

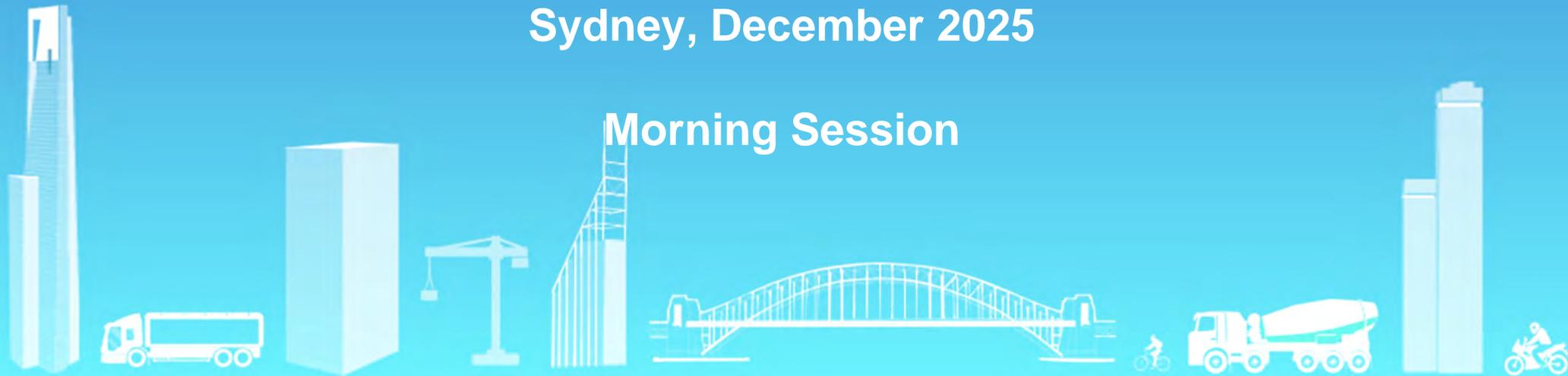


# CLOCS-A Safety Forum

Vision Zero in Construction Logistics

Sydney, December 2025

Morning Session





# CLOCS-A Safety Forum

Vision Zero in Construction Logistics

Presenter:

Dr KIM HASSALL

CILT-Australia

8<sup>th</sup> December 2025



# Background:

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Background to the Construction Logistics Community Safety Standard

## History:

CLOCS emerged out of a requirement by Transport for London following the 2012 Olympics as a Heavy construction truck safety standard.

3

## WHY?

The significant infrastructure task resulted in a very significant number of Vulnerable Road User deaths VRUs



# CLOCS Comes to Australia – VRUs are the focus

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- The idea for CLOCS was first raised in Australia in 2015
- Through a Round 3 Heavy Vehicle Safety Initiative grant the NRSP began the first steps in 2018/19 to develop the Australian version of CLOCS which would become CLOCS-A.
- Four committees were developed:
  - ❖ Logistics
  - ❖ Driver
  - ❖ Vehicle Technical, and
  - ❖ Communications

# The CLOCS-A Standard Emerges

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- The CLOCS-A standard was completed in early 2023
- In MAY 2023, expressions of interest were sought to host the rollout of CLOCS-A standard.
- The hosting was awarded to the Chartered Institute of Logistics and Transport Australia (CILTA) and in July 2023 the process began.

**Who is CILTA?**



# CILT Global Family - Territories/Branches: By end 2022 – 43 nations will have branches



The Chartered  
Institute of Logistics  
and Transport

## Countries in the CILT World



The Chartered  
Institute of Logistics  
and Transport

# CILTA 90 years old

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## Australia Chapter founded in 1935

**International Charter:** To Provide Continuing Professional Development for all people in the T&L Sector

7

# What does CILTA do?

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Many things ...

- Audit and levy Certification for tertiary courses against international benchmarks
- Audit and levy recognition on short course
- Provide a short course directory  $\approx$  100 courses
- Develop specific industry Micro-credentials
- Serve on industry and academic review boards for Universities and TAFE colleges
- Serve on Industry Working groups eg, NRTC, OECD, Standards Australia, CASA DG's etc.

# What does CILTA do?

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Provide the secretariat and process the applications for the 3 industry professional Certifications and associated CPD



# What does CILTA do?

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Significant recent work on:

- **Austroads** : National Heavy Vehicle Driver Competency Framework review
  - **NTARC 1.0** 2009-2022
  - PBS Safety and Productivity reports <sup>10</sup>Austroads 2014, NTC 2017, NHVR 2022, (2024)
  - Driver Supervisor Certification program (Via HVSI Round 8)
- 

# What does CILTA not do?

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- We are not an RTO, and
- We do not lobby !!!!!

# CLOCS-A Accreditation Platform Development

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**Rollout commenced with CILTA : 1 July 2023**

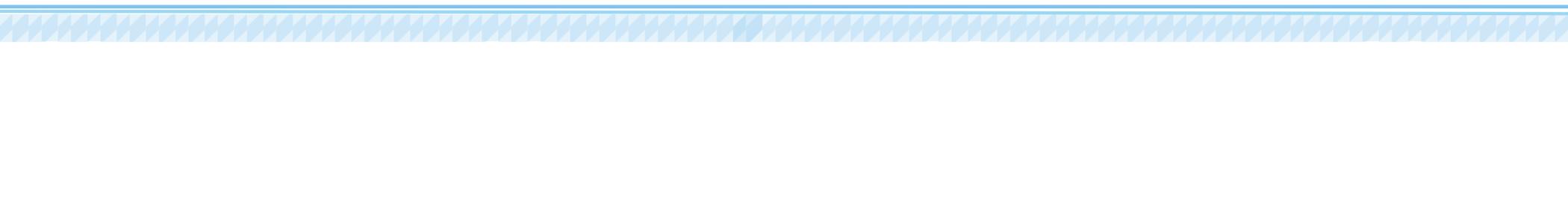
Auditor certification system development began. This was operational and completed by 30 May 2024.

This involved auditor :

- Training
- Application processing
- Exam, and
- Auditor Certification committee approval

12

**The completed Certification Platform became operational on 1 July 2024**

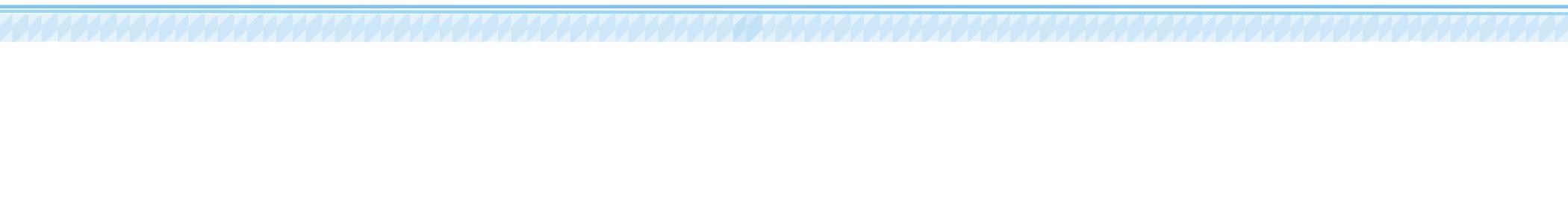


# CLOCS-A: National & State Road Safety Action Plans

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## Road Safety Action Plans 23/25

National: “Mandate the CLOCS-A standards and/or ISO 39001 Road Transport Safety Management System applied to constructs projects/programs that are funded by the Australian Government.”

- NSW
  - Qld
  - SA , 2025/27 , and
  - Victoria (In principle supported)
- 

# The CLOCS-A Standard

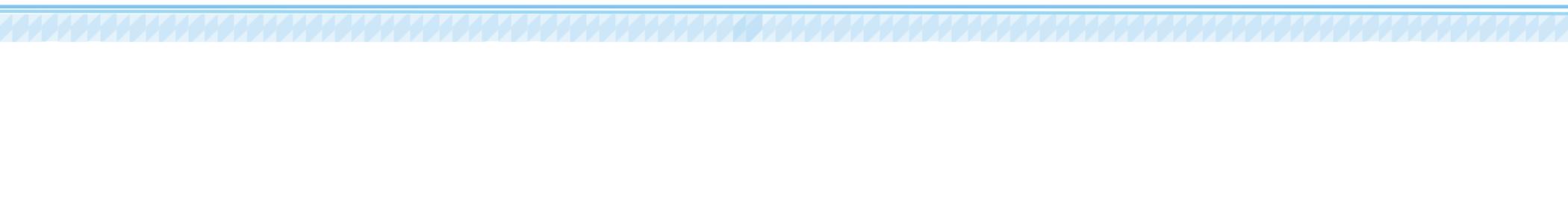
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The CLOCS-A standard is centered around minimizing VRU incidents in the construction industry.

Focusses on the Driver (VRU training) , Vehicle specs, Logistics Operational and Risk planning, and Community Communications.

Some 85 elements tiered into

14

- Bronze
  - Silver
  - Gold, levels.
- 

# The CLOCS-A Standard

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The CLOCS-A standard Certification is available for:

- Transport Fleets, servicing construction sites
- Construction Companies (per site certification<sup>15</sup>)
- Construction companies with medium to significant fleets.

# Auditors: What does a CLOCS-A auditor need?

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- Lead Auditor qualification, eg, ISO, NHVAS, MCAS, Trucksafe, OHS/Safety
- Construction white card
- Heavy Truck knowledge ( HVIA Trucks 101, unless NHVAS/Trucksafe certified)
- OH&S and Safety Certificates useful not essential

# Auditors: What does a CLOCS-A auditor need?

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- Needs to pass the exam with an 85% score (High distinction level)
- Pay an annual registration fee
- Can only do two audits per client transport company, or site
- Cannot consult to a client and audit that same company.

