Transport for NSW

NSW Heavy Vehicle Access Policy: Safe, productive and sustainable road freight

April 2024

NSW GOVERNMENT

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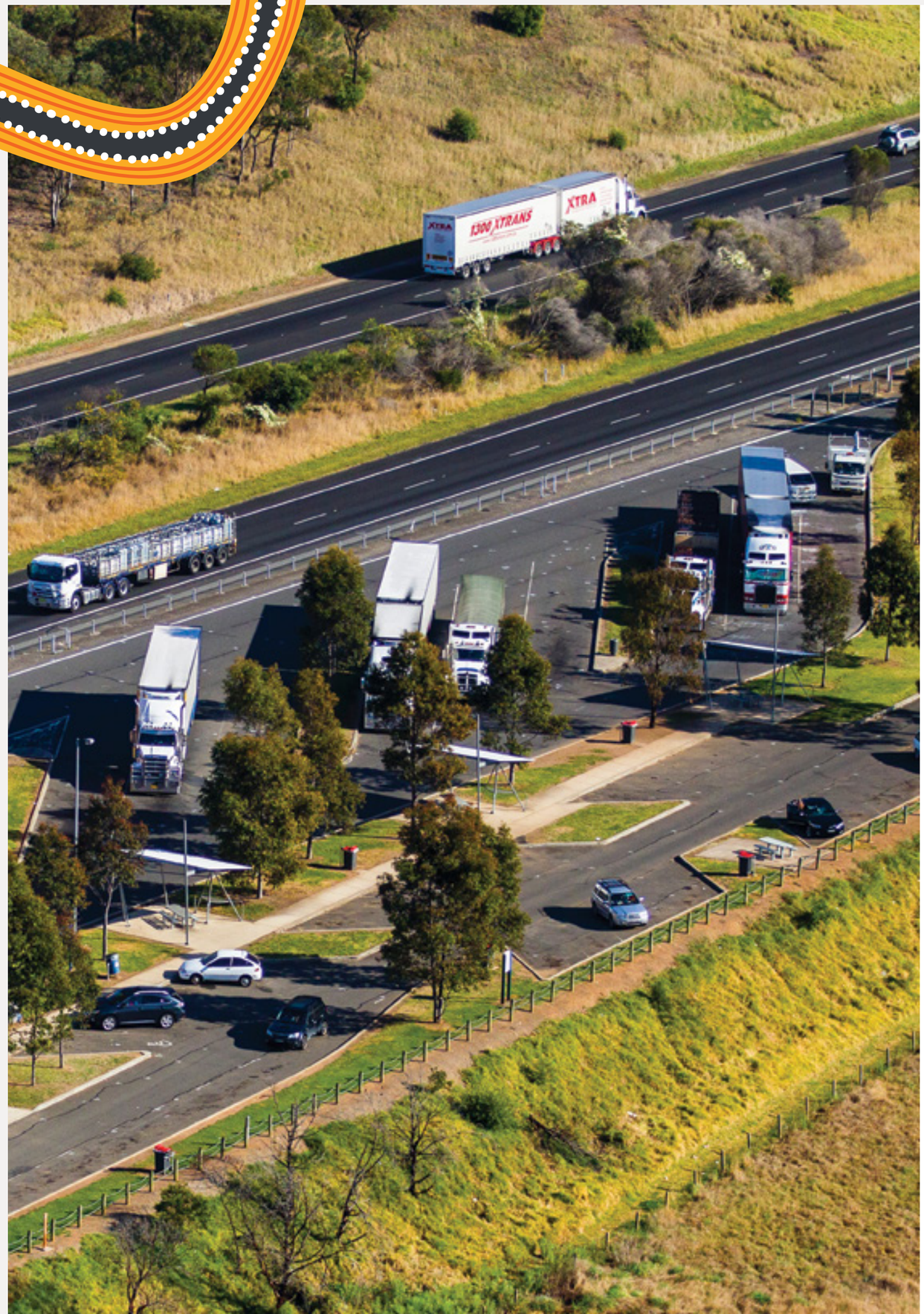

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Acknowledgement of Country

Transport for NSW acknowledges the traditional custodians of the land on which we work and live.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the lands, waters and seas and their rich contribution to society.

Executive Summary

Freight plays a critical role in delivering Australian primary produce, minerals and manufactured goods to the world. It transfers raw materials from source to production or distribution centres, fresh food to supermarkets, and essential medical supplies to hospitals. The efficient movement of goods underpins employment, business opportunities and economic growth.

The growing freight task in NSW is diverse, reflecting the many needs of customers in metropolitan and regional cities, towns and centres that use and rely on the freight network. This requires an efficient and effective freight network that is connected to our local communities and commercial hubs across NSW, and integrated with railways, intermodal terminals (IMTs), ports and airports.

The *NSW Heavy Vehicle Access Policy (HVAP)* was originally released in 2018 to provide a strategic approach to heavy vehicle access in NSW, enabling safer, more productive and sustainable movement of heavy vehicles on the road network, for the benefit of the people of NSW.

There have been significant achievements that have unlocked key freight routes and supported greater access for high productivity vehicles across the NSW road network. But we know there is more we can do, and we are refreshing the Policy to remain responsive and agile to changing markets, emerging technologies, and the increasing freight task.

This Policy delivers new and innovative ways of safely and sustainably optimising access on the NSW road network for heavy vehicles, particularly high productivity vehicles. It supports measures to further improve our understanding of the network's capability and capacity, and encourage the use of safer, more productive and innovative vehicles that are best suited to the freight task. It will drive the improved use of telematics, data and other technology solutions to streamline access decision-making and support building a future focused network.

This will be achieved in partnership with the freight industry, local councils, agencies and key stakeholders who have provided feedback and lessons learned to help frame the path forward.

With a focus on five Pillars and supporting actions, the Policy sets the framework that will create significant benefits to our economy and society by optimising the network and capitalising on the benefits of modern vehicles. By leveraging technology and data to optimise existing assets and better understand our network we can create efficient, resilient supply chains that support the development of successful places and a thriving economy for the people of NSW.

Policy Pillars

Pillar 1: Agile and resilient networks

Expand access and optimise network capacity and capability

1.1	Collaborate with industry, local councils, rail infrastructure managers, Commonwealth and State agencies to develop end-to-end networks
1.2	Support the delivery of the Heavy Vehicle Rest Stop Implementation Plan
1.3	Develop a decoupling policy that supports the movement of high productivity vehicles across the network
1.4	Undertake a network analysis to understand the impact of increased vehicle mass and dimensions on infrastructure, and inform decisions on road access for modern high productivity vehicles and heavy low and zero emission vehicles (LZEVs)
1.5	Develop guidance materials to inform business cases for investment in network improvements to facilitate high productivity vehicle movements
1.6	Continually improve safety for all road users to mitigate risks – in line with commitments in the *2026 Road Safety Action Plan*

Pillar 2: Innovative vehicles

Encourage new and innovative vehicles that can deliver improved freight outcomes

2.1	Develop a database of standard design templates to encourage further innovation in Performance Based Standards (PBS) vehicle design that is best suited to the freight task
2.2	Facilitate industry trials and evaluation of innovative, non-standard vehicles
2.3	Investigate measures to encourage uptake of advanced driver assist and safety technologies - in line with commitments in the *2026 Road Safety Action Plan*
2.4	Investigate measures to facilitate increased access for low and zero emission vehicles - in line with commitments in the *Towards Net Zero Emissions Freight Policy*

Pillar 3: Streamlined access	
Reduce administrative and regulatory burden and prioritise access for the best vehicles	
3.1	Implement the Automated Access Assessment Program (AAAP) to streamline the decision-making and approval process and support intelligent assessments
3.2	Develop a process to prioritise and streamline access approvals including rail infrastructure manager approvals, for the safest, cleanest and most productive heavy vehicles
3.3	Explore opportunities to use notices and schemes to streamline access
3.4	Investigate opportunities to allow vehicles to operate at Concessional Mass Limit (CML) as per General Mass Limit (GML)
3.5	Investigate opportunities to improve Oversize Overmass (OSOM) vehicle movements
Pillar 4: Telematics and data	
Leverage telematics, data and other technologies to improve network management	
4.1	Investigate opportunities for data to improve access, identify and assess network constraints, and to inform network planning and investment prioritisation
4.2	Include telematics as a condition of access for all restricted access vehicles under notice and permit in NSW
4.3	Work with TCA and other jurisdictions to align telematics requirements with other national projects, such as the Heavy Vehicle National Law Review and the Heavy Vehicle Road Reform
4.4	Work with TCA to increase the functionality and useability of telematics data for industry and local councils
Pillar 5: Strong partnerships	
Collaborate with stakeholders to support and improve access	
5.1	Engage with local councils to inform and encourage the development of networks for high productivity vehicles on local and regional roads
5.2	Investigate opportunities to leverage existing road grant funding programs and/or trial new alternative funding approaches to encourage greater access on local and regional roads
5.3	Provide guidance, tools and data to local councils, particularly via the AAAP, to support access assessments, particularly local road capacity and capability of sensitive assets to accommodate high productivity vehicles and other RAVs, such as OSOM vehicles
5.4	Develop guidance materials to support transport and land-use planners in considering requirements for high productivity vehicle and other RAV access in planning, particularly for strategic precincts, intermodal terminals and logistics hubs

1 Future of heavy vehicle access in NSW

1.1 A new approach

Since the first *Heavy Vehicle Access Policy Framework* was released, there has been a strategic shift in Transport's approach to managing transport networks. The rising demand for freight, the impacts of climate change and shifting global trends have created an economic pressure to maximise the road network capacity for freight and capitalise on the benefits of modern high productivity vehicles.

We currently have a unique opportunity to improve the efficiency and utilisation of both the existing infrastructure and fleet which will help realise significant benefits to our economy and society in terms of cost savings, reduced congestion and improved public amenity and safety.

The freight fleet is changing. High productivity vehicles, low and zero emission vehicles (LZEVs) and connected and automated vehicles (CAVs) provide us with an exciting opportunity to reconsider how freight is moved. We want to capitalise on the safety, efficiency and sustainability benefits of **modern vehicles** entering the market. Encouraging an increased adoption of new technologies and providing supportive policies will increase industry's confidence and investment into these vehicles.

The new **Heavy Vehicle Access Policy** (the Policy) supports a new approach to managing the network. It will enable us to build a **future focused freight network** and guides evidence-based policy, planning and investment decisions thus delivering greater value for our customers and assets.

The Policy will deliver new and innovative ways of optimising access for safe, sustainable and productive heavy vehicles on the NSW road network. It will drive the improved use of telematics, data and other technologies to facilitate access and streamline decision-making. It will support measures to further improve our understanding of the network's capability and capacity to accommodate new and innovative vehicles that are best suited to the freight task.

By balancing the competing needs of all road users and the broader community, we will ensure that the freight industry is given appropriate access and any adverse impacts on the community and unintended consequences, such as increased road congestion, road user safety or rail mode share, are appropriately addressed.

This Policy complements broader efforts to improve the productivity of freight transport in NSW. Transport is reviewing current rail policy settings, such as through *Fixing Country Rail*, to improve the capacity, access, efficiency and reliability of rail freight.

The Policy will support more efficient and seamless connections with Inland Rail and with intermodal terminals and ports across the state, which will also help shift more of the road freight task onto rail.

1.2 The growing and evolving freight task and fleet

Freight task

The total freight task in NSW is expected to increase by 34 per cent across NSW, and 56 per cent in Greater Sydney by 2061 as a growing population, higher living standards and online consumerism drives higher volumes. Regional NSW economies will play a continued significant role in that growth[1].

