The RTA's on-road enforcement program is delivered by Inspectors, who also work on annual registration inspections, as well as attending crashes and other activities. Priority is given to annual inspections, followed by on-road enforcement.

Around one-third of an Inspector's time is spent on annual registration inspections. While annual inspections have led to improvements in vehicle condition, there are opportunities for the RTA to better use Inspectors. In other states, such as Victoria, a risk-based approach is used for these inspections by accredited third parties. This is similar to the approach used for other vehicles registered in NSW.

We also found that the resources available for on-road enforcement over the last two years have remained the same despite increases in heavy vehicle registrations and the opening of a new checking station. The result has been less time spent on road-side inspections.

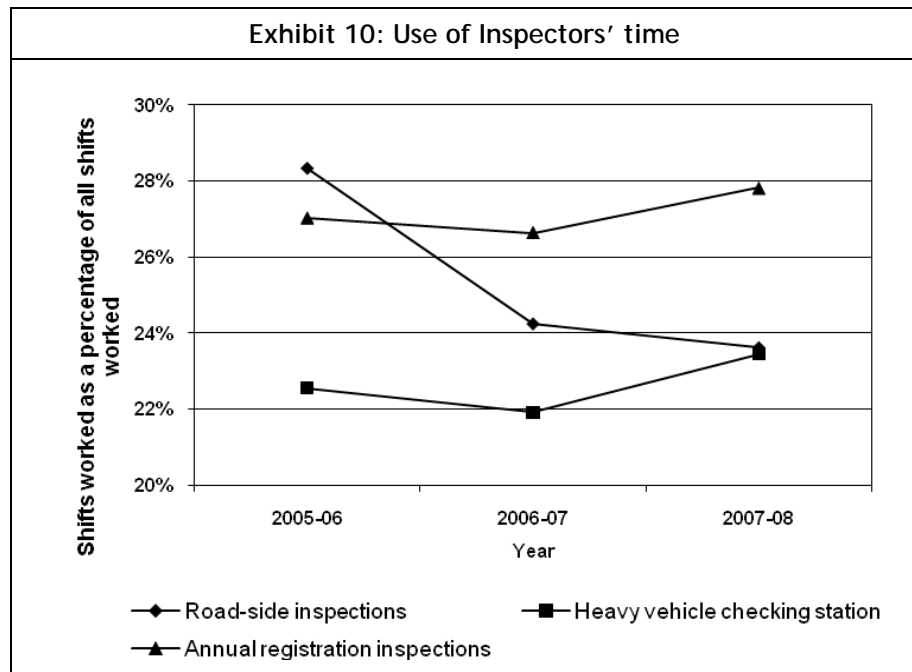
The RTA only uses overt methods to detect breaches which may limit effectiveness. All fixed cameras and heavy vehicle checking stations are sign-posted and its inspection patrol vehicles are marked making avoidance easy. Other states use a mix of overt and covert methods to detect breaches.

**Annual inspections take priority**

NSW registered heavy vehicles must have an annual roadworthiness inspection conducted by the RTA. Regions assign Inspectors to do annual registration inspections as a priority. Any remaining time is spent on on-road enforcement and other activities.

Over the last three years, the number of heavy vehicles registered in NSW has increased by nearly 4,000. There has also been a new checking station opened.

We found that the hours spent by Inspectors doing road-side inspections has decreased by 13 per cent between 2005-06 and 2007-08. Some of their time has been spent doing more annual inspections and operating the new checking station. However, the RTA reports that most of the decrease has been due to Inspectors attending meetings, training and travelling to work sites.



Source: Roads and Traffic Authority of NSW

Road-side inspections are critical to check the roadworthiness of heavy vehicles that are registered in other states but travel through NSW, especially where the heavy vehicle may not pass or get directed into a checking station. It is also a means of checking compliance with load and fatigue laws.

Annual inspections provide a valuable assurance that heavy vehicles are roadworthy. However, other states such as Victoria use a risk based approach to assuring the roadworthiness of heavy vehicles. In Victoria, vehicles are inspected less frequently by accredited third parties, similar to the approach taken by the RTA to register passenger vehicles.

Any change in the approach to annual registration inspections may impact on the availability of Inspectors to undertake on-road enforcement. This must be balanced against the number of Inspectors that the RTA needs to ensure that on-road enforcement is effective.

**Recommendation** We recommend that the RTA introduce a risk-based approach to the annual inspection scheme for heavy vehicles by July 2010.

**Using overt operations only may limit success** Inspectors patrol their local areas and pull over heavy vehicles to check compliance. All patrols use clearly marked RTA vehicles.

Heavy vehicle drivers can use the radio to alert each other when they see RTA Inspectors. This may limit the effectiveness of these operations, especially where drivers can take alternate routes or wait until the RTA patrol concludes.

In contrast, Inspectors in Queensland and Victoria use a mix of overt and covert operations to patrol transport routes.

In addition, in NSW the location of Safe-T-Cam and fixed speed cameras are clearly sign-posted giving drivers fair warning. Victoria has achieved significant speed reductions by using a mix of overt and covert fixed speed cameras on its freeways. Similar results have been found in New Zealand, indicating that deterrence is improved by using covert methods for speed detection.

**Recommendation** We recommend that the RTA introduce a mix of overt and covert methods to detect breaches of heavy vehicle safety laws by July 2009.

## 2.4 Are inspections effective?

**Our assessment** There are a number of other ways in which the RTA can improve its effectiveness. One is to ensure that minimum standards for vehicle compliance inspections include critical safety checks and that these checks are completed.

**Inspection procedures are in place** A detailed mechanical check, such as that done for annual registration inspections, is not carried out on every heavy vehicle inspected at a road-side site or checking station. Rather, the minimum requirements for on-road inspections include checking the:

- vehicle's registration
- driver's licence
- driver's work diary (where required)
- Safe-T-Cam records
- weight (mass), load restraint and dimensions
- visual mechanical checks for wear and tear and safety risks.



A brake roller test is conducted on a sample of heavy vehicles only where the site allows.

An Inspector can detain any heavy vehicle for a detailed mechanical inspection if they suspect there is a problem.

A visual mechanical check involves walking around the vehicle to identify:

- loose or missing components, such as mud flaps and light covers
- worn or broken components, such as, shock absorbers, tyre tread, wheel nuts, and lights
- signs of poor condition, such as rust and fluid leaks
- signs that brakes are not working, such as the temperature of the brake.

We found that while most of these checks were completed, what constituted a visual mechanical check differed, particularly in regard to brakes or braking components.

**Recommendation** We recommend that the RTA clearly define what is meant by visual mechanical check by July 2009.

## 2.5 Are checking stations effective?

**Our assessment** The RTA uses a number of criteria to identify high risk heavy vehicles that require further checks. However, while the same criteria are used by checking stations, the weightings can be altered, changing the tolerance for risk from one site to the next. This may result in a heavy vehicle being directed to enter at one station, but not at another.