# Construction Truck Types (not exhaustive)

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- Agitators
- Truck and Dog Trailers light
- Truck and Dog trailers heavy
- Semi – Trailers (Flattops common)
- Low Loaders
- B-Doubles
- Single tippers 3 and 4 axle
- Bitumen Road Tankers

18



# Construction Truck Operations (estimates)

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## Operations:

- The common Construction trucks perform some 1.4 billion Kilometres per annum
  - This could be 24.9% of the VRU fatal incidents in the 7 , not 3, VRU Classes.
  - The UK saw a 47% reduction in fatal and serious incidents with CLOCS-A . Can we do the same?
- 



Thank you

# TS 00088 Minimum Requirements for Contractor Vehicles

Yousif Nassrat  
Senior Engineer Heavy Vehicles  
Prioritisation and Asset Management  
Planning, Integration and Passenger Division



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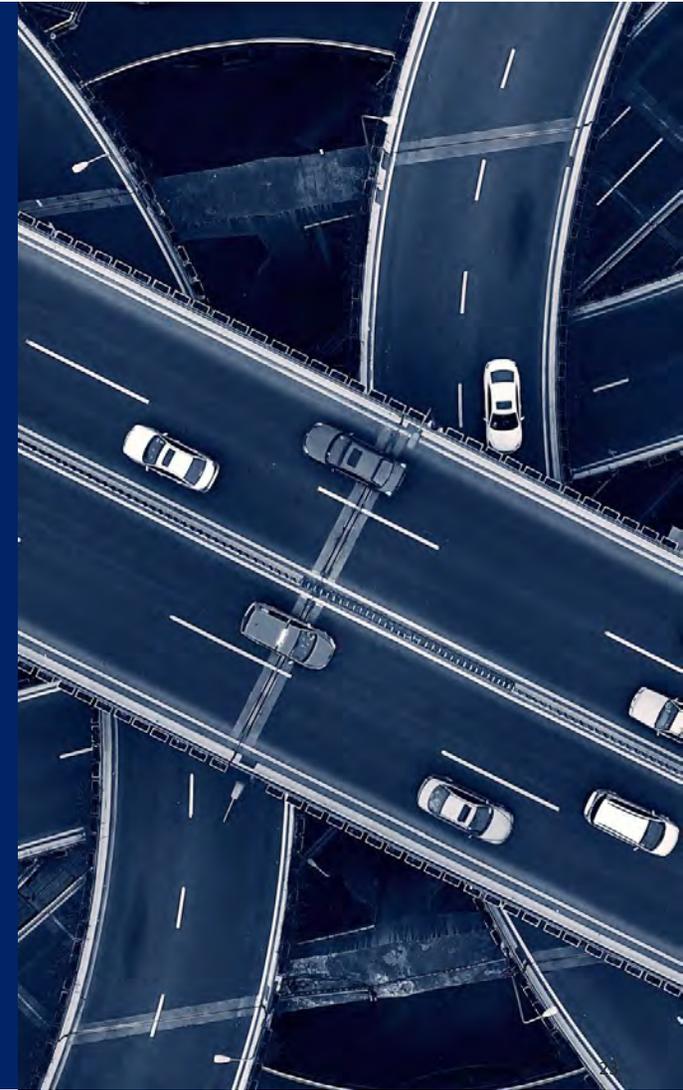
Transport pays respects to Elders past and present, and recognise and celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of NSW.

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# Objective

- Provide significant safety improvements protecting TfNSW's contractor workforce and vulnerable road users who interact with TfNSW contractor vehicles.
  - Provide long-term safety benefits to the community and secondary users of fleet vehicles.
  - Demonstrate TfNSW's commitment to delivering key actions in its current and future road safety action plan.
- 



# Existing Standards

## Heavy Vehicles & Plant



Transport  
for NSW

QA SPECIFICATION G22

## WORK HEALTH AND SAFETY (CONSTRUCTION WORK)

Copyright – Transport for NSW  
IC-QA-G22

TPR-G22 Issue 3.0 (TS 03498) – Truck and Plant  
Requirements

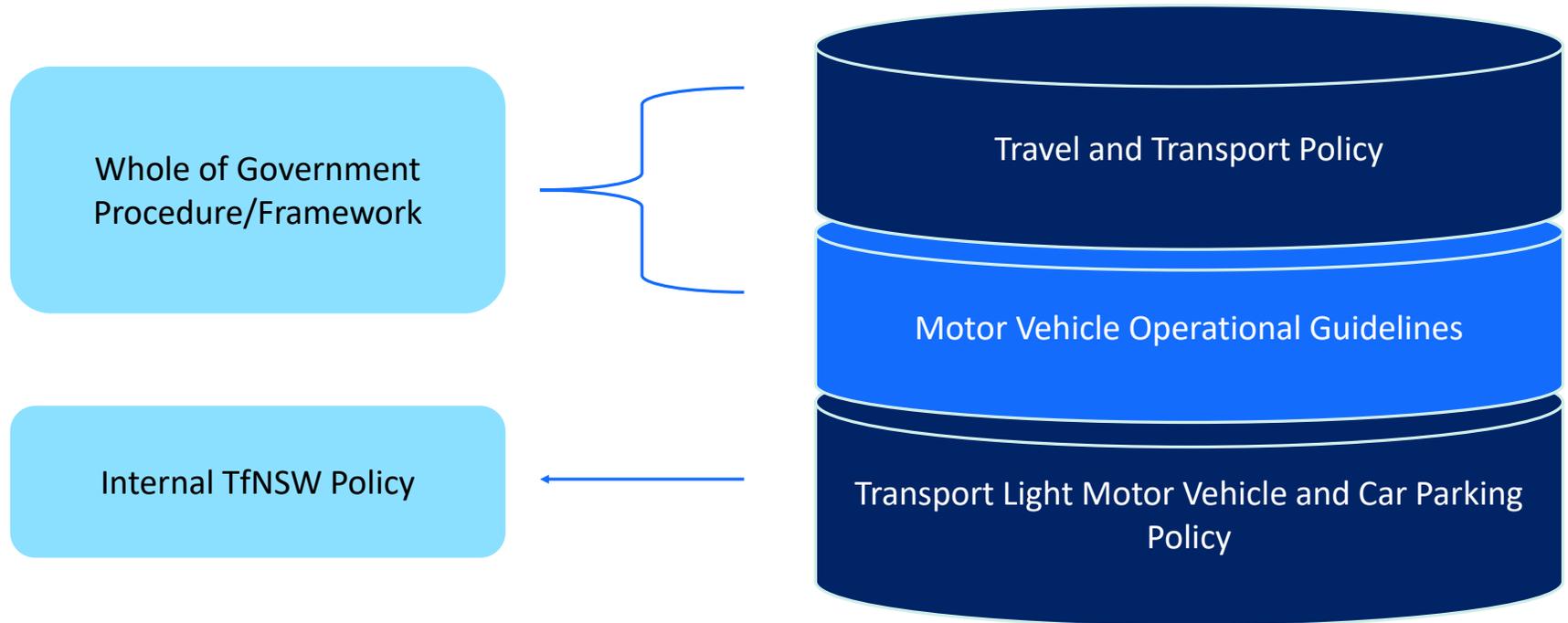
IC-QA-G22 Ed.6 Rev.5 (TS 02338.1) – Work Health  
and Safety – Construction Work

IC-DC-G22 Ed.3 Rev.5 (TS 02338.2) – Work Health  
and Safety – Construction Work

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# Existing Standards

## Light Vehicles



# Trigger Events



## Reasons for Change:

1. SER21/01744 – Contractor Light Vehicle Fleet Safety.
2. SER20/05328 - Heavy Vehicle Safety Standards on TfNSW Cluster Projects.
3. The existing standards were not part of the TfNSW Standards Management Framework.
4. Sydney Metro has successfully implemented increased minimum vehicle standards and necessary technological improvements across their projects.
5. Increased vehicle movements generated from major transport infrastructure projects.

# New Minimum Requirement for Contractor Vehicles Standard

1

Encompasses the requirements for all contractor vehicles, used for delivery of construction projects, including light vehicles, heavy vehicles, and plant

2

Single point of reference, for all agencies within Transport

3

Improves vehicle safety standards on major infrastructure projects thus provides road safety benefits to the industry and communities of NSW

# New Standard Major Initiatives

Aligns with the asset management framework and TfNSW asset lifecycle model

Enables long-term safety benefits to the community and secondary users of fleet vehicles

Enables achievement of the TfNSW Future Road Safety Action Plan

Provides significant safety improvements for contractor workforce and community road users who interact with TfNSW contractor vehicles

Single point of reference to capture all requirements relating to contractor vehicle assets



# Standard Approach

Registration Requirements  
(Section 5)

01

General Safety Requirements  
(Section 6)

02

Vehicle Specific Requirements  
(Sections 7, 8, and 9)

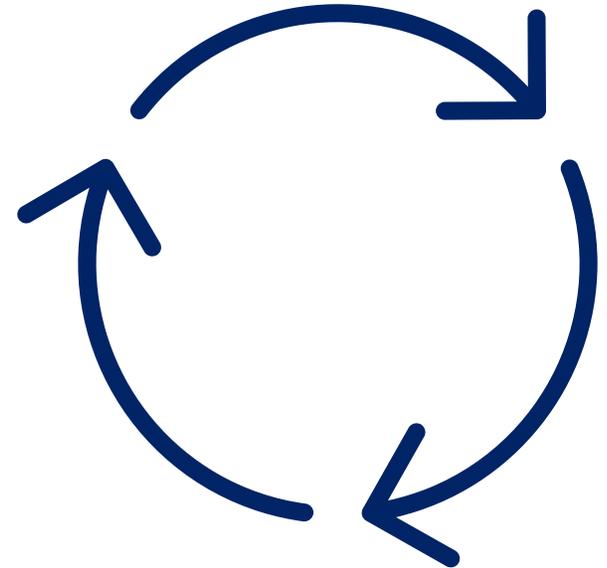
03

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## Section 5 – Registration Requirements

Section 5 outlines the registration, roadworthiness, and modification requirements for all contractor vehicles and plant, ensuring they are fully registered, compliant with relevant laws and Australian Standards, correctly certified if modified, and appropriately registered with SafeWork NSW where required.