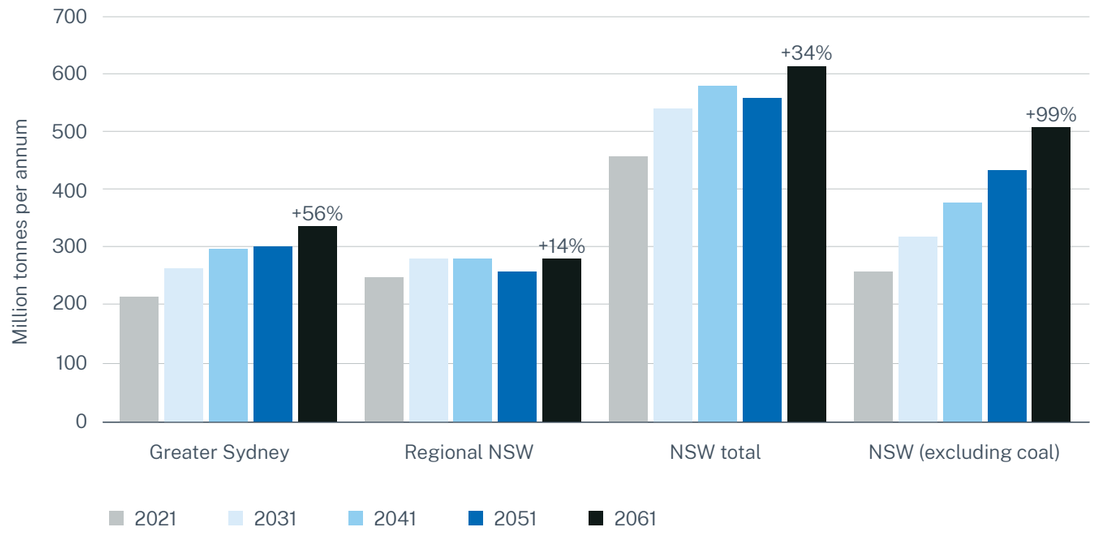
The NSW population is set to reach 11.5 million people by 2061. Sydney's growth comes from overseas arrivals. The NSW economy is rapidly expanding, aiming for $1.4 trillion by 2061. More women, seniors, and part-timers will join the workforce. These changes will boost freight demand[2].

A key task for the freight network over the next 40 years will be to support the growing demand between ports in the east, particularly Port Botany, and freight precincts and strategic economic centres in Western Sydney and across regional NSW. Road freight will continue to grow along major north-south and east-west corridors across the state providing inter- and intra-state connectivity over the next decade.

In regional NSW, coal currently accounts for around 75 per cent of regional freight by volume, but this share is expected to decline in coming decades and other major commodities such as grain, beef, steel and cotton are expected to increase by more than 40 per cent by 2061. This shift in the structure of demand will result in changes to regional areas[3].

Initiatives such as Inland Rail, Special Activation Precincts (SAPs) and Regional Job Precincts will boost regional economies and position regional businesses to take advantage of global markets. These initiatives will result in massive increases in freight flows from regional NSW to key port and market infrastructure.

Figure 1: NSW freight volume forecasts – Future Transport Strategy



1 Transport for NSW 2022, Future Transport Strategy: Our Vision for Transport in NSW, Sydney, accessed September 2022 <https://www.future.transport.nsw.gov.au/sites/default/files/2022-09/Future_Transport_Strategy_2.pdf>

2 Ibid.

3 Ibid.

Freight fleet

The heavy commercial vehicle fleet registered in NSW, which includes trucks, prime movers and trailers, has grown by more than 50 per cent since 2000[4] and is predicted to continue to grow in response to rising freight volumes.

Articulated trucks, which constitute around 2 per cent of the total freight fleet (light and heavy), perform most of the freight task in NSW (in terms of tonne-kilometres). In 2020, articulated trucks contributed to 70 per cent of the total tonne-kilometres by freight vehicles and carried 40 per cent of total commodity volume.[5] Articulated trucks, specifically truck-and-trailer combinations, are responsible for the most productive proportion of the freight task.

Figure 2: Registered heavy vehicles in NSW (as at June 2023) – Transport for NSW

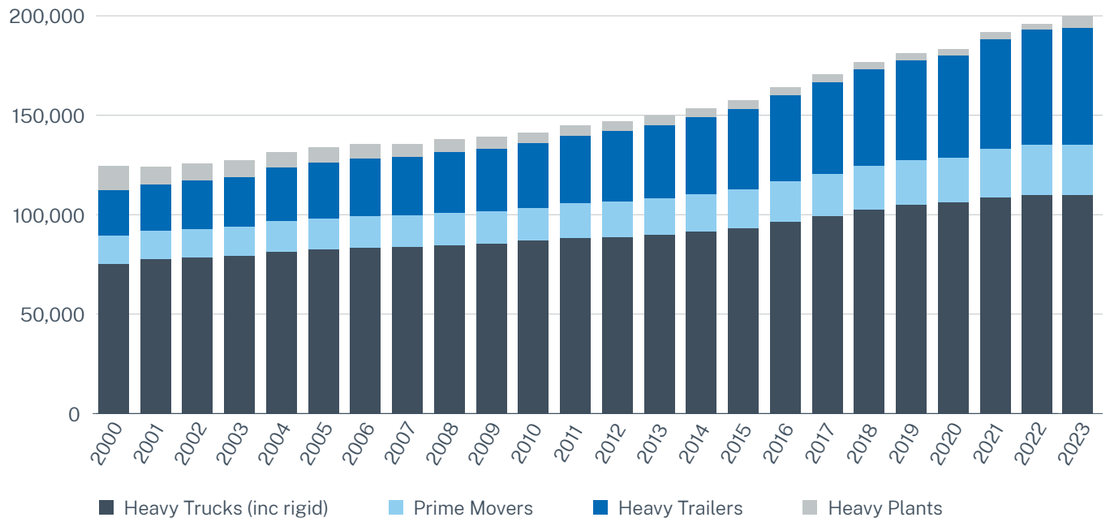
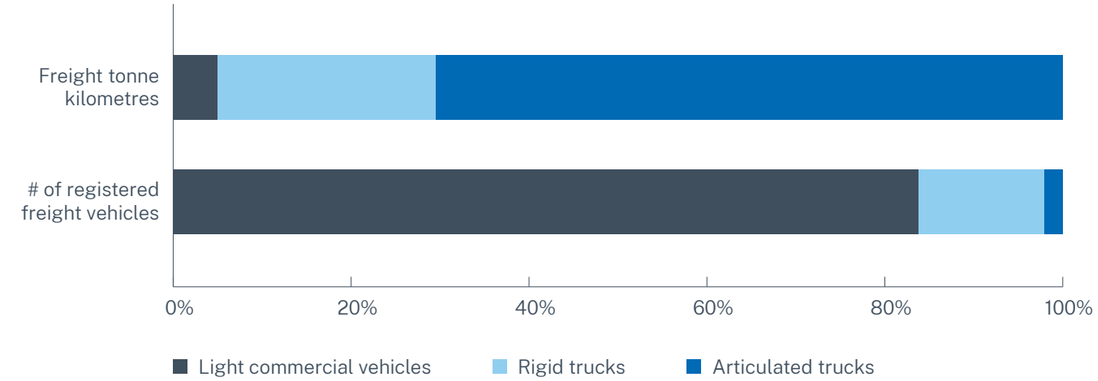


Figure 3: Number of registered freight vehicles, and freight activity, by vehicle type, in NSW (as at June 2020) – Australian Bureau of Statistics



4 Transport for NSW, Vehicle Registration Data, accessed November 2022 <https://www.transport.nsw.gov.au/operations/roads-and-waterways/corporate-publications/statistics/registration-and-licensing-1>

5 Australian Bureau of Statistics 2020, *Survey of Motor Vehicle Use, Australia, 12 months ended 30 June 2020.* <https://www.abs.gov.au/statistics/industry/tourism-and-transport/survey-motor-vehicle-use-australia/12-months-ended-30-june-2020#tonne-kilometres-travelled>

The number of articulated trucks enrolled in the Performance Based Standards (PBS) Scheme has also grown rapidly since the Scheme was established in 2007. By 2020, PBS vehicles achieved a 20 per cent share of the relevant heavy vehicle market in Australia[6].

There are now about 3,000 PBS vehicles operating in NSW, with truck and dog combinations, A-Doubles, B-Doubles, and prime movers and semis being the most common types of vehicle combinations[7]. In 2020, around 10,000 vehicle combinations made up of more than 20,000 individual trucks, trailers and buses were operating across Australia.[8]

The National Transport Commission has forecast that under a moderate growth rate of 7 per cent, there will be between **15,000 – 20,000 vehicles in the PBS fleet in Australia by 2034**.[9] Uptake will likely be much higher with the expansion of PBS 2 and 3 networks, the opening of major corridors, such as the Hume and Pacific highways, to larger vehicles, streamlining of access frameworks, and improved access certainty for new and innovative high productivity vehicles. However, it is also forecast that growth will start to plateau once PBS-approved truck and four axle trailer combinations replace most of the truck and three axle trailer combinations.[10]

The heavy commercial vehicle fleet in NSW is ageing, with around 50 per cent of the registered fleet manufactured before 2010 and 8 per cent manufactured before 1990[11]. Continued operation of aged vehicles imposes costs on the community and the environment through higher levels of air pollution, higher crash risks and trauma costs, lower energy productivity, and more wear and tear of the infrastructure[12].

With modern high productivity vehicles coming into the market, and with the emergence of LZEVs and CAVs, there is now a significant opportunity to renew the fleet with more innovative vehicles that deliver improved safety, productivity and sustainability outcomes.

The recently announced Safer Freight Vehicles reform package will increase vehicle width limits from 2.5m to 2.55m for new trucks that are fitted with advanced safety features, such as devices for indirect vision, lane departure warning systems, advanced emergency braking, blind spot information systems, and side underrun protection, and will see safer heavy vehicles entering the Australian market and operating on our roads.

Accommodating for larger high productivity vehicles is essential in preparing the network for heavy LZEVs. Battery electric vehicles (BEVs) and hydrogen fuel cell electric vehicles (FCEVs), due to their battery size and additional safety technologies, carry an increased mass compared to diesel powered heavy vehicles.

The *Towards Net Zero Emissions Freight Policy* outlines our priorities to decarbonise the heavy freight fleet by 2050. This Policy will support those priorities by considering opportunities to embed sustainability considerations in access arrangements, and facilitate greater access for low and zero emission high productivity vehicles, particularly in urban and regional centres.

6 National Heavy Vehicle Regulatory (NHVR) and ARTSA Institute (ARTSA-i) 2020, *Performance Based Standards – Australia's PBS fleet 2020 Edition, Brisbane, accessed September 2022* <https://www.nhvr.gov.au/files/202006-1047-nhvr-artsa-pbs-report-june-2020.pdf>

7 Data source: National Heavy Vehicle Regulator

8 NHVR and ARTSA-i, 2020, Performance Based Standards – Australia's PBS fleet 2020 Edition. <https://www.nhvr.gov.au/files/202006-1047-nhvr-artsa-pbs-report-june-2020.pdf>

9 Industrial Logistics Institute 2017, *Performance Based Standards Marketplace Outlook Project, Prepared for the National Transport Commission, accessed November 2023* <https://www.ntc.gov.au/sites/default/files/assets/files/Consultant-report-quantifying-benefits-of-PBS-vehicles.pdf>

10 National Transport Commission, 2017, *Assessing the Effectiveness of the PBS Scheme. Discussion Paper August 2017, Melbourne.* <https://www.ntc.gov.au/sites/default/files/assets/files/NTC%20Discussion%20Paper%20-%20Assessing%20the%20effectiveness%20of%20the%20PBS%20Scheme.pdf>

11 Transport for NSW, 2020, Vehicle registration data. New South Wales. <https://www.transport.nsw.gov.au/operations/roads-and-waterways/corporate-publications/statistics/registration-and-licensing-1>

12 Austroads, 2021, Options for Managing the Impacts of Aged Heavy Vehicles. <https://austroads.com.au/publications/freight/ap-r637-21/media/AP-R637-21_Managing_Impacts_of_Aged_Heavy_Vehicles.pdf>. *Note: free registration required to access Austroads publications.