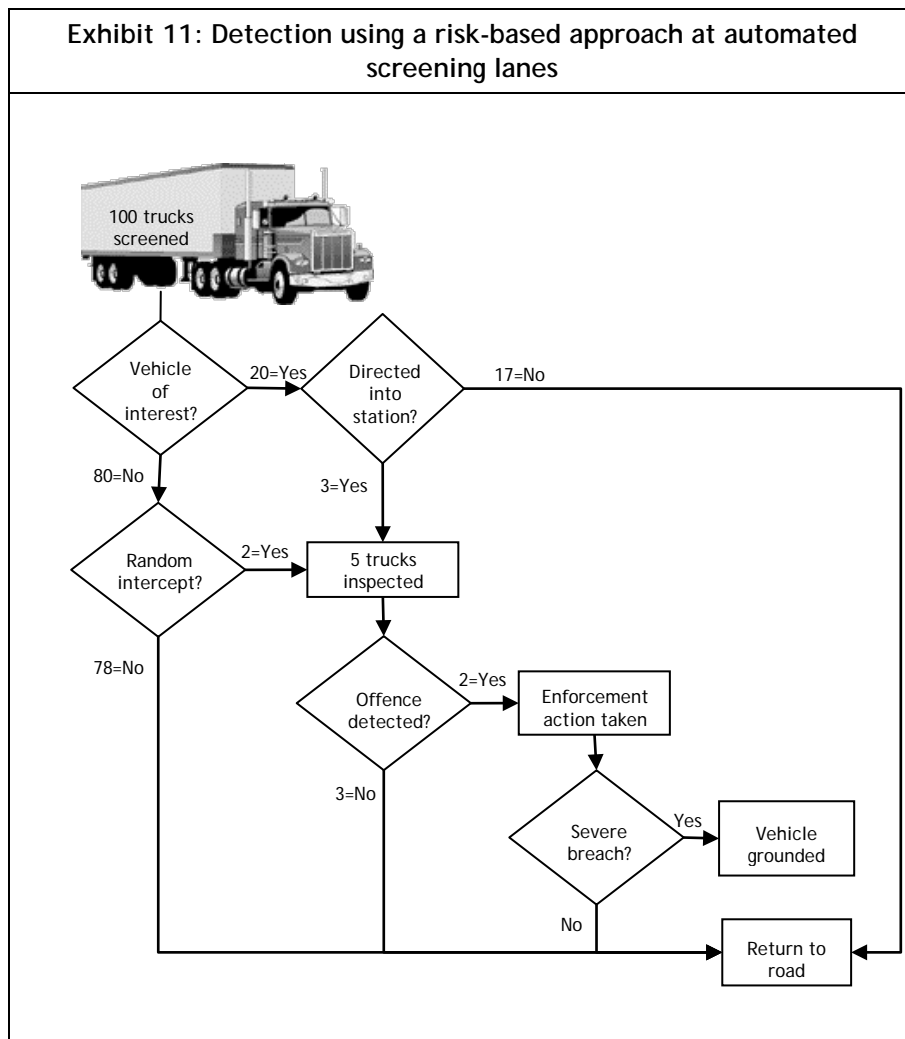
We also found that some of the RTA's checking stations are not as effective as others.

**Screening lanes should identify high risk heavy vehicles** In those checking stations where there is a screening lane, all heavy vehicles are checked against standard safety criteria. Screening lanes also incorporate Safe-T-Cam cameras to automatically check the RTA's records including registration and driving hours. Heavy vehicles that don't meet safety criteria are directed into the checking station for further inspection.

A heavy vehicle checking station with a screening lane will display the 'open' sign even when there are no Inspectors on duty. In this case the screening lane records the vehicles' details and directs it back onto the highway. Screening lanes are intended to operate 24 hours, seven days a week to record the movements of heavy vehicles. The RTA reports that it takes action where breaches are detected.

A series of risk-based templates which include important safety criteria have been developed for checking stations. Each criteria has been assigned a weighting which can be altered by the local manager.

As the screening system detects a vehicle the risk weightings are added up. The template then uses an overall tolerance to decide whether the heavy vehicle should be directed in. At busy periods, or when there are already heavy vehicles being inspected, higher tolerance levels are set to limit the number of vehicles selected, ensuring that at least the highest risk heavy vehicles are still inspected.



Source: The Audit Office of NSW

**Not all high risk vehicles are inspected**

The RTA reported that in 2007-08:

- around three million heavy vehicles passed through its screening lanes
- one in five heavy vehicles screened was identified as a vehicle of interest requiring further checks by an Inspector
- only one in seven of these vehicles of interest was inspected
- one in 20 heavy vehicles passing a heavy vehicle checking station was inspected whether or not they were a vehicle of interest, that is, some are random inspections.

The RTA reports that on average an offence is found in one in every three vehicles inspected. However, the results differed between checking stations with screening lanes. And in some cases, better results were seen in checking stations that do not have screening lanes but randomly select heavy vehicles for inspection.

Exhibit 12: Heavy vehicle checking stations 2007-08 offence to intercept rates		
Heavy vehicle checking station	Screening lane?	Percentage of inspected vehicles found with a breach
Bell	X	5.2%
Chinderah	X	47.2%
Kankool	X	34.0%
Marulan	✓	52.1%
Mt Boyce	✓	11.0%
Mr White North	✓	20.2%
Mt White South	✓	16.1%
Twelve Mile Creek	✓	17.2%

Source: The Roads and Traffic Authority of NSW

These differences may be due to checking stations altering the weightings of criteria in the screening template. For example, we found that the weighting for unregistered heavy vehicles varies from 95 to 100. Meaning that an unregistered heavy vehicle would be detected but may be allowed to continue without further checks at some checking stations.

**Recommendation** We recommend that the RTA standardise the weightings for serious road-safety criteria used in checking station screening lane templates by July 2009.

In addition, the capacity of a checking station is limited due to either space or the availability of an Inspector to complete an inspection. Where there is no spare capacity, heavy vehicles are redirected back onto the highway irrespective of their risk rating.

**Recommendation** We recommend that the RTA increase the risk rating of any heavy vehicle that is identified as high risk but not inspected to make sure that it will be inspected at the next available opportunity by July 2009.

## 2.6 Are automated detection devices effective?

**Our assessment** There has been a recent increase in the number of crashes involving speed. And nearly half of all fatal crashes involving heavy vehicles occur in high speed zones.

The RTA regularly surveys the speed of heavy vehicles travelling on major roads. Its 2008 survey shows that around 47 per cent of heavy vehicles exceed the 100 km per hour heavy vehicle speed limit, down from 52 per cent in its 2006 survey. The RTA's survey of all vehicles shows that around half exceed posted speed limits. Yet, the rate of infringements for speeding offences by heavy vehicles is three times lower than the rate for other vehicles.

There are possibly many reasons for this lower rate of speed infringements for heavy vehicles. One is that the RTA's fixed speed cameras located in 110 km per hour zones cannot distinguish a heavy vehicle from other vehicles and, therefore cannot differentiate those exceeding the heavy vehicle speed limit of 100 km per hour.

And while Safe-T-Cam is supposed to manage both speed and fatigue, we found that while it can detect speeding offences it is not used to enforce them.