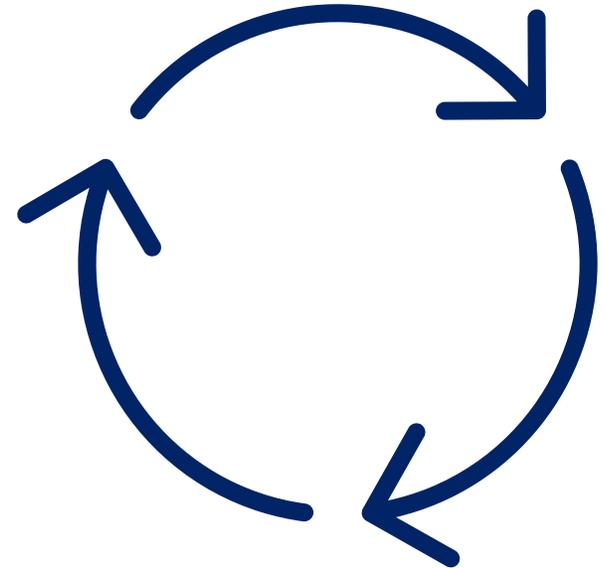
- Registration for public road and road related area use
- Roadworthiness
- Vehicle modifications
- Registration of plant



## Section 6 – General Safety Requirements

Section 6 sets minimum on-site safety requirements for all contractor vehicles and plant, including:

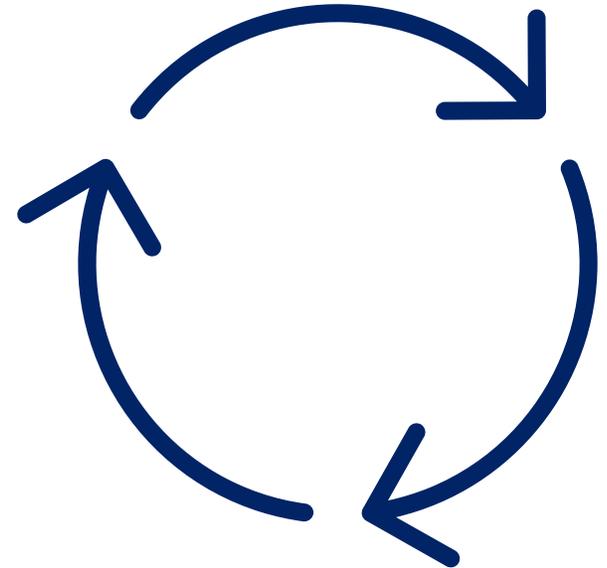
- Mandatory reverse alarms
- Amber beacons
- Proper controls and security
- Safe attachments and tarping
- Required warning signage
- Access to operating/safety information, and daily inspection and maintenance record-keeping



# Section 7 – Light Vehicle Requirements

Section 7 sets minimum safety and operational standards for light vehicles, including:

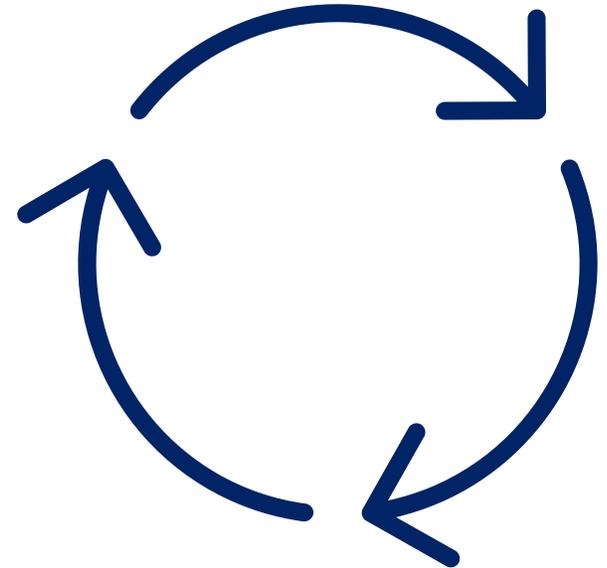
- Mandatory 5-star ANCAP ratings (with age limits) for rated vehicles
- Specific safety system requirements for LCV's
- Emissions requirements
- Reverse-collision systems
- Automatic transmission
- Restrictions on nonessential accessories unless needed for project delivery



## Section 8 – Heavy Vehicle Requirements

Section 8 outlines the safety standards for heavy vehicles, based on the CLOCS-A framework, requiring them to meet a tiered accreditation system (Bronze, Silver, Gold) that specifies progressively higher levels of safety equipment, technology, and emissions performance depending on project needs.

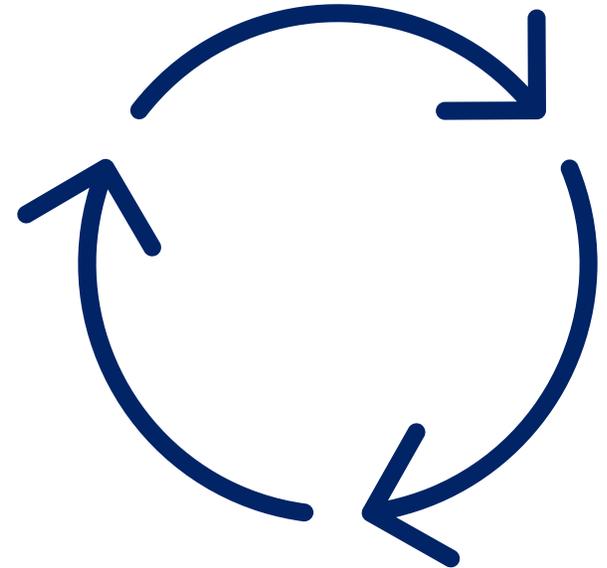
CLOCS-A is a national road safety program targeting transport and logistics related risks from major infrastructure projects.



## Section 9 – Plant Requirements

Section 9 sets comprehensive operational requirements for plant ensuring all plant is safe, well-maintained, and compliant with WHS and Australian Standards, it covers:

- Operational safety requirements
- Mechanical requirements
- Chassis requirement
- Electrical systems
- Noise limits
- Lifting components



## Future Initiatives

Review application method of the standard

Investigate stronger compliance & assurance framework

Enhance worksite integration

Continuous future-proofing with scheduled review cycles



TRANSPORT



# TRANSPORT TAXIS TRAINS TRUCKS TRAN

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# CLOCS-A Accreditation on Future Sydney Metro Projects

Michael Holmes | Senior Manager Road Transport Safety  
| Sydney Metro

8 December 2025

[sydneymetro.info](http://sydneymetro.info)



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I/We acknowledge (insert guest Traditional Custodian(s)) and peoples of the (insert Nation) and pay my/our respect to the Traditional Custodians of the lands on which we meet, especially Elders, past and present and acknowledge other Aboriginal people here and their respective cultures and nations.

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## M1 Metro North West & Bankstown Line

Services from Tallawong to Chatswood started in May 2019 and were extended to Sydenham in August 2024



21 stations



Average 200,000 metro trips per weekday



51.5-kilometres, including under Sydney Harbour

## Sydney Metro Southwest

Work is underway to extend M1 Line to Bankstown



10 stations



Conversion of 130-year-old T3 Bankstown line



Trains every four minutes in the peak

## Sydney Metro West

Construction started 2020

Under consideration



Nine stations



Connecting Greater Parramatta and the Sydney CBD



Western Sydney population, 2036

## Sydney Metro – Western Sydney Airport

Construction started 2020



Six stations



Connecting Western Sydney International Airport to the rest of Greater Western Sydney



Servicing Greater Western Sydney

Sydney Trains suburban network

Future metro (subject to further investigation)



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## Our vision

To transform Sydney with a world-class metro.

## Our mission

To deliver a connected metro service for Sydney, providing **more** choice to customers and opportunities for our communities now and in the future.

## Our values



Safety & Wellbeing



Collaboration



Integrity



Innovation



Excellence



Achievement

# Our Health and Safety Principles



[sydnymetro.info](http://sydnymetro.info)

## Health and safety model



We consider strong health and safety performance as more than complying with health and safety legislation.

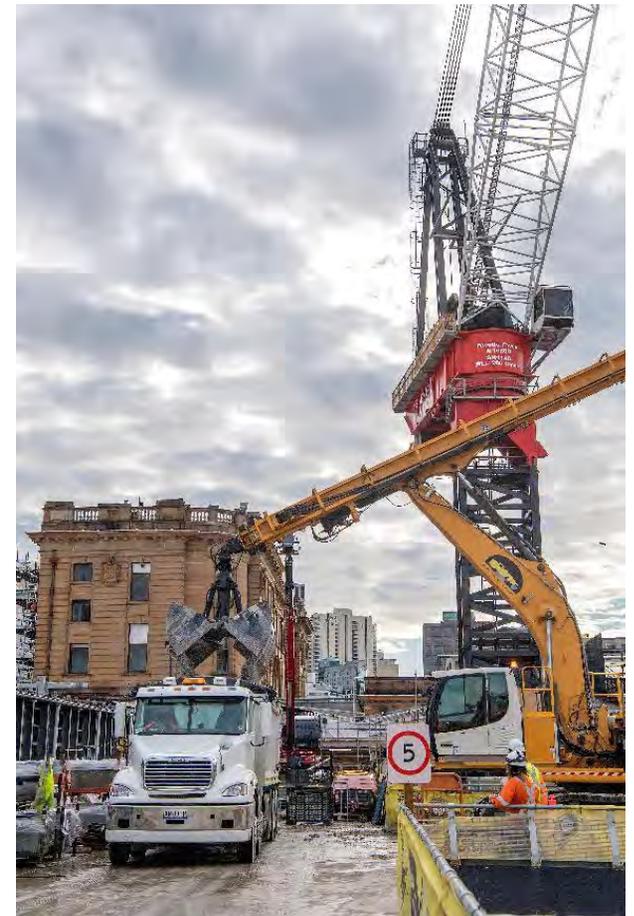
Our health and safety principles include:

- strong direction and governance
- systematic application of health and safety
- engagement, collaboration and consultation
- evidence based decision making.

Our aims are to improve health and safety outcomes by driving best practice, innovation and improved planning.