2 Revised policy context

2.1 Managing access for high productivity vehicles

The Policy is **primarily focused on High Productivity Vehicles** which, for the purpose of this Policy, are defined as heavy vehicles that can carry a greater payload than a general access vehicle (which is a typical 19 metre semi-trailer) permitted on a particular road due to being greater in length, width, height or mass (these are therefore classified as "restricted access vehicles").

High productivity vehicles are designed to offer substantial payload efficiencies compared to their traditional counterparts, which means that they can move goods more productively (in terms of tonne-kilometres). The movement of freight can be optimised with more high productivity vehicles replacing general access vehicles and smaller restricted access vehicles, meaning fewer vehicles are required to perform the same task.

This Policy aims to optimise road access for high productivity vehicles, particularly vehicles within the Performance Based Standards (PBS) Scheme that are safer, more sustainable and better equipped to handle the future freight task.

The *PBS Scheme* assesses purpose designed high productivity vehicles against 16 safety standards including powertrain standards, high and low-speed performance, and vehicle stability, as well four infrastructure protection standards. High productivity vehicles that meet these PBS standards perform the same or even better than their traditional prescriptive heavy vehicle counterparts.

Estimates from the National Heavy Vehicle Regulator (NHVR) suggest the average productivity increase of PBS vehicles ranges between 15 and 30 per cent over conventional heavy vehicles. For example, the on-road performance of a Level 2 PBS vehicle is better than a 26 metre B-double, providing 47 per cent greater payload efficiency. Even though it is slightly longer, it has a better swept path performance.[13]

As high productivity vehicles can help to optimise freight movements, they can also reduce congestion and greenhouse gas emissions, improve air quality, and reduce exposure of pavement and infrastructure to heavy vehicles. From 2007 to 2019, PBS vehicles that replaced conventional heavy vehicles across Australia offered several sustainability benefits, including:

- the removal of over 2,700 trucks from roads,
- a reduction in fuel consumption by over 800 million litres,
- a reduction in heavy vehicle distance travelled by over 1.6 billion kilometres, and
- a reduction of carbon emissions by 2.2 billion kilograms[14]

13 National Heavy Vehicle Regulator, 2020, *Heavy Vehicle Productivity Plan 2020-2025.* <https://www.nhvr.gov.au/files/202008-1171-heavy-vehicle-productivity-plan-2020-2025.pdf>.

14 Ibid.

Further, the NTC has estimated that PBS vehicles have been found to be involved in 46 per cent fewer major crashes per kilometre than conventional vehicles.[15]

The original Policy was developed to create PBS networks with connectivity across the whole NSW road network. However, feedback from the freight industry stated that access for high productivity vehicles and PBS vehicles is not optimal on many parts of the network, which impedes freight productivity, increases operating costs, and inadvertently contributes to other issues such as road congestion and environmental sustainability.

The Policy will support the creation of a fit-for-purpose, agile and resilient road freight network where access for PBS vehicles, or equivalent, is optimised and technology and data supports greater efficiencies in the freight and supply chain system.

Why use High Productivity Vehicles?

High productivity vehicles are designed to increase payload efficiencies which leads to significant reductions in vehicle trips, emissions and pavement wear. High productivity vehicles that meet relevant PBS standards can offer substantial productivity, safety and sustainability benefits compared to conventional heavy vehicles.

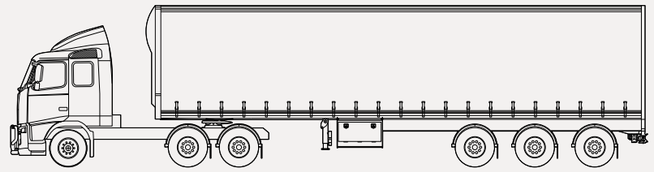
General Access or PBS Level 1

19 metre semi-trailer

24.04 tonnes payload

0.230 ESA/t of payload

1.96L fuel per 100km/t of payload



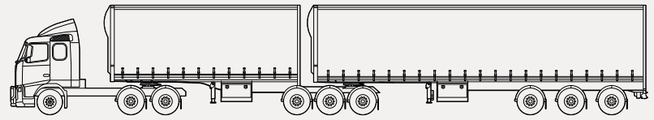
PBS Level 2

26 metre B-double

38.84 tonnes payload ↑ 61.5%

0.178 ESA/t of payload ↓ 22.6%

1.60L fuel per 100km/t of payload ↓ 18.4%



Saves 1 in 3 semi-trailer trips

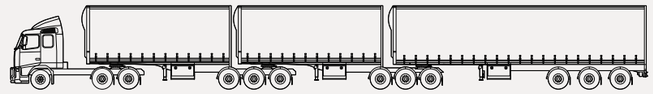
PBS Level 3

35 metre Modular B-triple

52.35 tonnes payload ↑ 34.8%

0.158 ESA/t of payload ↓ 11.2%

1.30L fuel per 100km/t of payload ↓ 18.8%



Saves 1 in 4 B-double trips

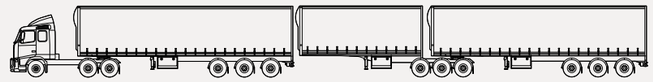
PBS Level 4

42 metre AB-triple

64.00 tonnes payload ↑ 64.8%

0.162 ESA/t of payload ↓ 9.0%

1.17L fuel per 100km/t of payload ↓ 26.9%



Saves 1 in 3 B-double trips

Note: Equivalent Standard Axle or "ESA" is a measure of the relative pavement wear associated with different loads, axle groups and tyre configurations. The ESA for a particular vehicle is the sum of the ESA for each of the vehicle's axle groups. The lower the ESA per tonne of payload, the lower the impact on pavement wear.

15 National Transport Commission 2018, *Reforming the Performance Based Standards scheme*, Melbourne, accessed September 2022 <https://www.ntc.gov.au/sites/default/files/assets/files/NTC-Policy-Paper%20-%20Reforming-the-PBS-scheme.pdf>

2.2 Scope

The Policy applies to all restricted access vehicles (RAVs). General access vehicles (GAVs) are allowed unrestricted access to the NSW road network (except where signposted otherwise) and therefore, are not in scope.

There are several types of RAVs such as Level 1 PBS vehicles longer than 20 metres, PBS vehicles Level 2 and above, B-doubles, road trains (e.g. modern and traditional A-doubles and A-triples), B-triples and AB-triples, 4.6m high vehicles such as livestock vehicles and car carriers, and all heavy vehicles carrying higher mass limits (HMLs), including special purpose vehicles (SPVs), such as mobile cranes, and oversize Overmass (OSOM) vehicles.

There is also an increased effort to ensure the road network can facilitate the greater mass and size of these vehicles safely, for example providing more overtaking lanes, rest areas, and improving bridges and culverts.

While the Policy does not cover passenger transport, it does apply to certain types of buses and coaches, such as controlled access buses (CABs), double decker buses and larger buses (e.g. 2.55 metre-wide buses that meet PBS Level 2 standards).

2.3 Policy and strategic alignment

The NSW Government plays a key role in the long-term planning, vision and management of the NSW transport network. The *Future Transport Strategy* and its supporting plans and strategies aim to deliver high quality transport networks that enable economic activity, create successful places for our communities and connect our customers' whole lives.

The Policy seeks to align with and/or support priorities and commitments in other Transport policies and strategies, including the *Towards Net Zero Emissions Freight Policy*, *2026 Road Safety Action Plan*, Regional Transport Plans, and Place-based Transport Plans, particularly where there is a focus on improving freight efficiency, access and reliability. The Policy aligns with the NSW Government's statewide transport, infrastructure and land-use plans, including the *Greater Sydney Region Plan: A Metropolis of Three Cities* and associated *District Plans*, *Regional Plans* and the *State Infrastructure Strategy*. It also supports efforts to improve heavy vehicle safety and sustainability, particularly through the adoption of low and zero emission vehicles and use of advanced vehicle safety technologies.

The Policy also aligns with national policy initiatives, particularly Australian Government's *National Freight and Supply Chain Strategy* and the NHVR's Heavy Vehicle Productivity Plan 2020–2025 and *Heavy Vehicle Safety Strategy 2021–2025*. This Policy will complement and build on national efforts to improve freight connectivity and access through partnerships and sharing of knowledge and data including the *National Access Framework for Heavy Vehicles* and *Land Transport Market Reform (Heavy Vehicle Road Reform)*.

2.4 Policy principles

The Policy is guided by a set of principles to ensure that it delivers value to our customers and partners and helps achieve Future Transport Strategy and broader community outcomes.

Optimise customer outcomes

Optimise the safety, sustainability and productivity of heavy vehicles operating on our roads for the benefit of the people of NSW

Industry certainty

Increase certainty of access to encourage investment in innovative high productivity vehicles and technologies

Best first

Make it easiest for the safest, most productive and sustainable vehicles to access the network

Future focused infrastructure

Ensure network planning and investments are future focused and evidence based to accommodate new and emerging vehicles, service models and disruptive innovations

End-to-end connectivity

Collaborate with industry and local councils to improve end-to-end access across the network and enhance efficiencies in the supply chain

3 What we have achieved

Since the Heavy Vehicle Access Policy Framework was first released in 2018, we have made significant progress in improving freight connectivity and access across the NSW road network. This has been achieved in part through working in close partnership with local councils to make network improvements and using technology, data and digital tools to facilitate and streamline access.

Key highlights

PBS vehicles

- Access by permit, including pre-approved permit, across Greater Sydney, Port Botany and Regional Priority routes completed
- Interactive PBS network maps published
- Access for 30 metre PBS 2B vehicles over northbound Sheahan Bridge on the Hume Highway completed
- Established agreement for access for Tier 1 GML/ CML/ HML vehicles to 17 bridges (on the basis of use of Road Infrastructure Management (RIM) telematics application) on the Country Regional Network
- PBS Level 3A access on the Newell Highway completed
- Expansion of PBS Level 3A network on freight routes in regional NSW (Ongoing)

Prescriptive vehicles and RAVs

- Access for 36.5 metre road trains under notice on the Newell Highway completed
- Interactive map published for Tier 1 Tandem dolly A-doubles
- Prescriptive Road Train Policy on the Newell Highway released
- Access by permit and notice on approved roads east of the Newell Highway (Ongoing)

Many priority projects identified in the first Policy, originally intended for delivery over a 10-year period, have been achieved ahead of time. Notable achievements include:

- Increased access for modern high productivity vehicles across the state road network, including the development of new PBS Level 2B and Level 3A networks.
- Transitioning from Permits to access by gazettal as-of-right access (Notice) to state road network for 30 metre PBS Level 2B vehicles across Greater Sydney and the regional NSW road network.
- Development of innovative access schemes in collaboration with local councils and industry, such as *Farm Gate Access*, *Grain Harvest Management Scheme*, *NSW Livestock Loading Scheme*, *Safety, Productivity & Environment Construction Transport Scheme (SPECTS), Oversize and/or overmass (OSOM) Scheme*, and *Sugar Cane Harvest Management Scheme*, that are designed to optimise freight access for the benefit of local communities and businesses.
- Development of several Notices and Permit-based schemes under the Heavy Vehicle National Law (HVNL) to facilitate access for restricted access vehicles on the NSW road network.
- Supporting an increased industry adoption of telematics, including Road Infrastructure Management (RIM), Intelligent Access Program (IAP), On Board Mass (OBM) and Telematics Monitoring Application (TMA), which has given greater certainty to industry on access, as well as assurance to road managers on the safe and efficient use of infrastructure.
- Network upgrades completed and currently underway, including pavement and bridge upgrades and new rest areas, on major freight corridors to support efficient and seamless connections.
- Increased use of technology and digital systems, such as bridge monitoring sensors and number plate recognition cameras, to support smarter access decision-making and network management.