Safe-T-Cam is used to detect breaches

The Safe-T-Cam system scans a heavy vehicle number plate as it passes and records the date, time and location. This record is used to compare further sightings of the heavy vehicle and to calculate travel times between two Safe-T-Cam sites. This enables the RTA to detect and enforce breaches of fatigue regulations as well as taking action against unregistered heavy vehicles.



Source: The Audit Office of NSW

In 2007-08, around 370,000 possible breaches were identified by Safe-T-Cam. In response, the RTA writes to the owner or operator and requests re records to either confirm or refute the alleged breach. The RTA advised that it confirmed an offence in around 30,000 or eight per cent of these matters.

And while Safe-T-Cam is supposed to manage both speed and fatigue, we found that while it can detect speeding offences it is not used to enforce them.

This is despite the RTA spending \$1.6 million in 2005 to upgrade the Safe-T-Cam system so that it can calculate the average speed between two sites.

Victoria currently uses point to point speed detection and enforcement for all vehicles on the Hume Freeway. Other countries that have point to point speed detection include the United Kingdom, Austria and the Netherlands.

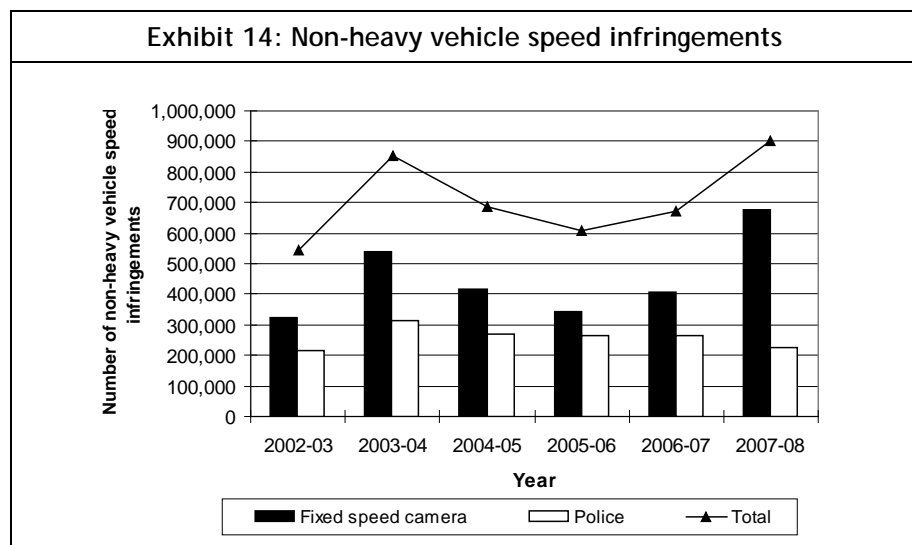
**Recommendation** We recommend that the RTA use Safe-T-Cam or better technology to enforce point to point speed offences against heavy vehicle drivers by July 2009.

**Accuracy of Safe-T-Cam should be improved** Safe-T-Cam uses optical character recognition software to read number plates and can be fine-tuned to maximise accuracy.

In examining the accuracy of Safe-T-Cam, we found that the RTA had not fine-tuned all Safe-T-Cam cameras to overcome site variations. This may mean that not all offences are detected.

**Recommendation** We recommend that the RTA routinely check the operation of all Safe-T-Cam cameras to maximise accuracy.

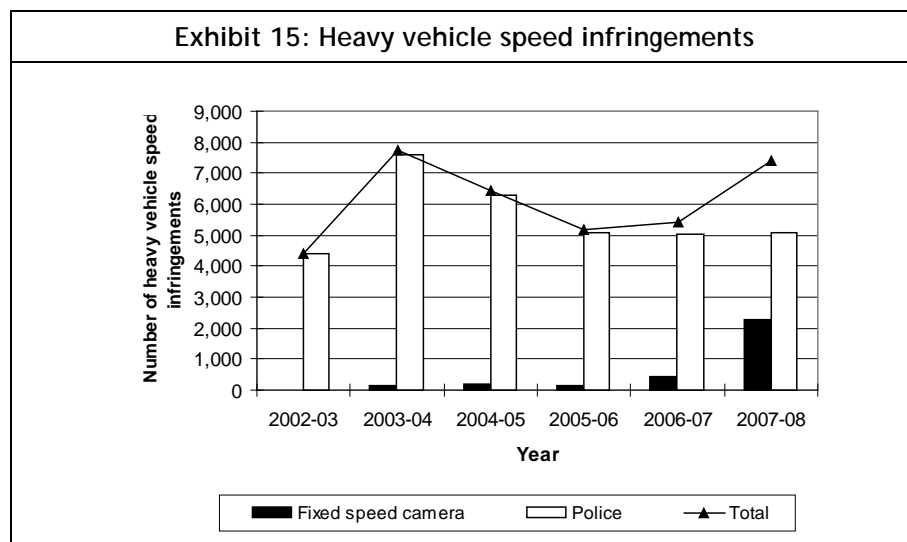
**Heavy vehicle speeding offences detected by fixed speed cameras are low** The RTA has installed around 160 fixed speed cameras in 135 locations across NSW to deter and detect speeding offences. On average, around 710,400 speeding infringements are issued to drivers of non-heavy vehicles each year. The majority of these are detected by the RTA's fixed speed cameras rather than issued by the NSW Police Force.



Source: State Debt Recovery Office

Note: The increase in speed infringements issued since May 2007 is mainly due to additional fixed speed cameras installed in school zones.

In contrast, only around 6,000 speeding infringements are issued to heavy vehicles drivers on average each year, the majority of these are issued by the NSW Police Force.



Source: State Debt Recovery Office

Note: The increase in speed infringements issued since May 2007 is mainly due to additional fixed speed cameras installed in school zones.

The maximum speed limit for a heavy vehicle is set at 100 km per hour. The RTA's speed surveys of heavy vehicles consistently show that around half exceed the 100 km per hour speed limit.

This behaviour is similar to drivers of all vehicles. Yet the rate of infringements for speeding offences involving heavy vehicles is three times lower than other drivers.

**Fixed speed cameras may not be detecting all heavy vehicle speeding offences**

There are possibly many reasons for the difference between the rate of infringements. One may be that heavy vehicle drivers are more familiar with the location of fixed speed camera than the rest of the population. Although this does not seem to explain the large variation.

Nonetheless, we found that the RTA's fixed speed cameras cannot detect heavy vehicles exceeding the 100 km per hour speed limit in high speed zones.

That is, fixed speed cameras located in 110 km per hour zones cannot distinguish a heavy vehicle from other vehicles and, therefore cannot enforce the different speed limit.

The RTA has the technology available to distinguish heavy vehicles from other traffic and allow it to detect and enforce different speed limits.

**Recommendation**

We recommend that the RTA ensure that its fixed speed cameras detect all speeding offences by heavy vehicle drivers by December 2009.

**Heavy vehicle  
speed limiters  
must be fitted**

Since July 1991, all heavy vehicles with a gross vehicle mass (GVM) of over 12 tonnes must have had their speed limited to 100 km per hour. This can be achieved in many ways including add-on devices, or integrated with engine management systems, generally referred to as speed limiters.