## Our leadership role in driving road safety

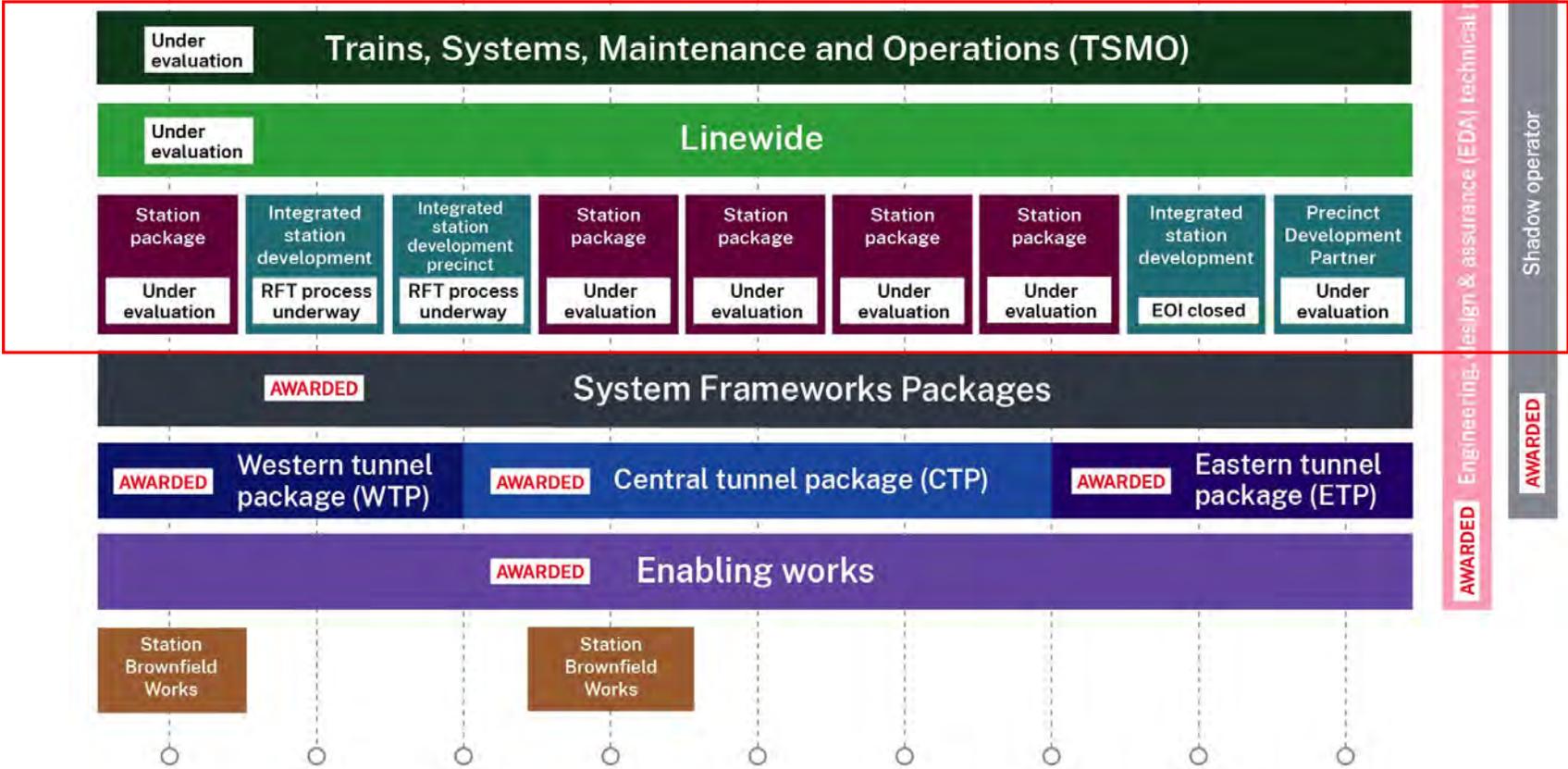
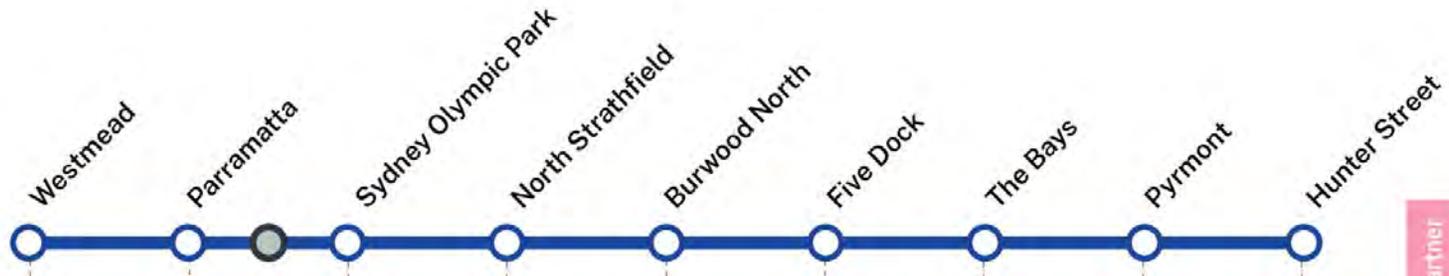
- **Moral Imperative** - Work-related road incidents are the **leading cause of workplace fatalities** nationally which carry devastating human, societal, and economic costs. (Safe Work Australia, 2024)
- **Leadership from the top** - Governments are major employers, policy makers, regulators and purchasers of equipment and services. [We] have a **leadership role in preventing work-related death**, injury and disease in Australia through promoting, legislating and enforcing safety requirements ... (ASCC, 2006).
- **Safety duty - Responsibility starts with the purchaser** who has a duty to ensure that the conditions applied when choosing a contractor fulfil the organisation's obligations on traffic safety (ETSC, 2015).
- **Influence** - Governments are major purchasers of goods and services, and as such **influence safety outcomes** through our procurement arrangements (ASCC, 2006).



# Delivery Partner & Transport Statistics – as of June 2025

- **Principal Contractors:** 29 (incl. international civil infrastructure contractors to local building and utilities contractors)
- **Heavy Vehicle Transport Companies:** 500+ (from large transport and logistics and local owner-operators)
- **Heavy Vehicles Onboarded:** 2,000+ across NSW, VIC, and QLD
- **Heavy Vehicle Drivers Inducted:** 3,113 through Sydney Metro Safe Heavy Vehicle Driving Induction
- **Transport Movements:** Approximately 440,000 heavy vehicle movements over FY 2024-25





AWARDED Engineering, design & assurance (EDA) technical partner

Shadow operator

Project	Estimated Value	Procurement Strategy	Current Phase	2025		2026				2027				2028				2029				2030			
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Transport</b>																									
<a href="#">Sydney Metro West - Hunter Street Station</a>	\$\$\$\$	D&C	Construction Procurement	█						█				█				█				█			
<a href="#">Sydney Metro West - Line Wide Systems</a>	\$\$\$\$\$	ITC	Construction Procurement	█						█				█				█				█			
<a href="#">Sydney Metro West - Parramatta Integrated Station</a>	\$\$\$\$	D&C	Construction Procurement	█		█				█				█				█				█			
<a href="#">Sydney Metro West - Pyrmont Integrated Station</a>	\$\$\$\$	D&C	Construction Procurement	█		█				█				█				█				█			
<a href="#">Sydney Metro West - Stations Package West (Westmead, North Strathfield, Burwood North, Five Dock, The Bays)</a>	\$\$\$\$\$	D&C	Construction Procurement	█						█				█				█				█			
<a href="#">Sydney Metro West - Sydney Olympic Park Integrated Station</a>	\$\$\$\$	D&C	Construction Procurement	█		█				█				█				█				█			
<a href="#">Sydney Metro West - Trains, Signalling, Maintenance and Operations</a>	\$\$\$\$\$	D&C+	Construction Procurement	█										█				█				█			

**Estimated Project Value**

- \$ \$50M to \$100M
- \$\$ \$100M to \$250M
- \$\$\$ \$250M to \$500M
- \$\$\$\$ \$500M to \$1BN
- \$\$\$\$\$ Over \$1BN

**Project Timeline Phases**

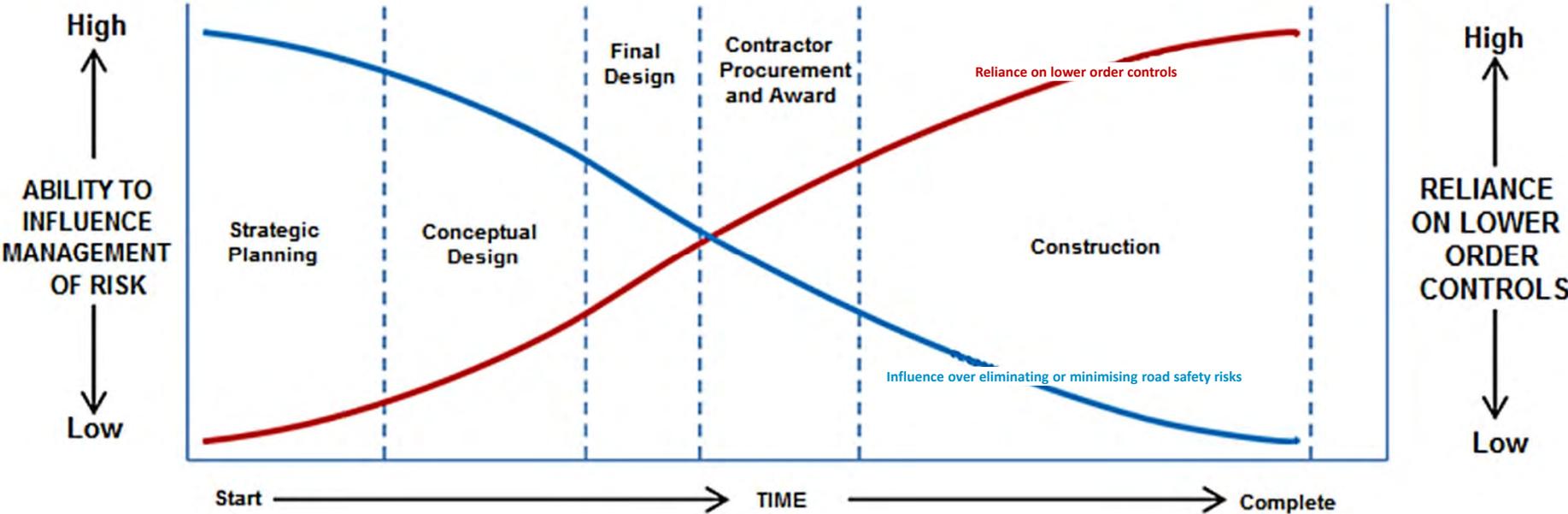
- █ Procurement
- █ Construction
- █ Rolling Program
- █ TBA

We are here now

Source: Infrastructure NSW (as of Oct 2025)

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# Safety in planning and procurement