There has been significant growth in the number of PBS vehicles and other high productivity vehicles enrolled in various telematics schemes, such as IAP, RIM and TMA, in NSW. These schemes are designed to facilitate safe access for various types of heavy vehicles, including OSOM and SPVs. This growth reflects growing government and commercial interest in the use of telematics to support access management and to inform network planning and investment prioritisation.

4 Key issues and challenges for access in NSW

Network capacity and capability

There is significant potential to optimise the capacity of the existing network using high productivity vehicles, thereby reducing the number of vehicles on the road and total kilometres travelled. This would also have a net positive effect in terms of reduced congestion and infrastructure wear and tear, as well as reducing exposure to air and noise pollution and safety incidents.

While PBS vehicles have the same axle loads as conventional heavy vehicles, many have more axle groups to carry a higher payload. More axle groups reduce the impacts on bridges and pavement. Therefore, they are not considered to cause additional road wear despite carrying heavier loads than their conventional counterparts. PBS vehicles are estimated to have reduced total road and bridge maintenance expenditures in NSW in 2015–16 by about $21 million.[16] These savings will grow as more of the freight task is carried through PBS vehicles.

Nevertheless, there are constraints in the form of sensitive assets, such as pavements, bridges, rail crossings and tunnels, that limit access for heavier, longer and/or wider vehicles to travel through many parts of the local and state road network. There is often limited data available to road managers to assess the effects of heavy vehicles on these assets, which can lead to unnecessary access restrictions. This can result in high productivity vehicles unable to access optimal routes, which can reduce overall productivity and efficiency.

There are also road geometric constraints, such as lane widths, grades and intersection layouts, that create accessibility challenges for larger heavy vehicles. While road design changes or infrastructure upgrades might be needed in some instances to overcome these constraints, the use of modern vehicles equipped with advanced safety features, such as lane keeping assist, collision avoidance and blind spot detection, can help to mitigate the risks posed to infrastructure and other road users, and therefore minimise the need for upgrades.

Transport is improving network capacity utilisation and capability through investments in physical infrastructure upgrades and use of technology, telematics and data that helps inform planning and investment prioritisation.

For example, work is underway to upgrade the southbound Nowra Bridge on the Princes Highway, which cannot currently support vehicles taller than 4.6 metres or HML B-double vehicles, and has been identified as causing significant congestion and impediment to freight movements.[17] The NSW Government is also investing $500 million to upgrade and replace regional timber bridges with concrete bridges through the *Fixing Country Bridges Program*.

Innovative technologies can also help Transport increase the efficiency of existing infrastructure and support the increased use of safer, cleaner and more productive vehicles. For example, connected sensors, automatic number plate recognition cameras and vehicle telematics can help to understand the dynamic performance of sensitive assets including bridges, and support smarter access management.

Transport is developing tools to identify accessibility constraints across our network and undertaking research to investigate the potential impacts of larger and heavier vehicles on our network.

16 National Transport Commission 2017, *Assessing the Effectiveness of the PBS Scheme. Discussion Paper August 2017, Melbourne, accessed September 2022* <https://www.ntc.gov.au/sites/default/files/assets/files/NTC%20Discussion%20Paper%20-%20Assessing%20the%20effectiveness%20of%20the%20PBS%20Scheme.pdf>

17 Transport for NSW, 2023, Nowra Bridge project - Princes Highway upgrade. New South Wales. <https://roads-waterways.transport.nsw.gov.au/projects/nowra-bridges-shoalhaven-river/index.html>

Case study: Tillegra Bridge

The newly upgraded Tillegra Bridge in the Upper Hunter now allows PBS vehicles to access Williams and Allyn Valleys, important for agriculture and logging freight movements. The new bridge will save heavy vehicles a detour of 46 kilometres, substantially reducing travel time for trucks and heavy vehicles.[18]

Supporting infrastructure and facilities for high productivity vehicles

The network requires more heavy vehicle rest and stopping areas, decoupling areas and longer overtaking lanes to accommodate for modern high productivity vehicles, including **up to 60 metre long PBS vehicles**, on key freight routes.

As fatigue is one of the top three behavioural factors for heavy vehicle serious incidents on NSW roads, Transport is delivering improved heavy vehicle rest and stopping areas.[19] This involves the development of more rest areas along key freight routes, upgrading the amenities of current rest areas, and investigating the needs for high productivity vehicles to ensure entries, exits, and parking bays can support larger heavy vehicles.

The freight industry has stated that they need more decoupling facilities to break down larger vehicles into smaller combinations to enter urban areas and local roads. Transport is working in collaboration with the freight industry to improve the provision of these facilities, which will support efficient connections to centres, intermodal terminals and distribution hubs.

Modern PBS vehicles are required to meet safety standards including vehicle stability, allowing other road users more confidence to overtake these vehicles. Overtaking lanes will need to be assessed to ensure safe overtaking of longer vehicles.

Public safety and amenity

Older heavy vehicles pose risks and challenges for public safety and amenity. Due to their size and/or mass they could increase the risk of crashes or the severity of an injury if a crash happens. However, modern high productivity vehicles have better safety and environmental performance than their traditional counterparts. Heavy vehicles equipped with advanced driver assist and safety features, such as automated emergency braking, lane keeping assist and blind spot detection, can help to improve road safety outcomes, such as reduced risk of collision with infrastructure and other road users. Cleaner – and potentially low and zero emission vehicles – help to reduce population exposure to air and noise pollution and greenhouse gas emissions. This Policy is intended to make it easier for the safest and most sustainable vehicles to be on the road and transition older vehicles out.

Facilitating more high productivity vehicles on the network can help optimise movements, which can help reduce congestion and improve traffic flows on freight corridors and in urban and regional cities and centres. Reduced vehicle numbers and fewer vehicle kilometres travelled will deliver improved safety, sustainability and liveability benefits for the wider community.

18 Transport for NSW 2022, *Draft Hunter Regional Transport Plan 2041, accessed December 2022* <https://www.future.transport.nsw.gov.au/sites/default/files/2022-09/draft_hunter_regional_transport_plan.pdf>

19 Transport for NSW 2022, *Heavy Vehicle Rest Stopping Improvements, accessed December 2023* <https://www.transport.nsw.gov.au/operations/freight-hub/heavy-vehicle-rest-stopping-improvements>

5 Strategic outcomes for NSW

Transport is committed to developing a safe, productive and sustainable freight and supply chain system that delivers strong and meaningful outcomes for our customers and communities.

An agile and responsive heavy vehicle access policy has the potential to transform the future mobility of goods. It will enable economic activity and stimulate regional industries, improve safety, deliver improved environmental and public health outcomes, and enrich the freight customer experience.

The Policy supports Transport's strategic outcomes, which shape our focus on making NSW a better place to live, work and visit.

Figure 7: Supporting Transport's strategic outcomes

Enabling economic activity

- Improve the efficiency and productivity of freight on key corridors and in urban and regional centres and strategic precincts
- Improve the efficiency of existing infrastructure
- Provide confidence and certainty that encourages continued investment in high productivity vehicles to support economic growth

Connecting our customers' whole lives

- Create safer freight networks in line with the Safe Systems approach, involving safer vehicles, safer roads and safer people
- Ensure freight networks support end-to-end, efficient and affordable services for customers
- Enhance the role of freight in connecting our regional cities, towns and villages

Successful places for communities

- Support the development of a sustainable supply chain that delivers benefits to our environment and society
- Accelerate the transition to a net zero emissions freight future
- Support local place outcomes through the optimum use of safer, cleaner and productive vehicles

5.1 Enabling economic activity

Freight plays a critical role in driving economic growth and improving the quality of life in NSW. It creates jobs, connects people with essential goods and services, and connects industry with national and global markets. As NSW continues to grow, our freight networks and supply chains must become more efficient, reliable and sustainable to meet the growing demands of our communities.

The Policy supports efficient high productivity vehicle networks with a strong focus on improving the efficiency of freight in urban and regional centres and precincts. Efficient and reliable freight journeys between key freight precincts, such as intermodal terminals, with convenient access to urban and regional centres, is important to support local and regional economic growth. Allowing freight to move more freely is important for businesses to maintain access to local, interstate and global markets.

The productivity of Greater Sydney and regional NSW communities depends on goods being moved safely, efficiently and reliably. With the growth of economic centres and freight generating precincts through NSW, it is important to ensure appropriate access to freight services. For example, with the growth of Armidale and Tamworth and the development of Special Activation Precincts (SAPs) in Moree and Narrabri, the New England North West region in NSW will see significant growth in the freight task, therefore requiring more efficient freight connections to ports and airports in Sydney, Newcastle and onwards in South East Queensland.

The Hunter and Riverina-Murray regions will increase their role as major freight destinations with the development of Williamtown and Wagga Wagga SAPs, respectively. Improvements to freight connections to regional and inter-state ports and intermodal terminals will continue to be an opportunity into the future.

Similarly, the development of the Melbourne to Brisbane Inland Rail has the potential to transform the Central West and Orana region into a major freight hub. Further improvements to increase connectivity for high productivity vehicles can unlock further economic potential within the region.

Optimised networks for high productivity vehicles, combined with investments in infrastructure, can enable and support rapid market access and distribution in growing centres and effective connections to/from global gateway cities, such as Sydney, Newcastle and Canberra, therefore supporting economic growth opportunities in regional NSW.

This Policy supports our economic priority to **deliver more with less**, which involves improving the efficiency and utilisation of both the existing infrastructure and fleet.

Supporting the use of high productivity vehicles can deliver substantial operational cost savings to industry. International estimates suggest that although larger and heavier heavy vehicles can increase per truck transport costs by 5–12 per cent, the corresponding 10–50 per cent decrease in the number of heavy vehicles required to move the same volume results in an overall decrease in transport costs per tonne kilometres.[20]

The wider adoption of new and innovative types of vehicles, including CAVs and LZEVs, innovative design combinations for high productivity vehicles, and onboard management technologies, such as telematics, will help to further improve the productivity of the road freight sector. They will enable innovative types of freight services, such as hub-to-hub automated operations, and help to improve efficiency by creating opportunities for seamless intermodal connectivity.

5.2 Connecting our customers' whole lives

Our customers expect a high-quality freight network that delivers safe, accessible, reliable and affordable delivery options. With e-commerce and online shopping trends continuing to grow, customers are increasingly demanding faster and more frequent deliveries. Our customers in remote and rural areas also require access to affordable freight services to help improve their quality of lives and grow their businesses.

With the emergence of safer, cleaner and more productive vehicles, there is a significant opportunity to create efficient and seamless end-to-end freight networks, as well as strengthen connections with local communities and businesses in regional cities, towns and villages. A well-connected freight network can unlock new business-to-business and business-to-customer opportunities, and more options on where to order goods from and the availability of different modes of transport.

Improved connectivity and last-mile access for heavy vehicles in urban and regional centres and neighbourhoods will also support community outcomes and help build a sustainable transport system. This will directly benefit small businesses that rely on easy and cheap access to customers and suppliers to remain competitive.

The Policy adopts the Safe Systems approach which ensures that safety is prioritised as freight networks grow. Increasing the safety of heavy vehicles on our roads, particularly through the adoption of advanced vehicle technologies, is a key priority of the *2026 Road Safety Action Plan* which seek to put NSW on a path towards **zero road trauma by 2050**.