When a heavy vehicle is caught speeding over 100 km per hour, in addition to a speeding offence recorded against the driver, the operator in theory can be charged with a speed limiter offence.

However, Inspectors and the NSW Police Force report that it is difficult to prove that a speed limiter is not working, particularly if the speeding offence occurred as the vehicle was travelling downhill.

Recent changes to legislation now means that where a heavy vehicle is caught travelling at 115 km per hour or more on identified road segments, a speed limiter offence can be proven.





### 3 How well does the RTA enforce heavy vehicle safety regulations?

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**At a glance**

**The key question we wanted to answer was:**

How well does the RTA enforce heavy vehicle safety regulations?

**Our assessment:**

The aim of enforcing heavy vehicle safety regulations is to change behaviour in order to reduce the number and severity of crashes. The RTA enforces the regulations by penalising the driver, the owner of the vehicle, and where appropriate, the operator, when it detects a breach.

We found that on-road enforcement can be effective in reducing the number and severity of crashes involving heavy vehicles, although the RTA has achieved mixed results.

For example, the number of crashes involving heavy vehicles has decreased by 11 per cent from 2002 to 2006, but increased by more than five per cent from 2006 to 2007. The number of people killed has fallen by nearly 29 per cent since 2002. However, when compared to all fatal road crashes, the percentage involving heavy vehicles has increased from 16 per cent in 2003 to nearly 22 per cent in 2007.

The RTA's focus on annual registration inspections has resulted in a low rate of crashes due to vehicle condition. In addition, a tripling of infringements for fatigue offences since 2002-03 has led to a reduction in the number of crashes and deaths due to fatigue.

Other factors that may have contributed to these results include changes to the way enforcement action is taken over the last ten years. Rather than targeting only the driver, regulations now hold owners and operators responsible for ensuring both their drivers and vehicles comply.

There has been a recent increase in the number of crashes involving speed, which we found corresponded to a decline in the number of infringements issued for speeding.

The decline in speed infringements may be due to either increased compliance by drivers or decreased detection. The RTA's role in detecting speed offences is discussed in more detail in Section 2.6.

Enforcement is most likely to change behaviour if it is consistent and matches the severity of the offence. The RTA has a range of enforcement options available and in some cases it can apply further penalties where the offence is repeated.

We found that the RTA does not apply enforcement action consistently. And some minor breaches may be better dealt with using formal warnings which are currently not available.

Just prior to the fatal crash at Mooney Mooney in 2004, the RTA had failed to detect and stop the unregistered semi-trailer that caused the crash. The RTA has since made a number of changes to improve how it detects and stops an unregistered heavy vehicle.

We recognise that the RTA is unable to prevent all crashes. However, we consider that the RTA could do more to improve its ability to detect and respond to high risk heavy vehicles travelling on our roads.

### 3.1 What is the purpose of enforcement?

Both the RTA and the NSW Police Force are responsible for enforcing heavy vehicle safety regulations. The aim of enforcement is to change behaviour in order to reduce the number and severity of crashes involving heavy vehicles.

Enforcement will lead to changed behaviour where:

- breaches are detected
- penalties are consistently applied
- the severity of the penalty matches the breach
- repeated offences attract additional penalties.

As indicated earlier, the RTA is adopting the national heavy vehicle safety framework.

Fundamental to this framework has been the enactment of Chain of Responsibility legislation. This enables the RTA to take action against parties in the supply chain, such as consignors and consignees, if it is proven that they have put undue pressure on a driver or operator to overload, speed or exceed working time limits.

### 3.2 Does the RTA have an adequate range of enforcement options?

**Our assessment**

The RTA has a range of enforcement options available and in some cases it can apply further penalties where the offence is repeated.

**Enforcement options deal with repeat offenders**

A variety of enforcement options are available. The RTA can increase the penalty to match the severity of the breach as well as take additional action when breaches are repeated.

For example, if multiple speeding offences are recorded against a vehicle, the registration can be suspended under the national 'three strikes and you are out' scheme.

All other offences are recorded to determine the risk rating of the operator which may result in targeted enforcement action, audits or investigations by the RTA.

Exhibit 16: Enforcement options		
Type of breach	Driver penalty	Owner, operator or other party penalties
Speeding	<ul style="list-style-type: none"> <li>▪ Fine and demerit points</li> <li>▪ Licence suspended or cancelled</li> </ul>	<ul style="list-style-type: none"> <li>▪ Court attendance notice</li> <li>▪ A strike is recorded</li> </ul>
Driving hours	<ul style="list-style-type: none"> <li>▪ Fine and demerit points</li> <li>▪ The driver is directed to stop, take rest, or may be grounded</li> <li>▪ Court attendance notice</li> </ul>	<ul style="list-style-type: none"> <li>▪ Court attendance notice</li> <li>▪ A strike is recorded (Safe-T-Cam only)</li> </ul>
Fail to enter checking station	<ul style="list-style-type: none"> <li>▪ Court attendance notice</li> </ul>	<ul style="list-style-type: none"> <li>▪ No penalty</li> </ul>
Driving an unregistered vehicle	<ul style="list-style-type: none"> <li>▪ Fine or court attendance notice</li> <li>▪ Demerit points</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fine or court attendance notice</li> <li>▪ A strike is recorded</li> </ul>
Vehicle roadworthiness	<ul style="list-style-type: none"> <li>▪ Fine or court attendance notice</li> </ul>	<ul style="list-style-type: none"> <li>▪ Formal warning or defect notice</li> <li>▪ Fine or court attendance notice</li> <li>▪ If defect is severe the vehicle will be grounded</li> </ul>
Load - mass, dimension, restraint	<ul style="list-style-type: none"> <li>▪ Fine</li> <li>▪ Court attendance notice</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fine</li> <li>▪ Court attendance notice</li> <li>▪ If severe the vehicle will be grounded.</li> </ul>

Source: The Roads and Traffic Authority of NSW

Note: A strike is recorded against the heavy vehicle registration when the driver is fined for exceeding the speed limit by 15 km per hour or more.

During the course of this audit, the RTA suspended its Four Strikes scheme for Safe-T-Cam detected breaches. The RTA advised that this scheme is currently under review to take into account the new fatigue laws which came into effect in September 2008.

### 3.3 Is consistent enforcement action taken?

#### Our assessment

We found that the RTA does not apply enforcement action consistently. And some minor breaches may be better dealt with using formal warnings which are currently not available.

#### Enforcement action is not consistent

The RTA has policies and procedures to guide the decisions made by Inspectors when a breach is detected.

Yet we found inconsistencies in the enforcement action taken by Inspectors, particularly in regard to minor breaches. For example, some Inspectors would issue a penalty notice for failing to date a work diary sheet, while others would inform drivers of correct procedures without recording any action against the driver or operator.

Currently formal warnings are only used in regard to minor vehicle defects which do not pose a safety risk. They are not available for other minor breaches.

Formal warnings can help educate drivers and operators about best practice. It also ensures a record is retained of the breach.