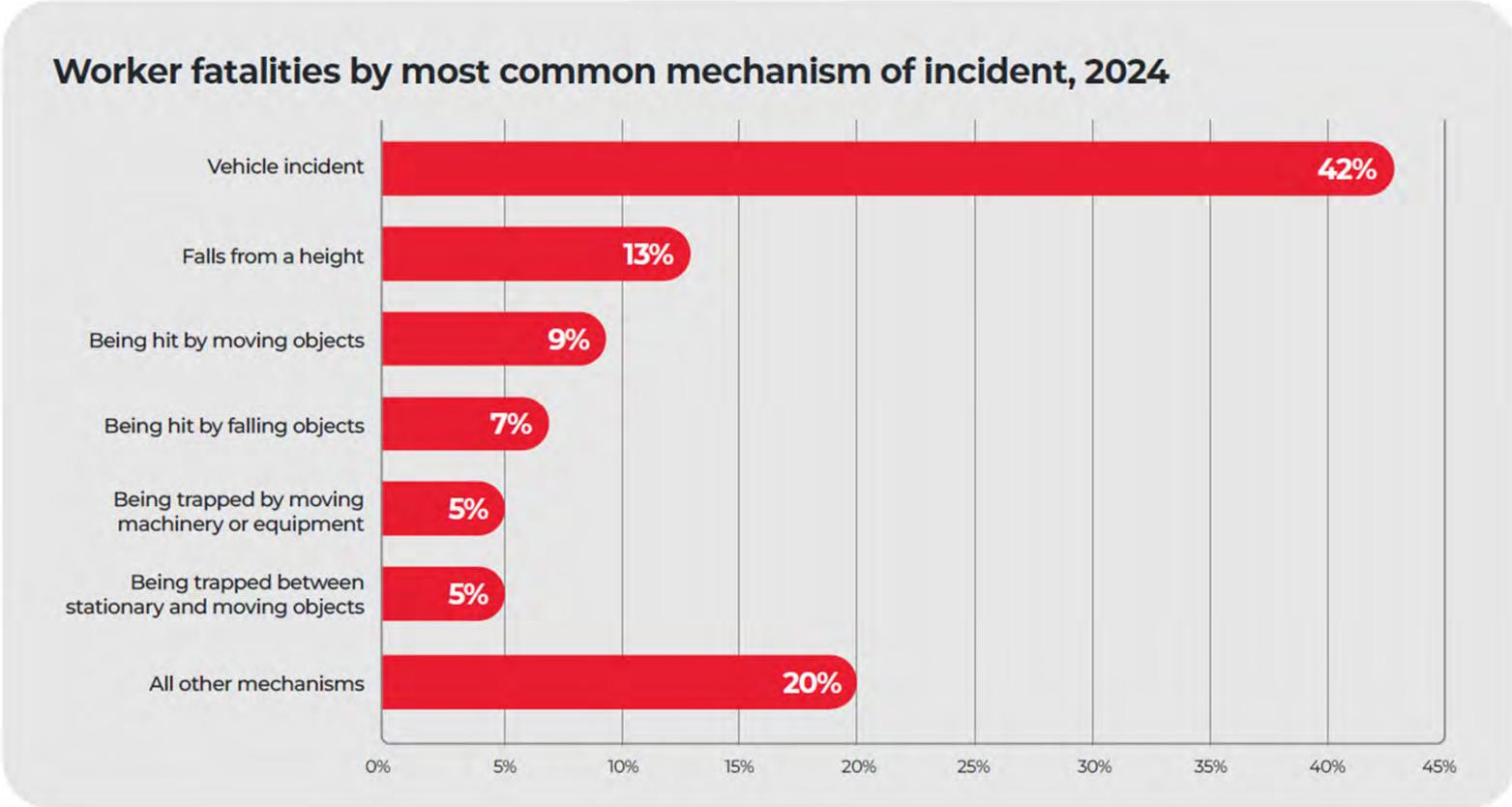
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## Background and Context

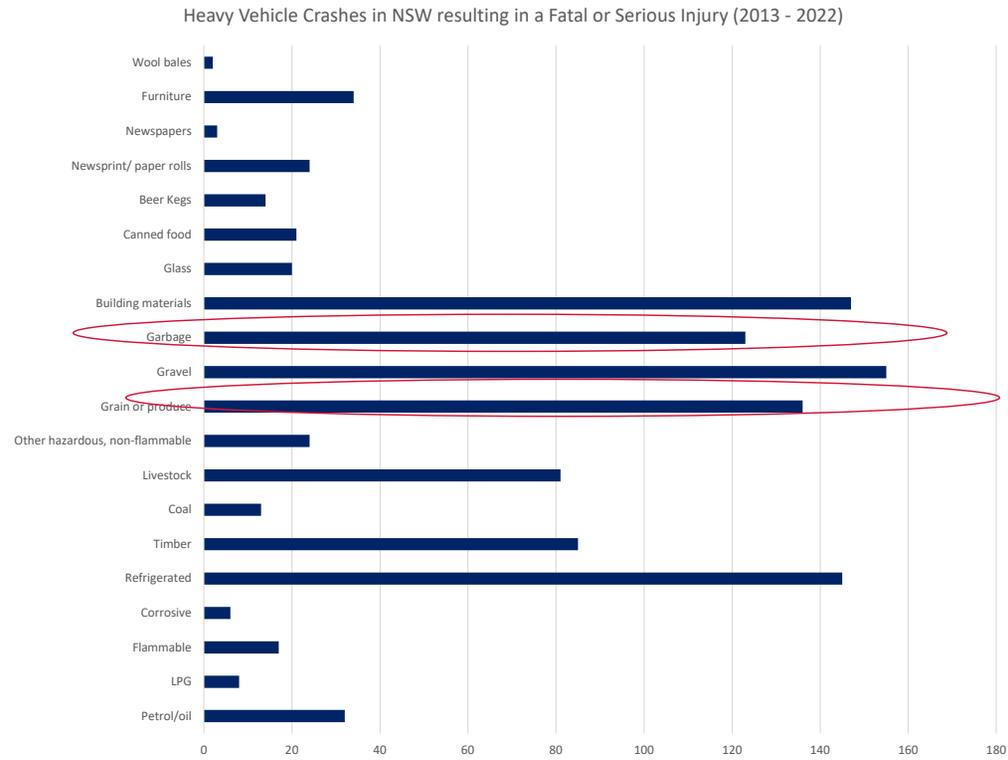
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# Worker fatalities by mechanism of incident (Safe Work Australia, 2025)



# Fatal crashes by load type in NSW

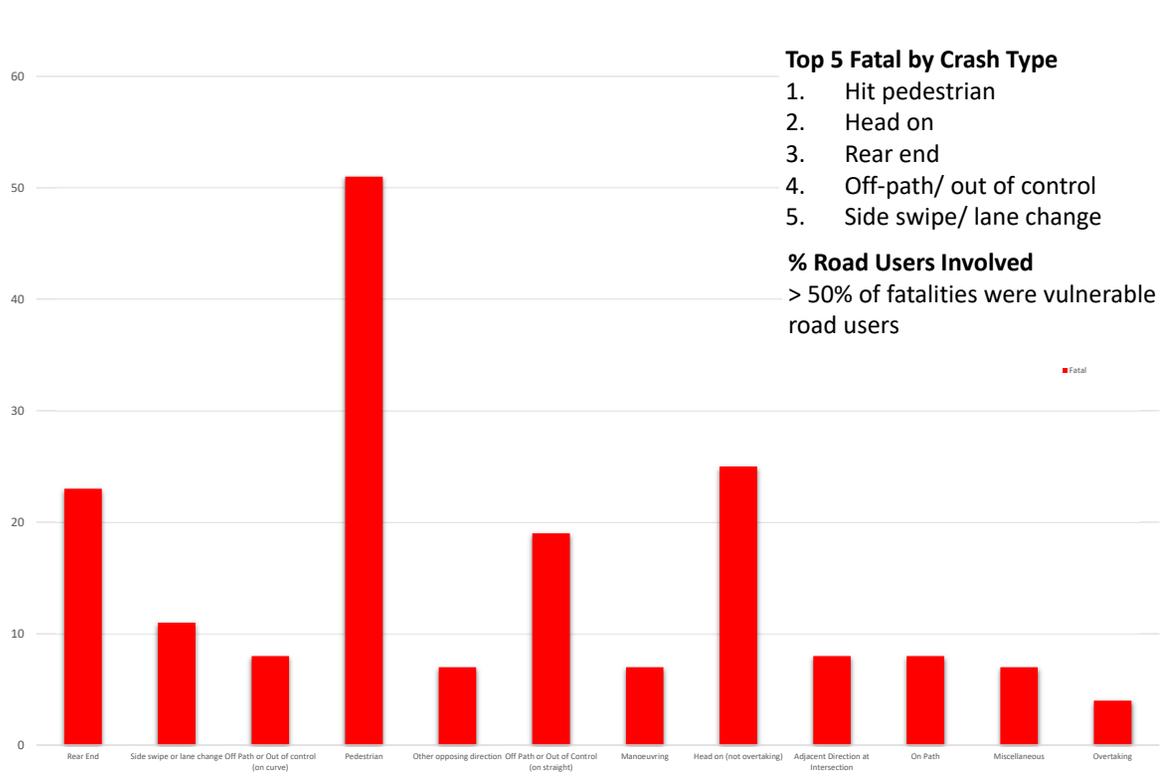


Note: Load categories of "Nil" and "unknown" not included

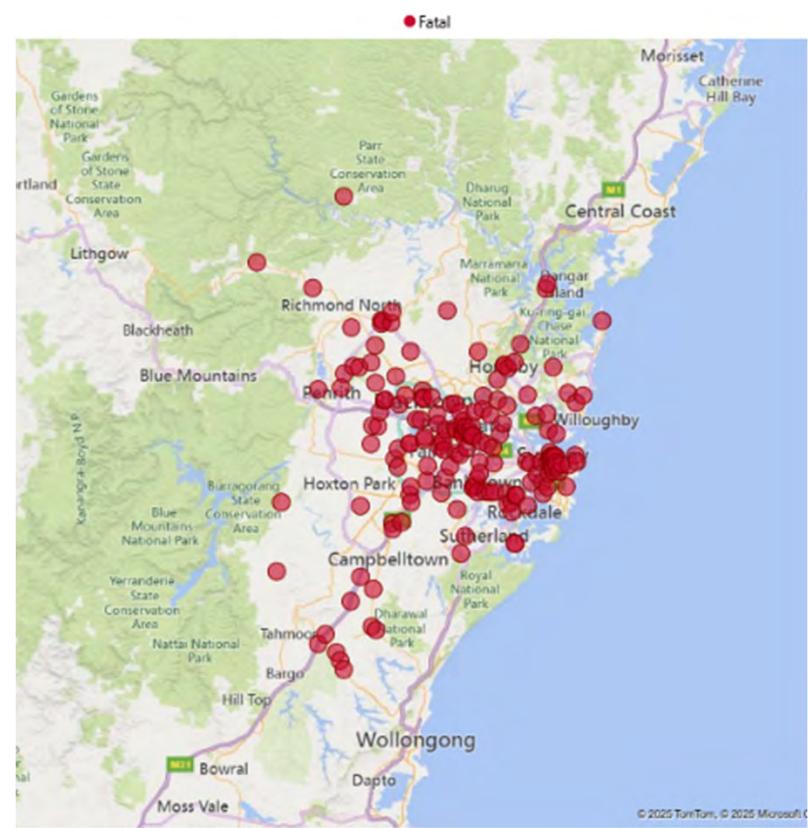
Source: Transport for NSW (2024) Interactive Crash Statistics

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# Fatal heavy vehicle crashes in Greater Sydney 2014 - 2023



- Top 5 Fatal by Crash Type**
1. Hit pedestrian
  2. Head on
  3. Rear end
  4. Off-path/ out of control
  5. Side swipe/ lane change
- % Road Users Involved**  
 > 50% of fatalities were vulnerable road users



Source: Transport for NSW (2025) Interactive Crash Statistics

# Wheelchair-bound teen killed by NorthConnex truck in Hornsby CBD

Daily Telegraph

Jake McCallum and Rebecca Parish

less than 2 min read December 6, 2017 - 4:41PM

Hornsby Advocate



The 16-year-old was struck and killed by a NorthConnex truck in Hornsby CBD. Picture: Patrick Beggie

A WHEELCHAIR-bound student from Pennant Hills High School was struck and killed by a truck in Hornsby on Tuesday — leaving devastated community members asking what will be done to ensure safety on our roads.