Modern high productivity vehicles, particularly vehicles within the PBS Scheme, have better safety performance in terms of braking capability and rollover stability, and are often equipped with modern safety features, such as automated emergency braking, lane keeping assist, driver monitoring systems and side underrun protection. PBS vehicles have been found to be involved in 46 per cent fewer major crashes per kilometre than conventional vehicles.[21] Austroads have estimated that if that the entire freight task was completed by PBS vehicles, it could save up to 96 lives by 2030.[22]

5.3 Successful places for communities

With the growing pressure to deliver sustainable outcomes and a push towards achieving net zero emissions by 2050, industry, state and local governments have a shared commitment to work together to encourage the use of safer, cleaner and more efficient vehicles by optimising access to the network.

The Policy has been designed to support the development of a sustainable freight and supply chain system that delivers benefits to our environment and economy. By using more productive and fit-for-purpose vehicles, we can optimise truck movements and reduce emissions per kilometres travelled, reducing the exposure to air and noise pollution.

We can improve the amenity of cities, towns and residential neighbourhoods along road freight corridors, and of places around ports, intermodal terminals, logistics hubs and distribution centres. Cleaner and quieter vehicles can support local place outcomes, such as 24/7 markets or the creation of walkable neighbourhoods. Modern high productivity vehicles with high safety performance can also deliver improved road safety outcomes, such as reduced risk of heavy vehicle collision with other road users or roadside assets.

Local businesses and residents, particularly in regional and remote areas, will benefit from faster and more efficient deliveries enabled by high productivity vehicles. As modern, and potentially low and zero emission high productivity vehicles have an overall reduced impact on the local place infrastructure, opening up additional access to them can benefit customers based in commercial centres and residential neighbourhoods.

With fleet decarbonisation as a key strategic priority for the freight industry and the NSW Government, we will see an accelerated transition to cleaner heavy vehicles. LZEV technologies offer substantial operational and maintenance cost savings, compared to diesel counterparts, and will further enhance the performance and benefits of high productivity vehicles equipped with these technologies.

As LZEVs are currently heavier than diesel vehicles, due to their battery size, they may pose additional challenges for access. Future freight networks and access provisions will need to be tailored and upgraded, where necessary, to accommodate a growing fleet of LZEVs. Transport will continue to advance our understanding of the impact of heavier and larger vehicles on our network, including sensitive assets such as bridges, pavement and level crossings.

20 International Transport Forum 2021, *Transport Climate Action Directory – High Capacity Vehicles, accessed September 2022* < https://www.itf-oecd.org/policy/high-capacity-vehicles >

21 National Transport Commission 2018, Reforming the Performance Based Standards scheme, Melbourne, accessed September 2022 <https://www.ntc.gov.au/sites/default/files/assets/files/NTC-Policy-Paper%20-%20Reforming-the-PBS-scheme.pdf>

22 Austroads 2014, Quantifying the Benefits of High Productivity Vehicles, Sydney, accessed September 2022 <https://austroads.com.au/publications/freight/ap-r465-14>

6 Policy pillars

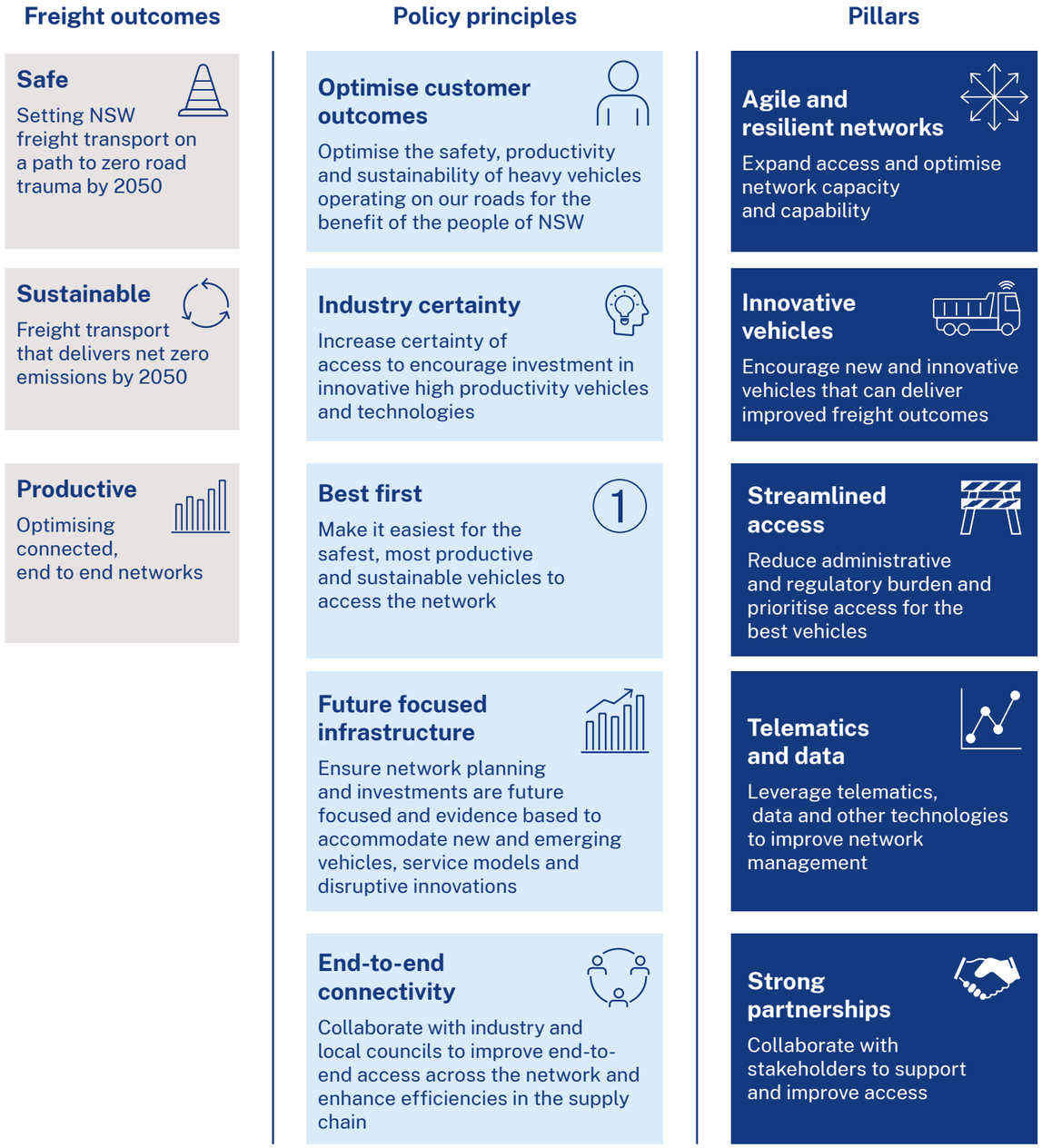
Developing a seamless, efficient and reliable freight network for NSW and optimising access for heavy vehicles across the state and local road network is a challenging task and requires coordinated efforts from various partners and stakeholders.

Based on a review of the first Heavy Vehicle Access Policy Framework, new research, and stakeholder engagement, we have identified the following key policy pillars that will shape our priorities and actions for optimising access.

These pillars provide a sound basis for policy intervention in a range of areas, including regulation, planning, infrastructure and technology.

Transport will work in close partnership with industry, local councils and other government agencies to deliver the actions listed under these pillars.

Figure 5: Policy principles and pillars aligned with Transport and freight outcomes



6.1 Pillar 1: Agile and resilient networks

Expand access and optimise network capacity and capability

Supporting a growing freight task and the safe, efficient and reliable movements of goods will require more agile and resilient networks for moving goods between trade gateways and freight precincts, such as from port to warehouse, and providing convenient access to centres. Freight networks will need to be optimised so they can support the increasing freight task demanded by consumers and industry.

We need to manage our networks at different scales so we can more effectively respond to changing movement patterns. This includes being able to quickly create new freight networks or change existing ones to accommodate new types of high productivity vehicles and freight service models by improving infrastructure and providing facilities, such as new and upgraded heavy vehicle rest areas and longer overtaking lanes.

We also need to make networks more resilient so we can **get the most out of our existing infrastructure** on the freight networks. A smarter approach to access for high productivity vehicles, combined with the use of technology to monitor and manage impacts, can keep networks moving and defer the significant costs of new or upgraded infrastructure.

The development of agile and resilient networks requires **a shift in focus from network preservation to optimisation.** This means that the basis for access decision-making must move from preserving assets to optimising the use of those assets by safe, productive and sustainable vehicles whilst minimising the impact of ageing and polluting vehicles on those assets.

This Policy aims to **optimise high productivity vehicle access on all parts of the road network** where it is safe to do so or where risks to infrastructure, local amenity, or to other road users can be appropriately managed.

This Policy will complement and build upon efforts through the *2026 Road Safety Action Plan* to develop safer transport networks, involving safer roads, safer vehicles and safer people. Road safety management approaches will be prioritised to enhance the safety around heavy vehicles in urban areas and local communities, and particularly ensuring the safety of vulnerable road users, such as pedestrians and cyclists.

We will undertake research and analysis to help us understand the likely operational and cost impacts on infrastructure, such as road pavements, tunnels, bridges and kerbside spaces as well as the future implications for network and infrastructure design.

Strategic opportunities for expanding access

This refreshed Policy presents a significant opportunity to rethink how future heavy vehicle access could better align with the projected population growth, development of strategic centres across NSW and freight movement patterns.

An important strategic priority for Transport is to strengthen north-south (including to Queensland, South Australia and Victoria) and east-west (to inland NSW) freight connectivity in order to develop connected, efficient and reliable end-to-end supply chains, which can support the growing NSW economy and meet the needs of both metropolitan and regional freight customers.

Freight connections will also need to be strengthened to support the continued growth of new regional primary industries and the development of SAPs, education, health and employment precincts, and access to regional intermodal terminals, ports and airports across NSW.

Efficient access to council-owned local roads, which provide connection to local freight hubs and neighbourhoods, is critically important for freight operations. We are already working with local councils to facilitate first and last mile access on local roads, for example through the Farm Gate Access Program, to support the safe and productive movement of heavy vehicles.

Figure 6: Existing and future NSW road network and links to ports and airports – Future Transport Strategy

KEY

Hubs

- Capital city
- Metropolitan centre
- Metropolitan city
- Regional city
- Strategic centre
- Local centre
- International freight port
- International airport
- Special Activation Precincts

Existing
Operational infrastructure and services

- State roads
- National Land Transport Network (Roads)

NSW regions

- Hunter
- North Coast
- Metropolitan Sydney
- Illawarra
- South East and Tablelands
- New England/ North West
- Central West and Orana
- Riverina Murray
- Far West

Six Cities

- Lower Hunter and Greater Newcastle City
- Central Coast City
- Eastern Harbour City
- Western Parkland City
- Central River City
- Illawarra-Shoalhaven City

The following table identifies our three major access priorities – **improve north-south connections; improve east-west connections; and improve first and last-mile access**.