**Recommendation** We recommend that the RTA introduce formal warnings for some minor breaches of regulations, including escalation options for repeating the same offence, by December 2009.

### **3.4 Is on-road enforcement effective in reducing the number and severity of crashes involving heavy vehicles?**

**Our assessment** We found that on-road enforcement can be effective in reducing the number and severity of crashes involving heavy vehicles, although the RTA has achieved mixed results.

There have been overall decreases in the number of crashes and people killed and injured in crashes involving heavy vehicles between 2002 and 2007. However, the number of crashes and the number of people injured have increased between 2006 and 2007.

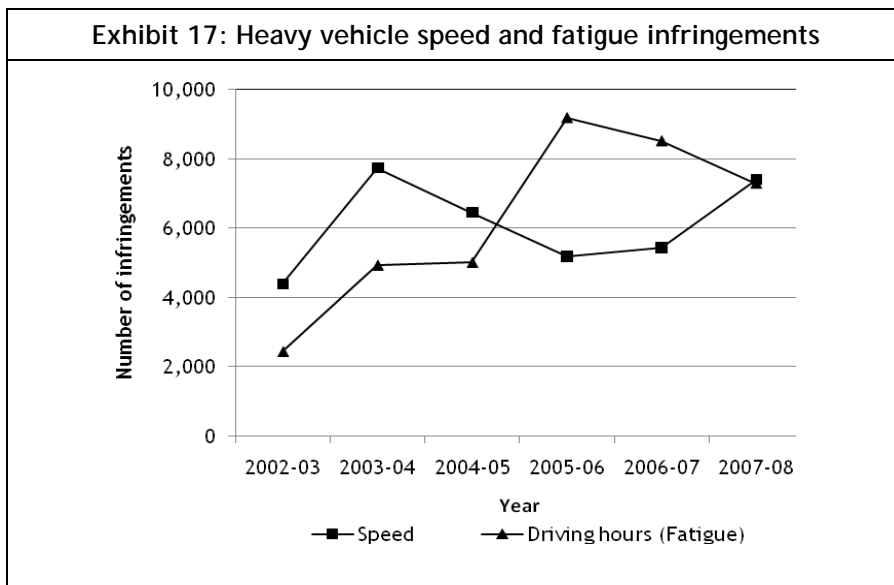
For example, the number of crashes involving heavy vehicles has decreased by 11 per cent from 2002 to 2006, but increased by more than five per cent from 2006 to 2007.

And in 2007, heavy vehicles were involved in nearly 22 per cent of all motor vehicle crashes where someone is killed, which has increased from around 16 per cent in 2003. This is despite the number of people killed in crashes involving heavy vehicles falling by nearly 29 per cent since 2002 compared to 21 per cent for other crashes.

The RTA's focus on annual registration inspections has resulted in a low rate of crashes due to vehicle condition. In addition, a tripling of infringements for fatigue offences since 2002-03 has led to a reduction in the number of crashes and deaths due to fatigue. However, there has been a recent increase in the number of crashes involving speed, which we found corresponded to a decline in the number of infringements issued for speeding.

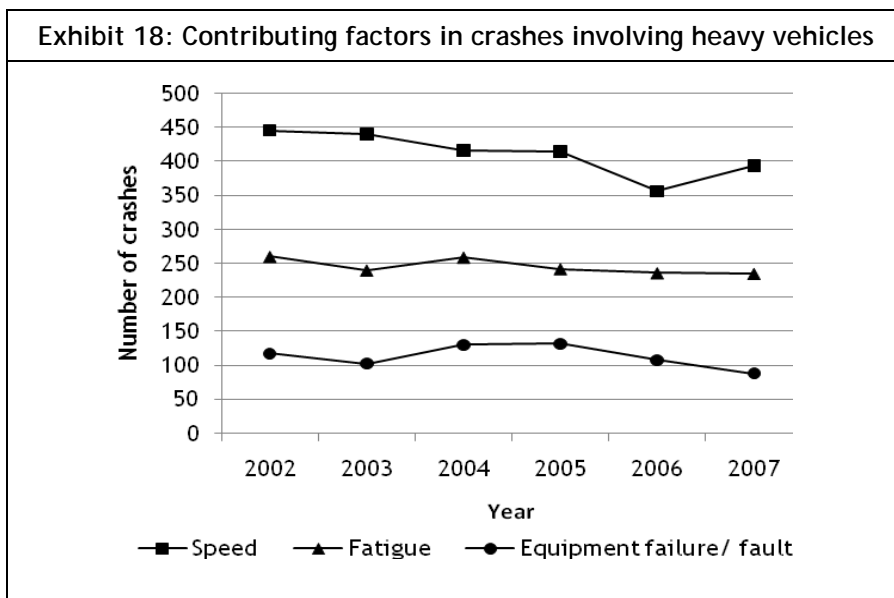
**Enforcement can affect crash rates** The effectiveness of enforcement can be measured by a reduction in the number and severity of crashes involving heavy vehicles.

While it is difficult to draw a direct link between enforcement action and a reduction in crashes, enforcement action against particular causes such as speed or fatigue, can have an impact.



Source: State Debt Recovery Office

Over the last five years there has been an overall increase in the number of infringements issued for breaches of speed and fatigue regulations. Between 2003-04 and 2005-06 there was a decline in the number of infringements issued for speeding. However, the increase since 2006-07 is due to additional fixed speed cameras in school zones.



Source: Roads and Traffic Authority of NSW

**More crashes caused by speed**

In 2007, nine per cent of fatal crashes involving heavy vehicles were due to speed. The number of crashes caused by speed has increased by ten per cent from 357 in 2006 to 394 in 2007. This accounts for the overall increase in crashes involving heavy vehicles noted in Section 1.1.

Between 2002 and 2007 an average of 20 per cent of crashes involving heavy vehicles, and nearly 50 per cent of fatal crashes involving heavy vehicles occurred in high speed zones. This compares to 13 per cent and 40 per cent respectively for all vehicle crashes and fatal crashes.

**Less crashes caused by fatigue**

In 2007, 18 per cent of fatal crashes involving heavy vehicles were due to fatigue. This is down from its highest level over the last six years of 27 per cent in 2004.

The recent decrease in fatigue related crashes corresponds to a significant increase in infringements issued for heavy vehicle fatigue offences between 2002-03 and 2005-06. This positive effect on fatigue related crashes has been sustained even though fatigue infringements have been decreasing since 2005-06,

Over the last two years the RTA reports that special road-side operations targeting fatigue, along with the Chain of Responsibility legislation, may have also had an impact on fatigue related crashes.

**Less crashes caused by unroadworthy heavy vehicles**

Crashes involving heavy vehicles caused by equipment fault or failure have been decreasing since 2005. Equipment fault or failure is now reported as the cause in less than three per cent of crashes. In 2007, only four people died in crashes involving heavy vehicles where equipment fault or failure was the cause.

These results suggest that the annual inspection program has had a positive impact.

In 2007-08, 56 per cent of NSW registered heavy vehicles were found to be defect free at the annual inspection. In addition, only around three per cent had major defects compared to those registered interstate which had over five per cent.