## NSW truck deaths increase by 86 per cent in 12 months



Mario Christodoulou  
Updated December 30, 2017 - 7:49am, first published at 12:15am

Save Share

NSW truck deaths have increased by more than 86 per cent in 12 months, as police report increased heavy vehicle traffic connected to major construction projects.

In the 12 months to September, deaths have leapt from 29 to 54, by far the biggest increase since at least 2009 when the federal government first started releasing counts of fatal crashes involving heavy vehicles.

## Police raid trucking company after woman killed in M4 crash at Homebush West

Georgina Mitchell  
Updated April 6, 2017 - 4:06pm, first published April 5, 2017 - 4:20pm

Save Share

A truck involved in a fatal crash on the M4 motorway in Sydney's west on Wednesday was defective, police have alleged.

Officers issued a "major red defect notice" for the tipper truck for defective brakes on Thursday, after inspecting the trucking company's entire fleet.



Emergency services at the scene of the fatal crash on the M4 on Wednesday.

## Elderly woman holding husband's hand when she was fatally hit by truck identified

Elizabeth Daoud · 7NEWS

Published: 02/05/2019

Updated: Friday, 3 May 2019 5:49 AM GMT+10



Police are looking at dash-cam footage to identify elderly lady who was killed by a cement truck.

Share: f t e

An elderly woman who died while holding her husband's hand to cross a busy Sydney street has been identified.

## Female pedestrian struck and killed by truck in Leichhardt, Sydney

Catie McLeod | NCA NewsWire  
Tue, 12 October 2021 12:44PM



Police at the scene of the fatal crash on Tuesday. NCA NewsWire / Adam Yip Credit: News Corp Australia

f t e

A woman has died after she was hit by a truck while walking in Sydney's inner west on Tuesday morning.

Emergency services were called to Leichhardt just before 10.30am following reports a female pedestrian had been struck by a truck.



# E-BIKE RIDER **KILLED** IN COLLISION WITH GARBAGE TRUCK IN CBD

**7NEWS**  
com.au



# **HORSLEY PARK COLLISION** **17-YEAR-OLD RIDER IN SERIOUS CONDITION**

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# Early lessons learned – Northwest Rail Link



A truck towing tunnel boring equipment was intercepted by the Joint Heavy Vehicle Taskforce after it was detected as being allegedly in breach of its permit. Picture: Supplied

NSW

## Truck grounded for breaking road safety rules while carrying massive tunnel boring machine parts

JIM O'ROURKE, TRANSPORT REPORTER, The Daily Telegraph  
July 30, 2014 12:07pm

## Dangerous trucks plague Gladys Berejiklian's north-west rail link

Jacob Sautwick

Updated August 5, 2014 – 6.40pm, first published at 5.37pm

Save Share A A A

Public safety is being repeatedly put at risk by contractors working on the state government's biggest public transport project, according to NSW Police and Roads and Maritime Services.

For the third time in two weeks a trucking company transporting equipment for the \$8.3 billion north-west rail link has been caught flouting the road rules.



Trucks were weighed and drivers drug tested at a rest stop on Windsor Rd, Box Hill / Picture: Justin Sanson

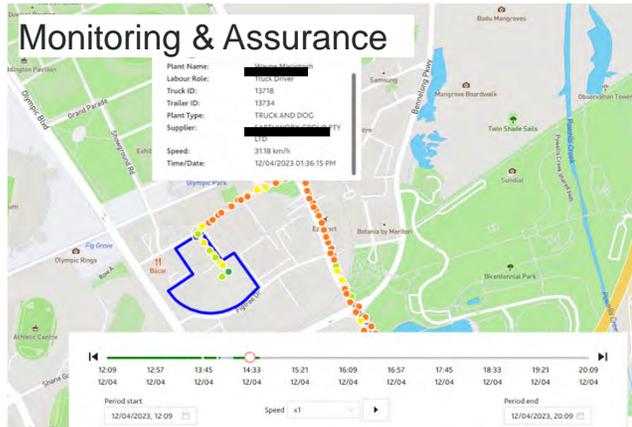
NSW

## Drugs found in major blitz on trucks in the area of the north west rail link

EXCLUSIVE Mark Mori, The Daily Telegraph  
December 4, 2015 12:00am  
Subscriber only

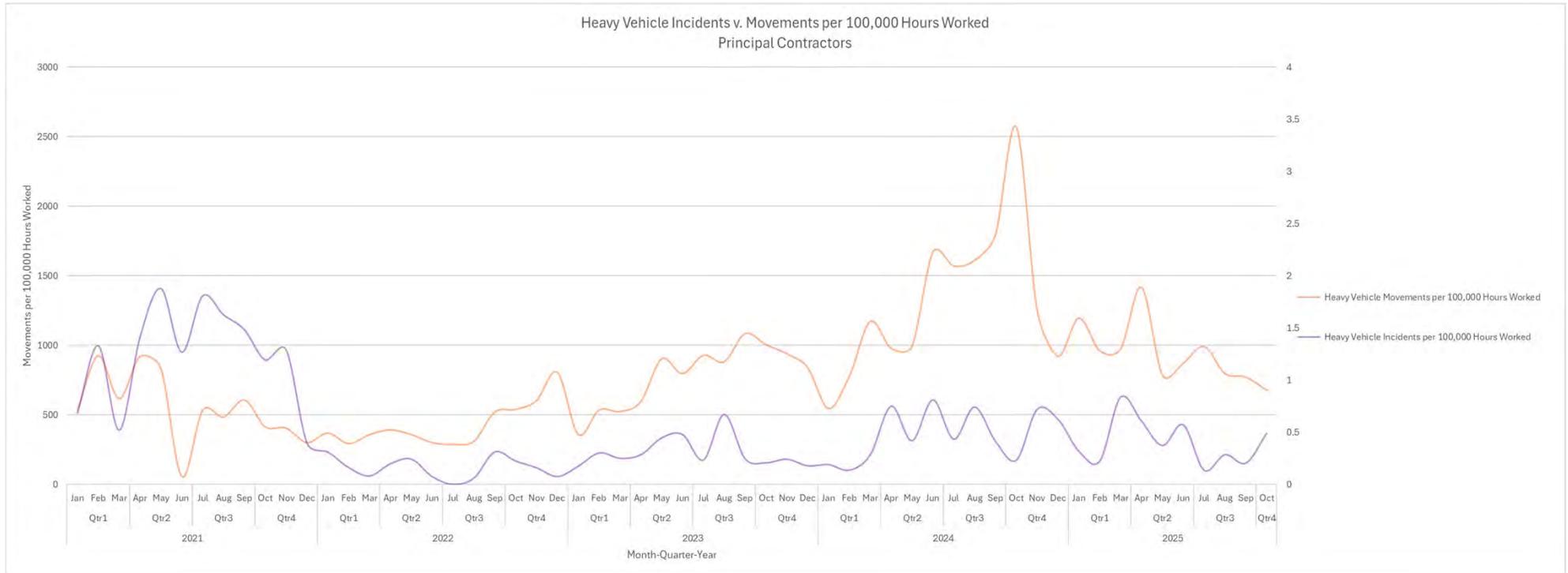
TRUCK drivers working on the construction of Sydney's north west rail link have been caught driving under the influence of ice, speeding through school zones and operating overloaded vehicles.

# Road transport safety – a safe system approach



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# Heavy vehicle activity and safety trends 2021-2025



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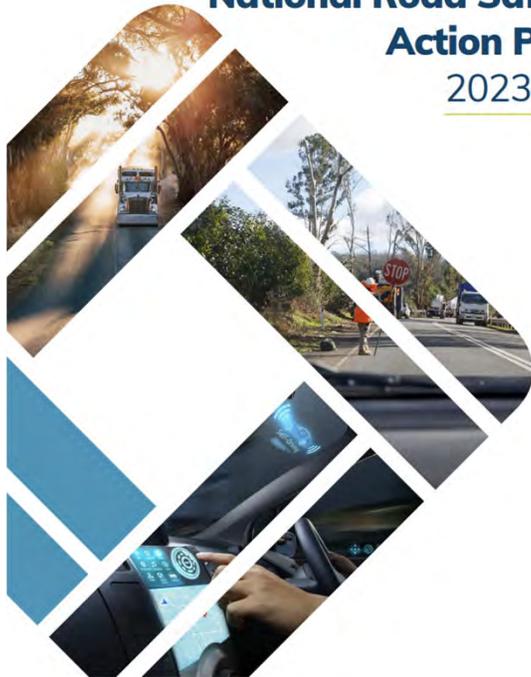
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## Future directions

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# National Road Safety Action Plan 2023–25



**The Australian Government will:**

Action	By when
Implement Austroads' <i>Vehicles as a Workplace: Work Health &amp; Safety Guide</i> in Australian government agencies	Commence mid 2023
Lead research into data relating to workplace crashes and near misses when the road is part of the workplace	Commence late 2024
Mandate that the CLOCS-A Standard and/or ISO 39001 Road Traffic Safety Management Systems be applied to construction projects/programs that are funded by the Australian Government	Late 2025
Establish baseline data for workplace fatalities involving a vehicle	Late 2025

**State and territory governments will:**

Action	By when
Fund and promote the National Road Safety Partnership Program's work of supporting Australian businesses in developing a positive road safety culture	Commence 2023
Implement Austroads' <i>Vehicles as a Workplace: Work Health &amp; Safety Guide</i> in government agencies and more broadly	Commence 2023
Undertake an audit of workplace road safety policies across state and territory government agencies	Commence 2023
Support implementation of CLOCS-A to provide government and industry with a framework for managing risks associated with heavy vehicles and construction logistics, and/or ISO 39001 Road Traffic Safety Management Systems in line with Manual of Uniform Traffic Control Devices (MUTCD) or equivalent guidelines	Late 2025
Review traffic management policies with particular attention to speed limits at roadwork sites and their enforcement	Ongoing
Fund workplace road safety awareness campaigns	Ongoing
Contribute data to the Australian Government to assist in the establishment of a baseline for workplace fatalities involving a vehicle	Ongoing