Table 1: Strategic access priorities

Access priority	Strategic access opportunities
Improve north-south connections	
North-south connectivity across Greater Sydney	Improve freight connectivity to strategic centres and freight hubs across Greater Sydney, particularly to Campbelltown-Macarthur and Liverpool in the south
Connectivity to/through north, north-west and Far West NSW and to Queensland	**Central Coast:** key cities and centres, including Gosford, and key freight and logistics hubs along the M1 Pacific Motorway **Hunter:** key cities and centres, such as Newcastle, and strategic hubs, such as the Port of Newcastle, Newcastle Airport, Williamtown SAP, Tomago industrial park and the Black Hill Employment Precinct **North Coast:** key centres and cities, including Port Macquarie, Coffs Harbour, Grafton, Lismore and Tweed Heads, strategic hubs, such as the Port of Yamba and the Casino Industries Activation Precinct, as well as ports and airports in South East Queensland **New England North West:** key cities and centres, including Armidale and Tamworth, strategic hubs, such as the Moree SAP and the proposed SAP in Narrabri, as well as bordersite IMTs in Bromelton and Goondiwindi in Queensland
Connectivity to/through south, south-west and Far West NSW and to ACT, Victoria and South Australia	**Illawarra-Shoalhaven:** key cities and centres, including Wollongong, Shellharbour and Nowra, and strategic hubs, such as Port Kembla, South Nowra Employment Precinct and Albatross Aviation Technology Park **South East and Tablelands:** key cities and centres, including Young, Goulburn, Moss Vale and Cooma, strategic hubs, such as the Port of Eden and Snowy Mountains SAP, as well as to Canberra and IMTs in Fyshwick (ACT) and Kingston (ACT) **Riverina-Murray:** key cities and centres, including Wagga Wagga, Griffith and Albury, strategic hubs, such as Wagga Wagga SAP, Riverina Intermodal Freight and Logistics Hub, Western Riverina Connect Intermodal Freight Terminal and Albury Regional Job Precinct, as well as to Victoria and South Australia, including bordersite IMT in Wodonga (VIC)
Improve east-west connections	
East-west connectivity across Greater Sydney	Improve freight connectivity to strategic centres and freight hubs across Greater Sydney, particularly to Port Botany in the east and Parramatta, Penrith and Western Sydney Airport in the west
Connectivity to/through western NSW and to South Australia and Victoria	**Central West and Orana:** key cities and centres, including Dubbo, Lithgow and Parkes, strategic hubs, such as Parkes SAP, as well as connections to the Melbourne to Brisbane Inland Rail **Far West:** key cities and centres, including Broken Hill, strategic hubs, such as IMTs near Ivanhoe and Walgett, as well as to South Australia and Victoria, including bordersite IMTs in Merbein (VIC) and Mildura (VIC)
Improve first and last-mile access	
Access to strategic sites	Improve first and last-mile freight connectivity to intermodal terminals, ports, airports and strategic hubs and precincts, including • Western Sydney Airport • Sydney Airport • Other metropolitan and regional airports • Metropolitan and regional ports, including Port Botany, Port of Newcastle and Port Kembla
Access to strategic sites (continued)	• Intermodal terminals in metropolitan and regional areas, such as Enfield, Chullora, Moorebank, St Marys, and the proposed Western Parkland City IMT • Urban consolidation of distribution centres • Charging or refuelling facilities for low and zero emission heavy vehicles • Special zones, e.g. SAPs, special industrial zones, regional employment precincts, renewable energy zones.
Access on local roads	Expand first and last-mile freight access on council owned roads (*subject to council approval)

Appendix A provides a detailed version of the above table. It includes strategic freight roads under each sub priority and proposed PBS network access for each road. These networks are a future vision and will be progressively implemented as networks are designed or upgraded.

Case Study: Improving access to the Wagga Wagga Special Activation Precinct

The Wagga Wagga Special Activation Precinct (SAP) will establish Wagga Wagga as the key intermodal freight hub for the region, delivering seamless integration between road and rail freight movements and wider economic benefits for the growing population.

Transport for NSW is working closely with the Wagga Wagga City Council to facilitate greater access for PBS vehicles to the SAP. This includes PBS Level 3 for the Olympic and Sturt Highways and Level 2B and 3A for key local roads to ensure end to end connectivity for these strategic sites.[23]

Proposed networks and access conditions for heavy vehicle classes

Along with the Policy, the networks for various prescriptive and PBS vehicle classes have been reviewed and updated to ensure they are fit-for-purpose. Access conditions and requirements for various heavy vehicle classes, such as requirements around telematics and use of vehicle safety technologies, have also been considered. These are provided in *Appendix B*.

Appendices A and B are intended to be stand-alone, living documents that will be periodically reviewed and updated based on stakeholder engagement.

	Pillar 1: Agile and resilient networks Actions
1.1	Collaborate with industry, local councils, rail infrastructure managers, Commonwealth and State agencies to develop end-to-end networks
1.2	Support the delivery of the Heavy Vehicle Rest Stop Implementation Plan
1.3	Develop a decoupling policy that supports the movement of high productivity vehicles across the network
1.4	Undertake a network analysis to understand the impact of increased vehicle mass and dimensions on infrastructure and inform decisions on road access for modern high productivity vehicles and heavy low and zero emission vehicles
1.5	Develop guidance materials to inform business cases for investment in network improvements to facilitate high productivity vehicle movements
1.6	Continually improve safety for all road users to mitigate risks – in line with commitments in the *2026 Road Safety Action Plan*

23 Transport for NSW 2022, *Wagga Wagga Transport Plan, Sydney,* <https://www.future.transport.nsw.gov.au/future-transport-plans/wagga-wagga-transport-plan>

6.2 Pillar 2: Innovative vehicles

Encourage new and innovative vehicles that can deliver improved freight outcomes

We are encouraging the use of safer and more sustainable high productivity vehicles on our road network by **moving to performance-based indicators** that seek to maximise the overall safety, operational and environmental performance of the vehicles. This will allow us to get the best available heavy vehicles on our road networks as quickly as possible.

This policy will facilitate **greater access for safer and cleaner high productivity vehicles**, including heavy LZEVs and vehicles equipped with advanced driver assist and safety features such as automated emergency braking, electronic stability control, lane keeping assist and intelligent speed assist. Opening up more of the NSW road network to these vehicles, particularly those that meet relevant PBS standards, will provide industry with the certainty required to invest in these vehicles. The use of these vehicles also provides greater assurance to road managers and the community that increased access does not create adverse impacts for public health, safety and amenity.

Given the rapid pace of technological advancement and the emergence of CAVs in the near future, we will also ensure that freight networks are able to maximise the benefits from these vehicle technologies as soon as possible. This Policy will help to ensure that future freight networks and access frameworks are fit-for-purpose and can appropriately accommodate these vehicles.

To encourage industry to adopt innovative vehicles or optimise their existing fleet, Transport has collaborated with industry to design several vehicle templates to provide examples of innovative vehicles that can access the NSW network. These templates facilitate innovative vehicle combinations that are fit-for-purpose. These vehicle combinations are designed to perform to PBS standards and improve productivity by up to 70 per cent.

The templates will be made available to all operators with network access provisions attached. Some of the new vehicle templates have been designed to use existing trailer stock to account for the expensive, and currently, time costly process of acquiring new trailer stock. A set of proposed designs can be found in *Appendix C*.

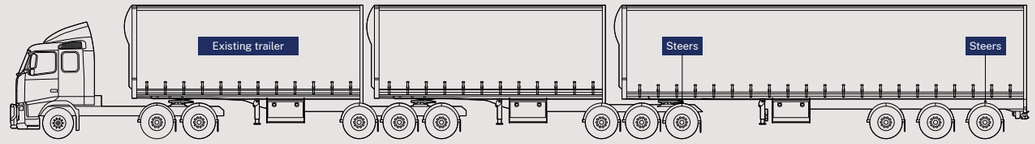
Case Study: Snowy Hydro 2.0 Project, Snowy Mountains Highway

Transport for NSW collaborated with industry to design an innovative PBS Level 2 vehicle that was specifically suited for the construction of 27km long tunnels to support the Snowy Hydro 2.0 renewable energy project. The design cut truck trips from 97,000 to around 32,000 trips – a 67 per cent reduction, which delivered significant benefits for the communities of Cooma and Adaminaby in south NSW in terms of congestion, road safety, and noise and air pollution.

Proposed vehicle designs – to be approved

PBS Level 2 Modular B-triple

>52-tonne payload



This vehicle offers the same on-road performance as a traditional 26m B-double but has the capacity to carry over 52 tonnes, over 30 per cent increase in payload compared to a 26 metre B-Double. This design is also able to take current trailer stock and add radically improved combinations, taking into consideration the cost and supply chain barriers that are involved in currently acquiring new trailer stock.

PBS Level 3 BAB-Quad

>78-tonne payload

In comparison to a type 1 road train (A-double), which can carry a payload of 49 tonnes, this PBS Level 3 BAB-quad design can carry over 78-tonne payload. That is a 60 per cent increase in payload, while still performing the same as a type 1 road train.

	Pillar 2: Innovative vehicles Actions
2.1	Develop a database of standard design templates to encourage further innovation in PBS vehicle design that is best suited to the freight task
2.2	Facilitate industry trials and evaluation of innovative, non-standard vehicles
2.3	Investigate measures to encourage uptake of advanced driver assist and safety technologies - in line with commitments in the *2026 Road Safety Action Plan*
2.4	Investigate measures to facilitate increased access for low and zero emission vehicles - across the network, in line with commitments in the *Towards Net Zero Emissions Freight Policy*

6.3 Pillar 3: Streamlined access

Reduce administrative and regulatory burden and prioritise access for the best vehicles

Industry feedback highlighted significant concerns in red-tape delays and the regulatory burden on operators seeking access to the road network. We are committed to making access decision-making and processing faster, consistent, more transparent and less complex for applicants.

Transport for NSW is developing an **Automated Access Assessment Program (AAAP)** that would help streamline access decision-making and approvals, including automated assessments for routes and assets. It would support the collection and collation of state road network data and local council asset data. The AAAP would have an interface with Transport Certification Australia's Telematics Analytics Platform (TAP) and other systems, such as automatic number plate recognition, which would provide advanced network utilisation information.

Through the introduction of the AAAP and a database of innovative vehicle design templates, we will **accelerate approvals** so operators can submit applications more quickly and do not have to provide the same information multiple times. This will provide a direct benefit to industry in terms of reduced administration, reduced approval delays and lower risk of making errors, as well as improving the operational and cost efficiency in the assessment and approval process.

In the future, we want to **transition away from permits to notices** or similar arrangements that could provide certainty of access to industry, including for PBS and OSOM vehicles, with a focus on strategic freight routes and hubs as a priority.

These initiatives, combined with measures to develop freight networks and support innovative vehicles, will provide greater certainty to industry to invest in high productivity vehicles and advanced technologies for their operations.

We will work with industry to remove roadblocks to productivity through the following actions and will utilise improved governance arrangements and the stability of the decision-making framework for access decisions.