**3.5 Does the RTA use the results of investigations to improve enforcement?**

**Our assessment**

Just prior to the fatal crash at Mooney Mooney in 2004, the RTA had failed to detect and stop the unregistered semi-trailer that caused the crash. The RTA has since made a number of changes to improve how it detects and stops an unregistered heavy vehicle.

We recognise that the RTA is unable to prevent all crashes. However, we consider that the RTA could do more to improve its ability to detect and respond to high risk, heavy vehicles travelling on our roads.

**Reviewing the RTA's response to this crash**

When a major incident occurs, the RTA should investigate and address any system or operational weaknesses that are identified.

We examined the RTA's response to the crash that occurred on the F3 freeway at Mooney Mooney in 2004.

**Case study**

On 22 October 2004 a semi-trailer loaded with 18 tonnes of building material crashed into 34 vehicles travelling north on the F3 freeway at Mooney Mooney. One woman died and two people were seriously injured.

The semi-trailer had been unregistered for more than three years, was displaying false number plates and was uninsured.

The semi-trailer frequently travelled on the F3 freeway between Sydney and Newcastle. In fact the truck was recorded travelling along the F3 freeway 36 times by Safe-T-Cam in the previous 12 months.

On 13 September 2004, the truck passed the Mt White northbound heavy vehicle checking station screening lane and was directed to enter the station for inspection. The truck failed to enter.

The Inspector on duty checked records and found that the truck had false number plates. He immediately contacted the NSW Police Force to advise that the vehicle was proceeding north on the F3 freeway. The Inspector also entered an alert on the RTA's system, in case the truck was pulled-over by another Inspector.

On 5 October 2004 the RTA wrote to the last recorded operator who owned the number plates to try to identify the truck driver. According to its practices, the RTA waits for 21 days before commencing this action.

The truck was sighted by Safe-T-Cam another seven times between the 13 September 2004 and the crash on 22 October 2004. At no time was the truck pulled over by the RTA or the NSW Police Force.

On 22 October 2004, the truck passed through the Mt White northbound heavy vehicle checking station screening lane. The truck was not directed in for inspection, despite the alert on the system, as it met its required weight limit. The crash occurred a short time later.

The cause of the crash was brake failure. The driver admitted that the brakes were defective. The driver pleaded guilty and was convicted of one count of manslaughter and two counts of grievous bodily harm. He is currently serving a minimum sentence of eight years in gaol.



The case study highlights a number of weaknesses in the RTA's approach to on-road enforcement, including :

- that the truck was not detected as being unregistered by Safe-T-Cam
- the RTA waited 21 days before trying to identify the truck driver or operator
- the screening lane at Mt White northbound only checked weight but no other RTA records.

While the RTA has changed some practices in response to the crash investigation, we consider some problems have not been fully addressed.

Firstly, in regard to failing to detect that the truck was unregistered, Safe-T-Cam checked the registration against current registrations and those that had expired in the previous 12 months. Since the truck had number plates which had expired three years ago, Safe-T-Cam failed to get a match.

Safe-T-Cam now checks registrations that have been expired for a number of years. However, the RTA does not take any action where registrations have expired outside this timeframe or where it fails to get a match due to false number plates.

**Recommendation** We recommend that the RTA ensure that it can identify all heavy vehicles travelling on NSW roads regardless of registration status by December 2009.

Secondly, in regard to the RTA waiting 21 days before trying to identify the driver or operator that may have breached heavy vehicle safety regulations, there has been no change in practice.

**Recommendation** We recommend that the RTA take immediate action to identify drivers or operators who may have committed a safety breach.

Finally, in regard to the screening lane at the Mt White northbound checking station, the RTA accelerated its planned upgrade to install Safe-T-Cam in the screening lane. This was completed in May 2005. The RTA also built the southbound Mt White heavy vehicle checking station which opened in June 2007.

We recognise that the RTA is unable to prevent all crashes. However, we consider that the RTA could do more to improve its ability to detect and respond to high risk heavy vehicles travelling on our roads.



## Appendices

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## Appendix 1 Location of the RTA's heavy vehicle on-road enforcement sites



Source: Roads and Traffic Authority of NSW October 2003

Note: Safe-T-Cam sites at Kew and Wyong have been removed. New Safe-T-Cam sites not shown are at Mt Boyce and Mt White heavy vehicle checking stations, and at Jones Island and Clothiers Creek on the Pacific Highway.

## Appendix 2 Exhibit data

Exhibit 1: Heavy vehicle crash and injury trends		
	Number of crashes	Number of people injured
2002	3244	1777
2003	3249	1775
2004	3317	1899
2005	3081	1693
2006	2878	1558
2007	3032	1658

Source: Roads and Traffic Authority of NSW

Exhibit 2: Percentage of fatal crashes involving heavy vehicles			
	Number of fatal crashes involving heavy vehicles	Number of fatal crashes involving all vehicles	
2002	121	501	24.2%
2003	79	483	16.4%
2004	95	458	20.7%
2005	83	459	18.1%
2006	87	449	19.4%
2007	88	405	21.7%

Source: Roads and Traffic Authority of NSW

Exhibit 3: People killed in crashes involving heavy vehicles	
2002	133
2003	96
2004	109
2005	96
2006	105
2007	95

Source: Roads and Traffic Authority of NSW

Exhibit 10: Use of Inspectors' time				
	Shifts worked as a percentage of all shifts worked			
	Road-side intercepts	Heavy vehicle checking station	Annual registration inspections	Others
2005-06	28.3%	22.6%	27.0%	22.1%
2006-07	24.2%	21.9%	26.6%	27.2%
2007-08	23.6%	23.5%	27.8%	25.1%

Source: Roads and Traffic Authority of NSW

Exhibit 14: Non-heavy vehicle speed infringements						
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Fixed speed camera	325,175	539,166	418,006	341,377	405,217	675,726
NSW Police Force	217,898	312,039	269,463	266,078	265,028	227,302
<b>Total</b>	<b>543,073</b>	<b>851,205</b>	<b>687,469</b>	<b>607,455</b>	<b>670,245</b>	<b>903,028</b>

Source: State Debt Recovery Office

Note: The sharp rise in speed infringements issued since May 2007 is mainly due to more school zone fixed speed cameras.

Exhibit 15: Heavy vehicle speed infringements						
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Fixed speed camera	17	146	183	134	416	2,297
NSW Police Force	4,388	7,583	6,275	5,059	5,024	5,103
<b>Total</b>	<b>4,405</b>	<b>7,729</b>	<b>6,458</b>	<b>5,193</b>	<b>5,440</b>	<b>7,400</b>

Source: State Debt Recovery Office

Exhibit 17: Heavy vehicle speed and fatigue infringements						
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Speed	4,405	7,729	6,458	5,193	5,440	7,400
Driving hours (fatigue)	2,446	4,938	5,017	9,196	8,530	7,304

Source: State Debt Recovery Office

Exhibit 18: Contributing factors in crashes involving heavy vehicles				
	Number of crashes involving heavy vehicles	Speed involved	Fatigue involved	Equipment failure/fault involved
2002	3244	446	260	118
2003	3249	441	240	102
2004	3317	417	259	130
2005	3081	415	242	132
2006	2878	357	236	108
2007	3032	394	235	88

Source: Roads and Traffic Authority of NSW

## Appendix 3 About the audit

**Audit Objective** To assess how well the Roads and Traffic Authority of NSW (RTA) manages on-road enforcement to reduce the number and severity of crashes involving heavy vehicles.