Transport  
for NSW

# 2026 Road Safety Action Plan

Toward zero trauma  
on NSW roads



[transport.nsw.gov.au](https://transport.nsw.gov.au)



TS 00088:1.0

Standard

## Minimum Requirements for Contractor Vehicles

Issue date: 26 August 2024

Effective date: 26 August 2025

© State of NSW through Transport for NSW 2024

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## Baseline General Specification - Delivery

SM-24-00161193

Metro Body of Knowledge (MBok)

Applicable to:	Sydney Metro West
Document Owner:	Associate Director, Commercial Governance & Assurance
System Owner:	Executive Director, Commercial Strategy & Procurement
Status:	Final
Version:	1.0
Date of issue:	17 July 2024
Review date:	17 July 2026
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Name of Approver:	Christian Porter
Role / Title:	Executive Director, Commercial Strategy & Procurement
Date Approved:	11 July 2024
Digital Signature:	Email Approval

- (j) The Contractor must ensure: *[SM-W-DEL-GS-738]*
- (i) accreditation is gained and maintained to at least the silver requirements of the Construction Logistics and Community Safety Australia standard; and *[SM-W-DEL-GS-739]*
  - (ii) each Subcontractor<sup>[s]</sup> engaged by the Contractor who operates heavy vehicles is accredited to at least the silver requirements of the Construction Logistics and Community Safety Australia standard, or an equivalent standard, prior to appointment on this contract or as a minimum within three (3) months of appointment. *[SM-W-DEL-GS-740]*

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# Construction Logistics and Community Safety – Australia

- Project funded by National Heavy Vehicle Regulator
- CLOCS-A Steering Group and Supporting Partners Established
- Sydney Metro Executive Commitment in 2021
- Standard development with Industry, Governments, Road Safety Groups from February 2022 – June 2023
- Host organisation (CILTA) established in 2024 to project manage systems, governance and accreditation processes
- TfNSW TS0008 Minimum Requirements for Contractor Vehicles
- Sydney Metro West – General Specification



# Summary

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- Sydney Metro's infrastructure program involves one of the largest freight tasks in NSW, involving thousands of heavy vehicle movements across complex urban environments to support construction activities.
- Our commitment goes beyond compliance. We're focused on driving best practice, innovation, and consistency, working with delivery partners, government, and industry to raise the bar for road transport safety.
- Despite a steady increase in heavy vehicle activity across our projects to date, we haven't observed a correlating rise in incident rates which is a strong indicator that our safety efforts are working.
- Future contracts will include CLOCS-A accreditation clauses, and we encourage our industry partners to continue to lead road safety on our projects through early adoption and a shared commitment to safer roads for all.





[sydneymetro.info](http://sydneymetro.info)



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# CLOCS-A Safety Forum

**Best Practice in Innovation and Safety**

*Joe Sharaf  
Operations Manager- Sydney*



# AUSTRALIA'S HEAVY VEHICLE INDUSTRY

- The NHVR is Australia's dedicated regulator for all heavy vehicles.
- We administer the Heavy Vehicle National Law (HVNL) for all heavy vehicles over 4.5 tonnes gross vehicle mass or aggregate trailer mass, including buses.
- Australia's road freight task is growing almost **twice as fast** as its population.
- As of December 2024, there were approximately **1,078,700** registered heavy vehicle units.



All data sourced from [Bureau of Infrastructure and Transport Research Economics](#)

# CONSTRUCTION VEHICLES



- Data collected through BAU / Operations and the National Roadworthiness Survey indicate that vehicles used in the construction sector are at a higher risk of mechanical non-compliance than other industry participants.
- Highest areas of non-compliance are **mechanical condition** and **load restraint**.
- The NHVR also considers the sector to be at a higher risk of **mass non-compliance** due to the variable mass of the loads they carry and the loading of these vehicles in off-road environments.

# NATIONAL ROADWORTHINESS SURVEY 2024

- The National Roadworthiness Survey provides a **health check** of Australia's heavy vehicle fleet.
- The information from the survey allows us to determine where the NHVR and industry are **making improvements**, or where more focus is needed.
- The **2024** survey was the third iteration, with previous surveys in **2016** and **2021**.
- The survey is used to collect **essential data** to drive future safety initiatives.



# NRS 2024 – THE RESULTS



- **9000+** detailed mechanical inspections conducted with **14,000+** individual units inspected
- All states and Territories participated including **WA and the NT.**
- All vehicle results remain **well below the 2016** survey results
- The highest incident of non-conformity still occurs in **rigid trucks.**
- The incidence of non-conformity has **remained stable** across most vehicle types since 2021 with small increases in bus/coach and plant/SPV.
- In 2024, there were 104 vehicle units grounded, including 51 powered units and 53 trailers.

# NRS 2024 – THE RESULTS

- **Top areas of non-conformance for all vehicles** included:
  - Brakes
  - Lights and reflectors
  - Structure and body
  - Engine, driveline and exhaust
  - Steering and suspension
- **Top areas of non-conformance for rigid trucks** included:
  - Lights and reflectors
  - Brakes
  - Structure and body
- **Brakes were highest** in regional areas.
- Non-conformity did not differ greatly between rigid trucks inspected in their state of registration and those inspected interstate (40% and 36%, respectively).



# TARGETED OPERATIONS

- **NHVR** has undertaken national compliance operations since the 2016 **NRS** highlighted risks within these vehicle types.
- Since that time operations have seen a consistent compliance rate within the construction industry with the areas of interest remaining static.
- **Mechanical non-compliance** remains the highest safety risk identified across all the operations to date.
- Defective component types **remain consistent** with NRS results.
- Highest rates of non-compliance (43%) occurred in **Tipplers** intercepted during previous compliance operations.

COMPLIANCE OPERATION	INTERCEPTS	NCR	Most Common Defect Components
PRECISION	4,612	30%	Ancillary Equipment/ Brakes
SQUIRE	1,203	44%	Body & Structure Lights
MYSTIC	1,965	34%	Body & Structure

# OPERATION SAPPHIRE – THE WHY

- **Operation Sapphire** is a coordinated multi-jurisdictional compliance response to identified **safety risks** with heavy vehicle vehicles operating within the construction industry.
- Developed based on compliance operation results and recent NRS data.
- **Locations** were selected based on activity and information provided by industry on potential areas of risk.
- The joint NHVR and Police operation focused on:
  - Mechanical safety
  - Mass/ Dimension/ Loading
  - Permits
- Police agencies are supportive of the **national initiative**.



# LOOKING FORWARD



- **NHVR** continues to monitor the correlation between vehicle and rate of non-conformity.
- Recent analysis has identified an increased rate of heavy vehicle crashes as a result of coupling failure.
- **Brake defects** remain a concern particularly in regionally inspected vehicles.
- An intelligence probe relating to permits is currently being undertaken to validate an identified risk.

# CLOCS-A

- The NHVR has supported the development of the CLOCS-A scheme through:
  - provision of grant funding as part of **the Heavy Vehicle Safety Initiatives (HVSIs) program**
  - participation in working groups during development.
- Due to where they are used, construction vehicles have a number of inherent safety risks that must be addressed.
- CLOCS-A offers an industry-led approach that **recognises the roles all parties in construction programs** have in improving road safety from those planning projects through to the boots on the ground at sites and the vehicles delivering the projects.



# CLOCS-A

**CLOCS-A**  
Bronze Membership Requirements

- Amber Beacons
- Class V and VI Mirrors
- Conspicuity Marking
- Wheel-Nut Position Indicators
- Fresnel Lens
- Warning Signage
- Rear View Cameras
- Reversing Sensors
- Reversing Beeper
- Brightly-Coloured Drawbars

The Minimum Mandatory Standard for all heavy vehicles complying with CLOCS-A technical requirements. Measures and technologies that are relatively low cost and easy to implement.

*No flag deflection on International trucks - City and Urban Projects only*  
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- CLOCS-A offers a non-regulatory approach that:
  - Promotes shared responsibility for safety
  - Supports standardisation across projects and jurisdictions
  - Assists operators of various sizes to effectively invest in safety equipment
  - Supports vehicle mobility between projects

# THANK YOU

For more information:  
13 NHVR (13 64 87)  
info@nhvr.gov.au  
www.nhvr.gov.au

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 National Heavy Vehicle Regulator

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 NHVR

 National Heavy Vehicle Regulator





TRUCK INDUSTRY COUNCIL  
SAFER GREENER ESSENTIAL



TODAY'S TRUCKS



# Improving VRU Outcomes Through Vehicle Safety Features

Paul Caus  
Technical Officer  
8<sup>th</sup> December 2025

# Today's Session

1. Who are the Truck Industry Council ?
2. Truck Market Overview
3. Accidents involving VRU's – the problem
4. Examples of technologies intended to improve VRU safety outcomes.
5. How the CLOCS-A Scheme considers vehicle safety features.
6. Current and future work on vehicle safety focused on VRU safety

# Truck Industry Council



Anthony McMullan  
Chief Executive Officer



Mark Hammond  
Chief Technical Officer

- Representing manufacturers and distributors of commercial vehicles with Gross Vehicle Mass above 3.5 T in Australia.
- Members produce or import 18 brands of truck for the Australian market.
- Members also include some major component and sub system suppliers



# Australia's New Truck Market (2024)

- **51,277** Truck and Heavy Van sales (>3.5t GVM) - a NEW all-time sales RECORD in Australia - **↑7.4% over 2023**
- 2022 sales **44,379**; 2023 sales **47,757**
- **33.4%** Heavy Truck (>17t GVM) - **↓2.4% over 2023**
- **15.9%** Medium Truck (>8.0t to 17t GVM) - **↑1.6% over 2023**
- **28.4%** Light Truck (>3.5t to 8.0t GVM) - **↓10.0% over 2023**
- **22.3%** Heavy Van (>3.5t to 8.0t GVM) - **↑90.0% over 2023**

- National Truck Fleet Forecast
  - 2020 - 688,000
  - 2025 - 750,000
  - 2030 - 853,000
- Registered fleet composition (Jan 2023): 592k rigid; 120k articulated trucks.
- Australian freight task forecast growth 26% between 2020 and 2050