Case Study: Drought Recovery Freight Initiatives

To support industry to recover from the 2020–21 drought in NSW and take advantage of a forecast large grain harvest, additional access was granted to high productivity vehicles transporting commodities such as fodder, water, grain, and livestock. Conditional access was granted to road trains on key routes and to priority grain terminals, certain high productivity vehicles were granted expanded access into participating local government areas under the *Grain Harvest Management Scheme*. Increased access saved around 4,275 truck trips and improved productivity by 15 per cent.[24]

Pillar 3: Streamlined access Actions	
3.1	Implement the Automated Access Assessment Program (AAAP) to streamline the decision-making and approval process and support intelligent assessments
3.2	Develop a process to prioritise and streamline access approvals, including rail infrastructure manager approvals, for the safest, cleanest and most productive heavy vehicles
3.3	Explore opportunities to extend notices and schemes to streamline access
3.4	Investigate opportunities to allow vehicles to operate at Concessional Mass Limit (CML) as per General Mass Limit (GML)
3.5	Investigate opportunities to improve Oversize Overmass (OSOM) vehicle movements

24 Transport for NSW, 2021, *Evaluation of Drought Recovery Freight Initiatives. New South Wales.* <https://roads-waterways.transport.nsw.gov.au/documents/business-industry/heavy-vehicles/evaluation-of-drought-recovery-freight-iniatives-2021-09.pdf>

6.4 Pillar 4: Telematics and data

Leverage telematics, data and other technologies to improve network management

Telematics

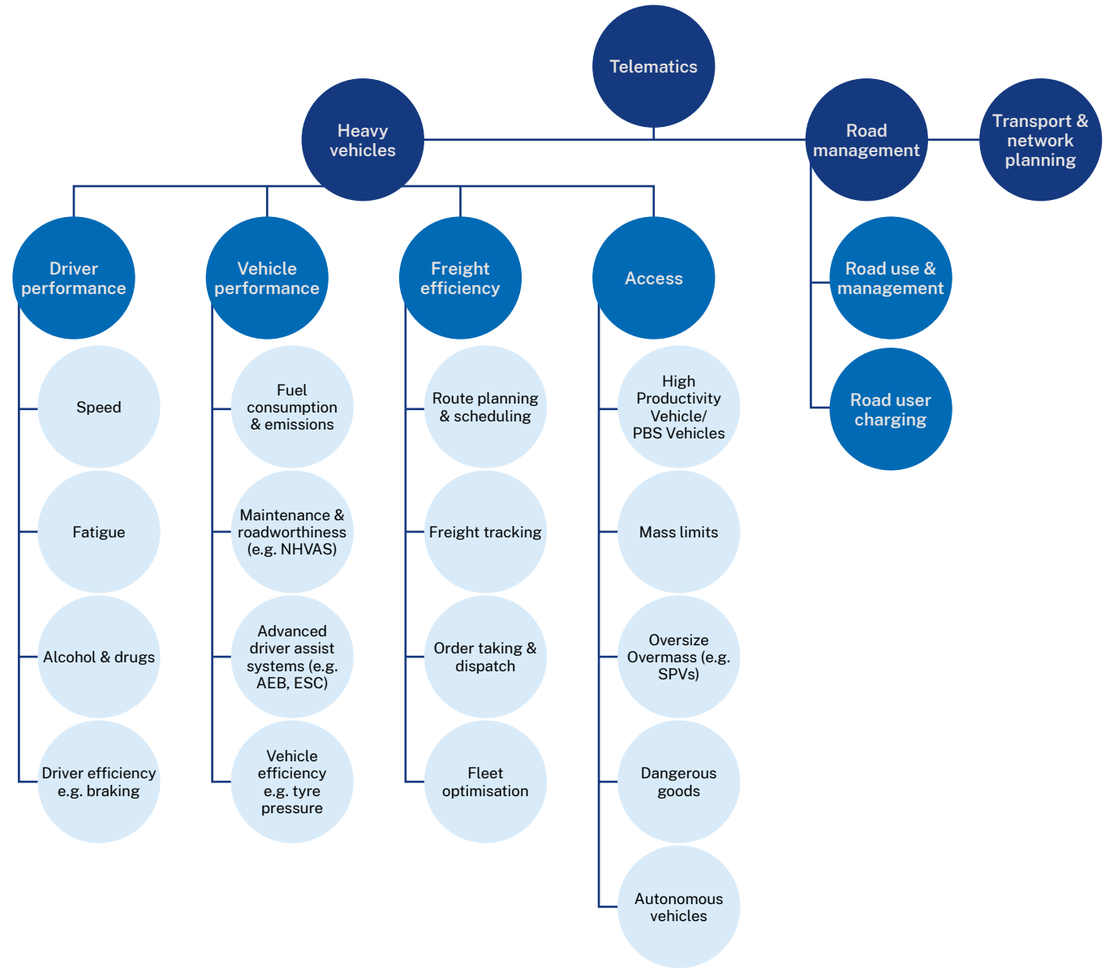
Telematics is an incredibly valuable technology and data source that can be applied to a wide range of policy, planning and operational areas, such as road safety, congestion management, driver safety, and asset maintenance, to deliver benefits for both government and industry. With advancements in telematics technologies and the development of new and innovative telematics schemes, there are significant opportunities to leverage telematics to improve freight productivity on the road network.

The Policy supports an increased use of telematics to help facilitate greater access, support evidence-based access decision-making, and assess network performance, including the effects of modern high productivity vehicles on sensitive assets.

Promoting the industry adoption of telematics and the sharing of telematics data with state and local road managers is a critical link to achieve increased network access. By partnering with industry, we plan to support faster and smarter access decision-making and proactive identification of additional routes for access.

We want to leverage telematics to provide greater certainty to industry to invest in technologies and solutions that improve their productivity and efficiency. We will continue to promote the use of telematics as a condition for access for high productivity vehicles, particularly for access to sensitive road assets by larger and heavier vehicles, and increasingly link it to access arrangements under notices and schemes.

Figure 7: Range of areas telematics can be used



Case Study: Farm Gate Access Program

The Farm Gate Access Program is a joint NSW Government, local council, and industry initiative to improve first and last mile connectivity to the farm gate network. It introduces conditional area-wide access for high productivity vehicles transporting livestock and grain on local roads in participating council areas. As a condition of access all operators must enrol in the RIM telematics application.

The program has offered real productivity gains to industry by providing them additional access to the local and regional network. Meanwhile, councils are provided with telematics data to better understand how their road assets are used, which can inform maintenance activities and future investments.

Intelligent network and assets

Transport is strongly committed to leveraging technology and innovation to transform and deliver a world-class customer experience.

We are capturing and sharing data from a wide range of new sources, including telematics, cooperative intelligent transport systems and infrastructure sensors to enable a more holistic view of the supply chain. Intelligent systems powered by AI are helping to dynamically optimise networks and proactively manage safety and congestion impacts.

Technology can play an **important role in optimising our network**, including to help identify and mitigate constraints and support the efficient use of infrastructure. Data from road sensors, telematics and vehicles can give us a better understanding of heavy vehicle movement patterns and the utilisation of vehicles, help identify key freight routes, and help assess existing network capacity, e.g. mass limits for heavy vehicle access. In the future, this could enable proactive and potentially even real-time access decisions based on real-time network intelligence.

Intelligent sensors on sensitive assets, such as pavement, bridges and rail crossings, can provide road managers with access to real-time data on the dynamic performance of these assets and the effects of a heavy vehicle on them when making access decisions. Such data can help us optimise the use of these assets by safe, productive and sustainable vehicles whilst minimising the impacts by ageing and polluting vehicles.

These technologies can therefore not only inform data-driven decisions but also help state and local governments effectively respond to industry and community concerns and manage socioeconomic trade-offs, such as balancing freight efficiency versus local place amenity outcomes.

Case study: Technology enhances use of the northbound Sheahan Bridge

Using bridge monitoring devices, automatic number plate recognition cameras with machine learning functionality and onboard telematics, access to the northbound Sheahan Bridge on the Hume Highway has been lifted from 68.5 tonnes to 85 tonnes. Technology helped to facilitate an innovative approach to asset management to improve access, while more permanent infrastructure options are being investigated.

Pillar 4: Telematics and data Actions	
4.1	Investigate opportunities for data to improve access, identify and assess network constraints, and to inform network planning and investment prioritisation
4.2	Include telematics as a condition of access for all restricted access vehicles under notice and permit in NSW
4.3	Work with TCA and other jurisdictions to align telematics requirements with other national projects, such as the Heavy Vehicle National Law Review and the Heavy Vehicle Road Reform
4.6	Work with TCA to increase the functionality and useability of telematics data for industry and local councils

6.5 Pillar 5: Strong partnerships

Collaborate with stakeholders to support and improve access

Since the first Policy was released in 2018, Transport has increasingly collaborated with industry, local councils, other NSW Government agencies and other states and territories to enhance freight outcomes, including more efficient freight connectivity and access that is necessary to support economic growth and the creation of successful places.

We continue to work with other jurisdictions and the NHVR, including as part of the development of the National Access Framework and review of the Heavy Vehicle National Law, to harmonise decision-making and approval processes, and support more efficient connections across state borders.

We are working with the NHVR to support a seamless customer experience for industry. This includes streamlining the application process through the NHVR portal and providing online interactive maps for high productivity vehicles.

We will use this Policy as a basis to work more closely with local councils to expand high productivity vehicle access across the local and regional road network and build their capability to undertake access assessments and smarter network management using telematics and data.

We will also need to work more systematically with other third parties, such as rail infrastructure managers and utilities providers, to ensure access assessments and approvals are done in a timely and efficient manner.

We have heard from stakeholders that local councils generally want support in terms of: better data on heavy vehicles using their roads; improved asset information for key roads and assets, such as bridges; and support with managing permits. We want to form relationships that add value and deliver meaningful support to local councils.

Our work on the AAAP will help local councils to make timely, consistent and data-driven access decisions by facilitating improved information in identifying industry requirements and optimal freight routes and connections and assessing network capacity and constraints including mass limits. This will support decisions to open up access on optimal local routes and the prioritisation of maintenance and network improvements to address barriers to access.

We will look to build upon previous partnerships with local councils and industry, and seek to expand those high productivity vehicle networks to include more local road and regional roads.

We will also engage with local councils, industry and community groups to improve public understanding of the safety, economic and environmental benefits of high productivity vehicles as well as address community perceptions of the safety risks associated with larger and heavier vehicles.

We are also forming stronger relationships with other NSW Government agencies such as the NSW Department of Climate Change, Energy, the Environment and Water, Department of Planning, Housing and Infrastructure and Department of Regional NSW, to ensure that strategic transport and land-use planning consider opportunities for heavy freight connectivity and access. Greater engagement across the NSW Government would also improve our understanding of levers and triggers for future industrial areas and precincts or major development projects while providing the opportunity to communicate future freight needs.

	Pillar 5: Strong partnerships Actions
5.1	Engage with local councils to inform and encourage the development of networks for high productivity vehicles on local and regional roads
5.2	Investigate opportunities to leverage existing road grant funding programs and/or trial new alternative funding approaches to encourage greater access on local and regional roads
5.3	Provide guidance, tools and data to local councils, particularly via the AAAP, to support access assessments, particularly local road capacity and capability of sensitive assets to accommodate high productivity vehicles and other RAVs, such as OSOM vehicles
5.4	Develop guidance materials to support transport and land-use planners in considering requirements for high productivity vehicle and other RAV access in planning, particularly for strategic precincts, intermodal terminals and logistics hubs

7 Supporting broader efforts

The Policy aims to complement and support broader initiatives at the national and state levels to improve heavy vehicle access and enhance the safety, sustainability, and productivity of heavy vehicles across the NSW road network.

This is not an exhaustive list, but provides an overview of key relevant projects underway that we intend to support and leverage:

- Review of the *Heavy Vehicle National Law (HVNL)* – NSW is participating in a process led by the National Transport Commission (NTC) to reform the HVNL to simplify the law and improve both safety and productivity – without compromising one for the other. The review aims to streamline the access process to reduce the need for permits and support quicker, easier access decisions.
- *National Access Framework for Heavy Vehicles (NAFHV)* – Transport is leading this national reform piece in collaboration with stakeholders to develop the NAFHV to realise the benefits of best-practice access decision-making through improved collaboration among road managers and industry. The National Access Framework for Heavy Vehicles provides an opportunity to optimise access to the national road network for high productivity vehicles that improve road safety while reducing emissions and infrastructure wear.
- *Land Transport Market Reform (Heavy Vehicle Road Reform)* – National heavy vehicle charges are designed to recover the heavy vehicle share of road expenditure based on a set of national pricing principles that seeks to efficiently recover the cost by governments of providing road infrastructure for heavy vehicles. A new approach is being developed which aims to transform the provision of road infrastructure into an economic service where feasible. This would see a market established that links road user needs with the level of service they receive, the charges they pay and the investment of those charges back into road services.