**Lines of Inquiry** In reaching our opinion against the audit objective, we sought to answer the following lines of inquiry:

1. How well does the RTA deter and detect breaches of heavy vehicle safety regulations?
2. How well does the RTA enforce heavy vehicle safety regulations?

**Audit Criteria** In answering the lines of inquiry, we used the following audit criteria (the 'what should be') to judge performance. We based these standards on our research of current thinking and guidance on better practice. They have been discussed, and wherever possible, agreed with those we are auditing.

For line of inquiry 1, we assessed if the RTA's:

- on-road enforcement activities are in the right places to maximise deterrence and detection
- on-road enforcement activities are operating at the right times to maximise deterrence and detection
- on-road enforcement activities detect all breaches they are designed to detect.

For line of inquiry 2, we assessed if the RTA:

- takes consistent enforcement action when breaches of heavy vehicle safety regulations are detected
- on-road enforcement activities are effective in reducing the number and severity of crashes involving heavy vehicles.

**Audit scope** In this audit we examined on-road enforcement activities such as road-side inspections, Heavy Vehicle Checking Stations, Safe-T-Cam cameras, mobile patrols and fixed speed cameras. We examined heavy vehicle safety regulations relating to speed, vehicle roadworthiness and driver fatigue.

We reviewed available performance data for the last 6 years.

This audit did not examine:

- the impact of road design and condition on safety
- the national Compliance and Enforcement (chain of responsibility) legislation
- regulation of vehicle design standards, although enforcement of speed limiter devices is within scope
- the effectiveness of the RTA's driver education programs
- the RTA's approach to setting speed limits
- the RTA's crash investigation practices, although we did look at the fatal crash on the F3 freeway at Mooney Mooney in 2004.

**Audit approach**

We acquired subject matter expertise by:

- interviewing industry representatives such as the Australian Transport Association (ATA), Transport Workers Union, and operators
- interviews and examination of relevant documents including guidelines, reports, studies, strategies and reviews relating to the project
- discussions with relevant staff as required, including staff of supporting agencies
- discussions with representatives as required of key stakeholders such as insurance, driver and operator representatives
- engaging a suitable consultant to provide relevant research expertise
- comparisons where appropriate with other States and countries
- discussions with other audit offices, including the West Australian Audit Office
- government and best practice guidelines relevant to the audit
- reviewing corporate planning and performance reporting documents
- analysing performance data
- analysing crash statistics and infringement data.

We also researched road safety in other jurisdictions to identify best practice examples and issues that may impact on the effectiveness of deterrence, detection and enforcement activities. We examined the following jurisdictions:

- all Australian States and Territories
- New Zealand
- United Kingdom
- Canada
- United States (Various states).

We visited all of the RTA's six regions in NSW. They were:

- Southern region
- Sydney region
- Northern region
- Hunter region
- Western region
- South Western region

We also visited local Police to get their views on issues regarding heavy vehicle safety and enforcement of breaches.

Professor Ann Williamson, University of New South Wales, provided advice on reports and other material produced during the audit.



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<b>Audit selection</b>	We use a strategic approach to selecting performance audits which balances our performance audit program to reflect issues of interest to Parliament and the community. Details of our approach to selecting topics and our forward program are available on our website.
<b>Audit methodology</b>	<p>Our performance audit methodology is designed to satisfy Australian Audit Standards AUS 806 and 808 on performance auditing, and to reflect current thinking on performance auditing practices. Performance audits commencing on or after 1 January 2009 comply with the Standard on Assurance Engagements ASAE3500 Performance Engagements.</p> <p>We produce our audits under a quality management system certified to International Standard ISO 9001. Our processes have also been designed to comply with the auditing requirements specified in the <i>Public Finance and Audit Act 1983</i>.</p>
<b>Acknowledgements</b>	We gratefully acknowledge the co-operation and assistance provided by the Roads and Traffic Authority of NSW. In particular we wish to thank our liaison officers Paul Duignan, Alice Ma and Philip Halton, and staff who participated in interviews, assisted with field work or provided other material relevant to the audit. We will also like to thank the NSW Police Force, the Office of State Revenue, and the industry representatives who we interviewed.
<b>Audit team</b>	Our team leader for the performance audit was Giulia Vitetta, who was assisted by Suzanne Mousallem. Jane Tebbatt provided direction and quality assurance.
<b>Audit cost</b>	Including staff costs, printing costs and overheads, the estimated cost of the audit is \$530,000.

## Appendix 4      Glossary

Breach	An act that is contrary to a law or regulation, such as driving in excess of the posted speed limit.
Fatigue	Fatigue is a weariness or tiredness from bodily or mental exertion. It is caused by doing the same task for a prolonged time, the time of day, and the time that a person is awake or amount of sleep they have had. Fatigue leads to slower reaction times and increased chance of losing control of the vehicle or falling asleep while driving.
Gross Vehicle Mass (GVM)	GVM is the maximum loaded mass for a vehicle and is specified by the vehicle manufacturer. The GVM is usually displayed on the compliance or identification plate attached to the vehicle
Heavy Vehicle	Any vehicle with a GVM of 4.5 tonnes or more. They include rigid and articulated trucks and large buses.
Heavy vehicle checking station	The RTA's permanent, purpose built facilities which are located on major highways in NSW. There are seven checking stations in NSW. Heavy vehicles over eight tonne GVM must enter all open checking stations that they pass on their route.
Offence	A detected breach that is proven by a an authorised party, such as the RTA or the NSW Police Force.
On-road enforcement site	A road-side inspection area suitable for the RTA to direct heavy vehicles to pull into and conduct compliance inspections.
Operator	A company that leases a heavy vehicle from the vehicle owner to conduct its business.
Screening lane	<p>Four heavy vehicle checking stations: Marulan, Mt Boyce, Mt White and Twelve Mile Creek have screening lanes. The heavy vehicle is weighed as it moves through the lane. If it is within defined weight limits, it is directed to continue its journey without stopping.</p> <p>Automated screening lanes: The screening lanes at the Marulan, Mt White and Twelve Mile Creek are automated. This means there is also Safe-T-Cam cameras installed and additional load dimension sensors. This allows the RTA to check the heavy vehicle against internal systems including: Safe-T-Cam (driving hours), DRIVES (registration status) and Truckscan (previous offences or uncleared defects).</p> <p>DRIVES stands for the Driver Registration Information Vehicle Exchange System. This is the RTA's central computer record of all NSW driver licencing and vehicle registration information.</p>

## Performance Audits by the Audit Office of New South Wales

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## Performance Auditing

### What are performance audits?

Performance audits determine whether an agency is carrying out its activities effectively, and doing so economically and efficiently and in compliance with all relevant laws.