# Sector Snapshot 2024- 2030



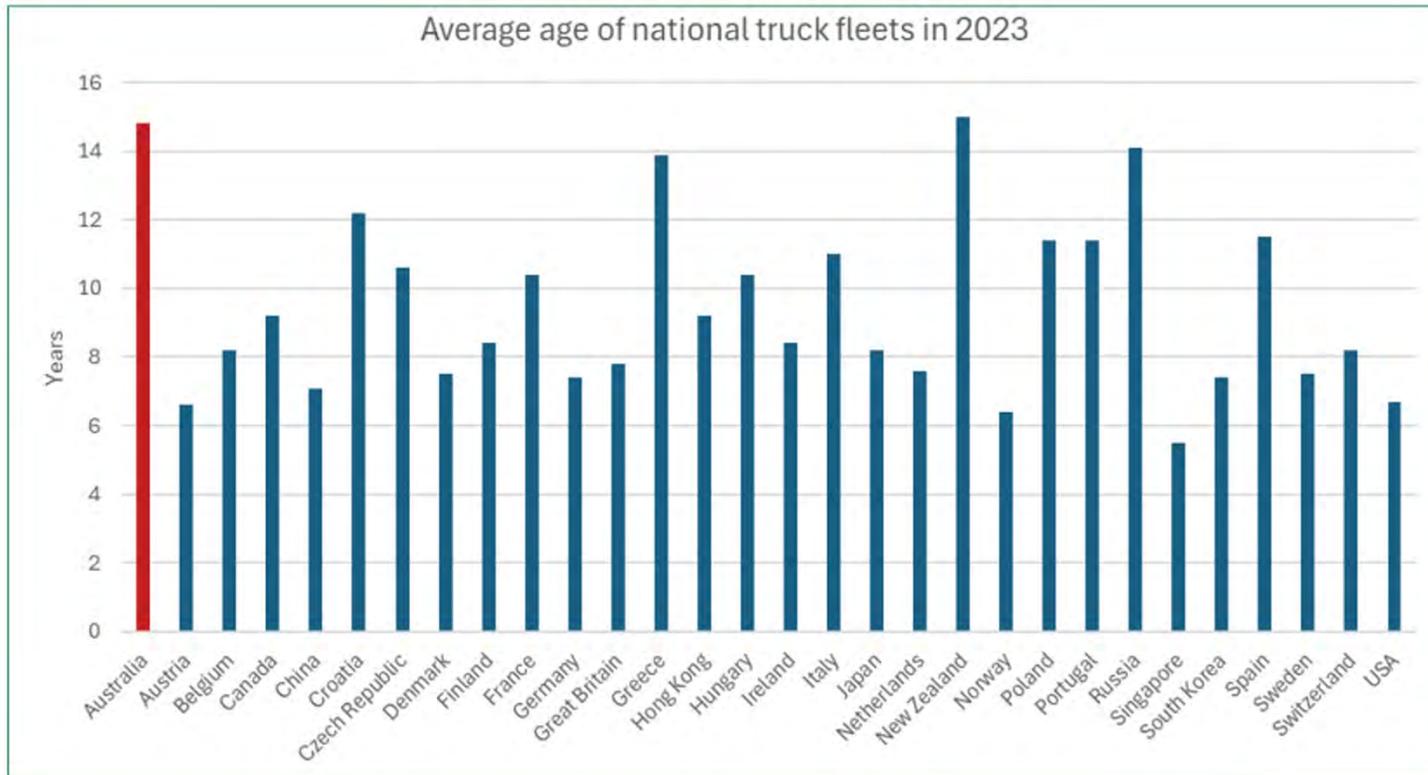
**ISSUE:** The average age of the truck fleet is

**14.8 years**

**WHY ?**

- 98% of trucking businesses have 19 or fewer employees
- 70% are owner drivers. Another 15% have 2-5 trucks
- Median profit is just over 2%
- Depreciation rate for a truck >3.5T GVM runs to 15 years

# One of the oldest truck fleets



# Consequence of old fleet ?

In the last 14 years the following key safety features have been mandated by the ADR's

- Anti lock brakes (on trucks 2015, on trailers 2019)
- Anti Roll (on prime movers 2020, all other trucks 2022, on trailers 2019)
- Electronic Stability Control (on prime movers 2020, all other trucks 2022)
- Euro V (2010),. Euro VI (2025)
- Autonomous Emergency Braking (2024)
- Side underrun (2023 for veh. wider than 2.5m)
- Stricter indirect vision requirement ( 2023 for veh. wider than 2.5m)

# HOW DO CRASHES WITH TRUCKS HAPPEN?

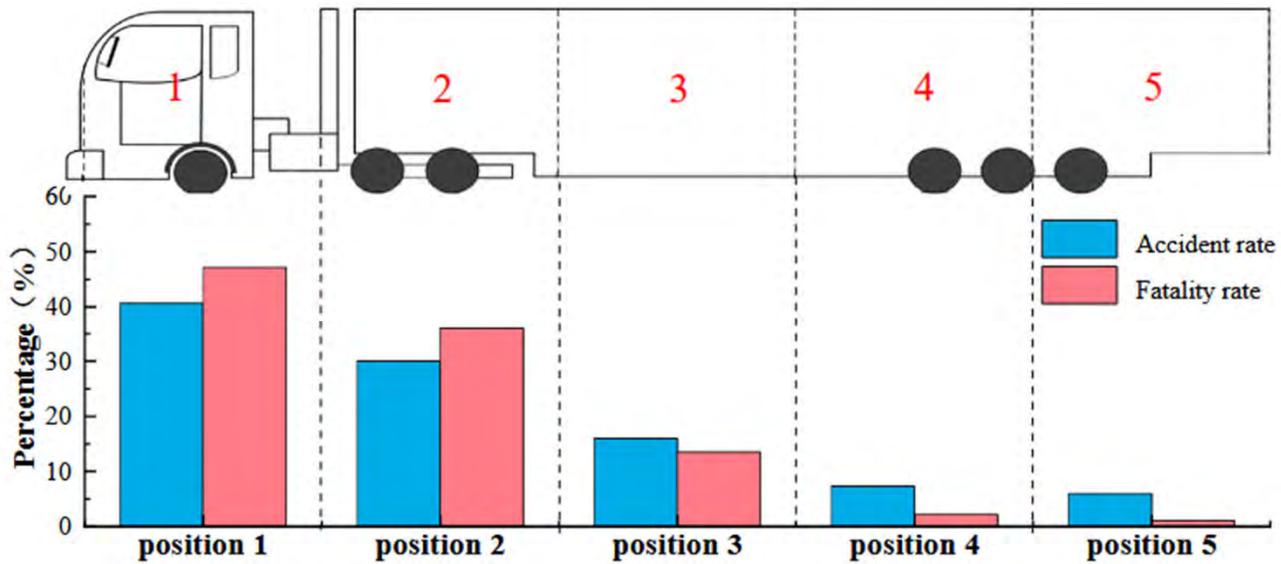


Figure 12. Proportion and accident severity in each division zone of a semitrailer truck.

**Most impacts with VRUs occur in the front two sections – blind spots are a key factor.**

# TECHNOLOGIES THAT HELP REDUCE HARM

Feature	CLOCS-A	TfL PSS	Comment
Applicability	National, voluntary	Mandatory for HGVs > 12t in London	
Tiered Standards	Yes (Bronze, Silver, Gold)	No (single set of requirements)	
Mirrors	Yes	Class V and VI mirrors (or CMS equivalents)	UNECE Reg46 / ADR 14
Camera Monitoring System	Left side cameras from Silver level	Yes	UNECE Reg46 / ADR 14
Blind Spot Monitoring	Yes (from Silver level)	Yes	UNECE Reg 151 / ADR 105
Moving-Off Information System	No	Yes	UNECE Reg 159
Side Underrun Protection	ADR	Yes	UNECE Reg 73 / ADR 106. applies to trucks >2.5 wide - but CLOCS-A requires all
Audible Warning System	From Silver level	Yes	Not specific
External Warning Signage	Yes	Yes	
Telematics	Included at Gold level	Not specified	
AEB	Included at Gold level	Covered by UNR131	Legislation becoming increasingly strict
ESC	Included at Gold level (all HVs required to comply since '22)	Covered by UNR13	
Autonomous Reverse Braking	Included at Gold level	Not specified	
Emissions Standards	Euro V (Silver), Euro VI or ZEV (Gold)	Covered by EURO VI	
Driver Training Requirements	Recommended	Not specified	

# ARE THESE TECHNOLOGIES SUCCESSFUL?



Impact	 <b>London</b>	 <b>Great Britain</b>
Fatalities	Decreased <b>30%</b>	Decreased <b>7%</b>
Serious injuries	Decreased <b>24%</b>	Decreased <b>13%</b>

# PROJECTS EVALUATING VRU PROTECTIONS

## Projects underway

- HVSI BSIS Project (TIC, NHVR, DITRDCA partnership)

## Projects commencing soon

- Examining vision on **new** trucks (including bonneted) i.a.w. UNECE requirements
  - DITRDCA, ANCAP and others
  - Final project specifications pending
- Examining vision on **in-service** trucks
  - Australian Automobile Association, TIC and others
  - Final project specifications pending

**These organisations have agreed to coordinate their research efforts to minimise duplication.**



# TECHNICAL GROUP 1

- Working group consisted of government and industry representatives in addition to the technical contract authors.
- Initially charged with determining appropriate vehicle features to improve VRU safety outcomes in and around work sites
- Responsible for creating the current technical requirements and the tiered structure that has been implemented.

# TECHNICAL GROUP 1

- TG1 has completed its initial task of creating the technical standards and the accreditation framework.
- The CLOCS-A technical standards are not considered static.
- The purpose of TG1 is now being shifted to that of a maintenance role, rather than creating a new technical framework from scratch.

## What is Maintenance of CLOCS-A requirements ?

### Administration

- Make up of TG1
- Handling queries and ad hoc issues.

### Technical

- Considering new VRU safety focused technologies and phase in periods
- How and when to introduce new requirements
- How and when to transition certain requirements to lower tiers
- Considering new VRU safety focused technologies and phase in pervious.

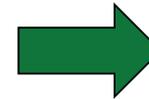
# National Truck Plan - Case for Change

## Today's Reality

- Australia has an old truck fleet by world standard
- Public/Government concern over Heavy Vehicle safety and polluting vehicles (PM; NOx; GHG)
- Trucks are essential to Australia's standard of living

## Desired Future

- A modern Australian truck fleet
- A safer, greener, cleaner Australian truck fleet utilising the significant advances in safety, emissions and fuel saving technologies
- Advanced truck technologies making operators more productive
- Accelerate through financial and regulatory incentives the voluntary adoption of latest vehicles into Australia's truck fleet



## TIC National Truck Plan

- Modernising the Australian Truck Fleet
- Better Safety Outcomes
- Better Environmental Outcomes
- Better Operator Productivity



TRUCK INDUSTRY COUNCIL  
SAFER GREENER ESSENTIAL



THANK YOU

Today's Trucks: Safer, Greener, Essential

[truck-industry-council.org](http://truck-industry-council.org)