Performance audits may review a government program, all or part of a government agency or consider particular issues which affect the whole public sector.

Where appropriate, performance audits make recommendations for improvements.

If you wish to find out what performance audits are currently in progress, visit our website at [www.audit.nsw.gov.au](http://www.audit.nsw.gov.au).

### Why do we conduct performance audits?

Performance audits provide independent assurance to Parliament and the public that government funds are being spent efficiently and effectively, and in accordance with the law.

Performance audits seek to improve the efficiency and effectiveness of government agencies so that the community receives value for money from government services.

Performance audits also assist the accountability process by holding managers to account for agency performance.

### What are the phases in performance auditing?

Performance audits have three key phases: planning, fieldwork and report writing.

During the planning phase, the audit team will develop audit criteria and define the audit field work.

At the completion of field work we will meet with agency management to discuss all significant matters arising out of the audit. Following this, we will prepare a draft performance audit report.

We meet with agency management to check that facts presented in the report are accurate and that recommendations are practical and appropriate. Following this, a formal draft report is provided to the CEO for comment. The relevant Minister is also provided with a copy of the final report. The final report, which is tabled in

Parliament, includes any comment made by the CEO on the conclusion and the recommendations of the audit.

Depending on the scope, performance audits can take several months to complete.

Copies of our performance audit reports can be obtained from our website or by contacting our Office.

### How do we measure an agency's performance?

During the planning phase, the team develops the audit criteria. These are standards of performance against which the agency or program is assessed. Criteria may be based on best practice, government targets, benchmarks, or published guidelines.

### Do we check to see if recommendations have been implemented?

Every few years we conduct a follow-up audit. These follow-up audits look at the extent to which action has been taken to address issues or recommendations agreed to in an earlier performance audit.

The Public Accounts Committee (PAC) may also conduct reviews or hold inquiries into matters raised in performance audit reports. Agencies are also requested to report actions taken against each recommendation in their annual report.

### Who audits the auditors?

Our performance audits are subject to internal and external quality reviews against relevant Australian and international standards. This includes ongoing independent certification of our ISO 9001 quality management system.

The PAC is also responsible for overseeing the activities of the Audit Office and conducts a review of our operations every three years.

### Who pays for performance audits?

No fee is charged for performance audits. Our performance audit services are funded by the NSW Parliament and from internal sources.

### Further information

Further information can be obtained from our website [www.audit.nsw.gov.au](http://www.audit.nsw.gov.au) or by contacting us on 9275 7277.

## Performance Audit Reports

No	Agency or Issues Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
187	Roads and Traffic Authority of NSW	<i>Improving Road Safety - Heavy Vehicles</i>	May 2009
186	Grants	<i>Grants Administration</i>	6 May 2009
185	Forests NSW	<i>Sustaining Native Forest Operations</i>	29 April 2009
184	NSW Police Force	<i>Managing Injured Police</i>	10 December 2008
183	Department of Education and Training	<i>Improving Literacy and Numeracy in NSW Public Schools</i>	22 October 2008
182	Department of Health	<i>Delivering Health Care out of Hospitals</i>	24 September 2008
181	Department of Environment and Climate Change	<i>Recycling and Reuse of Waste in the NSW Public Sector</i>	11 June 2008
180	Follow-up of 2003 Performance Audit	<i>Protecting Our Rivers</i>	21 May 2008
179	NSW Office of Liquor, Gaming and Racing; NSW Police Force	<i>Working with Hotels and Clubs to reduce alcohol-related crime</i>	23 April 2008
178	Greyhound and Harness Racing Regulatory Authority	<i>Managing the Amalgamation of the Greyhound and Harness Racing Regulatory Authority</i>	3 April 2008
177	Office of the Director of Public Prosecutions	<i>Efficiency of the Office of the Director of Public Prosecutions</i>	26 March 2008
176*	Better Practice Guide	<i>Implementing Successful Amalgamations</i>	5 March 2008
175	Department of Commerce Department of Primary Industries	<i>Managing Departmental Amalgamations</i>	5 March 2008
174	Department of Education and Training	<i>Ageing workforce - Teachers</i>	13 February 2008
173	NSW Police Force	<i>Police Rostering</i>	5 December 2007
172	Department of Primary Industries	<i>Improving Efficiency of Irrigation Water Use on Farms</i>	21 November 2007
171	Department of Premier and Cabinet Department of Commerce	<i>Government Advertising</i>	29 August 2007
170	RailCorp	<i>Signal Failures on the Metropolitan Rail Network</i>	15 August 2007
169	NSW Police Force	<i>Dealing with Household Burglaries</i>	27 June 2007
168	Ministry of Transport	<i>Connecting with Public Transport</i>	6 June 2007
167	Follow-up of 2001 Performance Audit: Ambulance Service of New South Wales	<i>Readiness to Respond</i>	6 June 2007

No	Agency or Issues Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
166	Follow-up of Performance Audit Department of Education and Training	<i>Using Computers in Schools for Teaching and Learning</i>	9 May 2007
165	Homelessness	<i>Responding to Homelessness</i>	2 May 2007
164	Department of Juvenile Justice NSW Police Force	<i>Addressing the Needs of Young Offenders</i>	28 March 2007
163	Legal Aid Commission of NSW	<i>Distributing Legal Aid in New South Wales</i>	13 December 2006
162	NSW Health	<i>Attracting, Retaining and Managing Nurses in Hospitals</i>	12 December 2006
161	Follow-up of 2003 Performance Audit	<i>The Police Assistance Line</i>	6 December 2006
160	NSW Health	<i>Helping Older People Access a Residential Aged Care Facility</i>	5 December 2006
159	NSW Health	<i>Major Infectious Disease Outbreaks: Readiness to Respond</i>	22 November 2006
158	Department of Education and Training	<i>Educating Primary School Students with Disabilities</i>	6 September 2006
157	Roads and Traffic Authority	<i>Condition of State Roads</i>	16 August 2006
156*	Fraud Control	<i>Fraud Control Improvement Kit: Meeting Your Fraud Control Obligations</i>	20 July 2006
155	Follow-up of 2002 Performance Audit	<i>Regulating the Clearing of Native Vegetation</i>	19 July 2006
154	Follow-up of 2002 Performance Audit	<i>Managing Sick Leave in NSW Police and the Department of Corrective Services</i>	June 2006
153	Performance Information	<i>Agency Use of Performance Information to Manage Services</i>	21 June 2006
152	Roads and Traffic Authority	<i>The Cross City Tunnel Project</i>	31 May 2006
151	Department of Corrective Services	<i>Prisoner Rehabilitation</i>	24 May 2006
150	Follow-up of 2000 Performance Audit	<i>Fare Evasion on Public Transport</i>	26 April 2006
149	Agency Collaboration	<i>Agencies Working Together to Improve Services</i>	22 March 2006

\* Better Practice Guides

**Performance audits on our website**

A list of performance audits tabled or published since March 1997, as well as those currently in progress, can be found on our website [www.audit.nsw.gov.au](http://www.audit.nsw.gov.au).

If you have any problems accessing these reports, or are seeking older reports, please contact our Office Services Manager on (02) 9275 7116.