  Heavy Vehicle Road Reform is the first stage of this reform and includes customer- driven national service level standards which will operate alongside the HVAP to optimise the safety, sustainability and productivity of our road network. This reform will deliver a national road user charging and payment system that provides visibility and assurance around heavy vehicle road user charges to ensure that charges are going towards road maintenance and improvement.

- *National Freight and Supply Chain Strategy* – This Strategy and each Australian jurisdictions' Implementation Plans outline actions to work towards nationally coordinated and well-planned freight systems to support a strong and prosperous Australia. Developed by all Australian governments with extensive input from industry, the Strategy commits to national action in four critical areas: smarter and targeted infrastructure; enable improved supply chain efficiency; better planning, coordination and regulation; and better freight location and performance data.
- *National Heavy Vehicle Regulator policy and regulatory reform program* - Transport continues to collaborate with the NHVR and other jurisdictions to improve the regulatory framework for heavy vehicles, including engaging on the ongoing review of the PBS scheme and the development of industry codes of practices.
- *Austroads Freight Taskforce Work Program* – Transport, along with transport agencies from around Australia and New Zealand, collaborate to progress an ambitious research agenda. The current agenda includes a focus on developing an intelligent, automated system to support road managers' access decision-making which Transport is leading in collaboration with Austroads and Tasmania.
- *National Telematics Framework* – provides a national platform for the use of telematics and related intelligent technologies. The Framework outlines definitions, rules, technical standards, operating procedures, and certification to establish consistency and trust between participants. The Framework supports different telematics applications, such as IAP and RIM, and schemes, such as *Farm Gate*, across Australian jurisdictions to deliver data services to a range of users.
- The *Movement and Place Framework* and *Road User Space Allocation Policy* provide guidance on the planning and operation of transport networks to achieve balance between the movement of goods and services with the amenity and quality of places. They help guide local road managers in making freight access decisions that better meet local needs.

More information about Transport 's freight projects and heavy vehicle access in NSW can be found on the Transport website.

Appendix A: Access priorities and PBS network opportunities

The Policy focuses on a strategic approach to improving and upgrading roads, to align with the projected population growth, development of strategic centres across NSW and freight movement patterns.

Appendix A is not intended to be an exhaustive list of the NSW road network but rather focuses on strategic routes strengthening north-south and east-west connections, and improving first and last-mile access. The proposed PBS network outlines Transport's vision for access which will be progressively implemented as future networks are designed and upgraded.

Sub priority	Roads	Current PBS network	Proposed PBS network
Improve north-south connections			
North-south connectivity across Greater Sydney	M7 Motorway	2B	3
	A3	2B	2
Connectivity to/ through north, north-west and Far West NSW and to Queensland	Pacific Highway	South of Newcastle – 2B and 1; North of Newcastle – 2B	South of Newcastle: 2; North of Newcastle: 3
	Hunter Expressway	2B	3
	Kamilaroi Highway	Willow Tree to Gunnedah – 2B; Gunnedah to Narrabri – limited 3A; West of Narrabri – 3A	3
	M1 Pacific Motorway	2B	3
	Central Coast Highway Corridor	1 and Limited 2B access	2
	Wyong Road Corridor	2B	2
	New England Highway	2B	South of Willow Tree 3; North of Willow Tree: 2
	Newell Highway	3A	3 (as well as on roads west of the Highway and roads east of the Highway currently approved for Type 1 A-Double Road Trains)
	Silver City Highway	3A	3
	Castlereagh Highway	South of Gilgandra – 2B, except Dunedoo to Mendooran – 2A; North of Gilgandra – 3A	West of Newell Highway: 3 East of Newell Highway: 2

Sub priority	Roads	Current PBS network	Proposed PBS network
	Mitchell Highway	Bathurst to Dubbo – 2B; Dubbo to North Bourke – 3A; North Bourke to QLD Border 4A	North of Bourke: 4 Bourke to Dubbo: 3, East of Dubbo: 2
	Thunderbolts Way	Limited 2A	2
	Bucketts Way	Limited 2A Port Stephens Council: 1	2
	John Renshaw Drive	Limited 2B (Kurri Kurri to New England Highway)	Between the M1 Pacific Motorway and Hunter Expressway: 3
	Summerland Way	Grafton to Casino – 2B, except a short section near Junction Hill; Casino to Kyogle – 2A; Kyogle to QLD Border - Level 1	South of Kyogle: 2; North of Kyogle: 1
Connectivity to/ through south, south-west and Far West NSW and to ACT, Victoria and South Australia	Princes Highway	Limited 2A	South to Kings Highway: 2, Kings Hwy to Snowy Mt Hwy, Bega: 1, South of Bega: 2
	Hume Highway	Limited 2B	3
	Picton Road	2B	2
	M1 Princes Motorway	2B	3
	Appin Road	2B	2
	M92 Nerriga Road (between Nowra and Braidwood)(regional road)	Braidwood to Durran Durra: 2A (conditional)	2
	Illawarra Highway	Macquarie Pass to Albion Park: 1 (conditional)	Macquarie Pass: 1; Remainder: 2
	Barton Highway	2B	2
	Cobb Highway	3A (with restrictions);	3
	Olympic Highway	2B (with restrictions); Wagga and Junee: 3A (conditional)	3
	Monaro Highway	2B (with restrictions)	2
	Kidman Way	3A, except in Griffith and Hillstown	3
	Federal Highway	2B	2
	Goldfields Way	2B	3

Sub priority	Roads	Current PBS network	Proposed PBS network
	Improve east-west connections		
East-west connectivity across Greater Sydney	M2 Motorway	2B	West of Northconnex: 3; East of Northconnex: 2
	M4 Motorway	2B	West of M7: 3; East of M7: 2
	M5 Motorway	2B	To M7: 3; East of M7: 2
	M7 Motorway	2B	3
	Parramatta Road	2B	1
	Great Western Highway	Parramatta to Emu Plains: 2B, except Nepean River Bridge; Emu Plains to Marrangaroo: Level 1; Marrangaroo to Bathurst: 2B	2
Connectivity to/ through western NSW and to South Australia and Victoria	Golden Highway	2A and Limited 2B	3
	Sturt Highway	2B; Wagga Wagga to Narrandera: 3A (conditional)	3
	Waterfall Way	Armidale to Dorrigo: 2B; Dorrigo to Thora: Level 1; Thora to Pacific Highway: 2B (conditional)	Dorigo to Thora: 1; Remainder: 2
	Oxley Highway	Port Macquarie West to Wauchope West: 2B; Wauchope West to Fenwicks Rd, Yarrowitch: 1; Fenwicks Rd, Yarrowitch to Tamworth West: 2B; Tamworth West to Newell Highway: 3A (conditional); West of Newell Highway: 3A	Yarrowitch to Wauchope: 1; Remainder East of Tamworth: 2; West of Tamworth: 3
	Bruxner Highway	Pacific Highway to Casino: 2B; Casino West to Tenterfield: 1; Gwydir and Moree Plains Shires: 1	West of Tenterfield: 3; East of Tenterfield: 2
	Gwydir Highway	Grafton to Inverell: 2B; Inverell to Biniguy: 3A (conditional); Biniguy to Walgett: 3A	3
	Burley Griffin Way	Limited 2B; Stockinbingal to Newell Highway: 3A (conditional); Ardlethan to Bibul: 3A;	West of Stockinbingal: 3; East of Stockinbingal: 2
	Riverina Highway	2B; Limited 3A	3
	Lachlan Valley Way	Yass to Forbes: 2B; Lake Cargelligo to Wallanthery: 2A (conditional); West of Hillston: 2A (conditional)	2

Sub priority	Roads	Current PBS network	Proposed PBS network
	Snowy Mountains Highway	Buckleys Rd to Wattle Rd: 1; Adaminaby to Talbingo: 1; Remainder: 2B	Talbingo to Adaminaby: 1; Brown Mountain: 1; Remainder: 2
	Kings Highway	Batemans Bay to Braidwood: 1; Braidwood to Goulburn Rd: 2A; Goulburn Rd to ACT border and ACT border to Queanbeyan East: 2B	Braidwood to Princes Hwy: 1: Remainder: 2
	Mid Western Highway	2B	West of Newell Highway: 3: East of Newell Highway: 2
	Barrier Highway	3A	3
Improve first and last-mile access			
Access to Strategic sites	*To be identified and prioritised based on engagement with industry and local road authorities Listed below are committed projects		
	Western Sydney Airport Precinct	2B	3
	Wagga Wagga SAP	Limited 2A	3
Access on local roads	*To be identified and prioritised based on engagement with industry and local road authorities Listed below are committed projects		
	Wagga Wagga: Eunony Bridge Road, Brynes Road and Merino Road	Limited 2A	3

Appendix B: Proposed networks and access conditions for heavy vehicle classes

Networks for PBS vehicles

PBS vehicles	Proposed network	Exceptions/ Conditions	Access conditions in the Western zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)	Access conditions in the Eastern zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)	Access conditions in the Urban zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)
PBS Level 1 vehicles – at any length up to 60m	Conditional area access by exception	• RIM on GML/ CML • TMA on HML/ Tier 2 & 3 • TMA when longer than 20m	• Conditional area access by exception	• Conditional area access with consideration of signal timing • Advanced safety equipment when longer than 20m	• Conditional area access to key distribution centres by exception • Advanced safety equipment when longer than 20m • Advanced pedestrian monitoring when longer than 20m
PBS Level 2 vehicles – at any length up to 60m	26m B-double network by exception	• RIM on GML/ CML up to 30m long • TMA on HML/ Tier 2 & 3 • TMA when longer than 30m	• 26m B-double network by exception	• 26m B-double network by exception • Advanced safety equipment when longer than 30m • Enrolled in TMA	• 26m B-double network by exception • Advanced safety equipment when longer than 30m • Advanced pedestrian monitoring when longer than 30m • Enrolled in TMA
PBS Level 3 vehicles – at any length up to 60m	Type 1 A-double network by exception	• RIM on GML/ CML up to 42m long • TMA on HML/ Tier 2 & 3 • TMA when longer than 42m	• Type 1 A-double network	• Hume Highway; M1/ Pacific Highway; Hunter Expressway; New England south of Willow Tree and Kamilaroi Highway • Advanced safety equipment • Enrolled in TMA	• Hume Motorway; M7; M2 west of Northconnex; Northconnex; M1 • Advanced safety equipment • Advanced pedestrian monitoring • Enrolled in TMA
PBS Level 4 vehicles – at any length up to 60m	Type 2 Road train network	• Must be enrolled in RIM for GML/CML or TMA/IAP for HML	• Type 2 Road train network	• No access	• No access

Note: PBS vehicles up to 60 metres will be permitted access to all existing roads except when existing roads have constraints including:

Rail crossings; Traffic signal timing; Short stacking; Unsuitable bridges; Insufficient overtaking; Or any other constraint that will not allow for safe access of these vehicles.

The construction of new roads should be built to accommodate 60 metre PBS vehicles.

Upgrades to existing roads should address any constraints to enable access for 60 metre long PBS vehicles, as far as reasonably practicable.

Note: Sensitive infrastructure and high-risk loads may require additional assurance.

These conditions are indicative and will be dependent on the specific vehicle and freight routes.

Networks for prescriptive heavy vehicles

Prescriptive vehicles	Proposed network	Exceptions/Conditions	Access conditions in the Western zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)	Access conditions in the Eastern zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)	Access conditions in the Urban zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)
19m semi-trailer **Rigid trucks** **19m general access B-double** **19m truck-and-dog trailer**	General access	• Enrolled in RIM when operating at CML • Enrolled in TMA/ IAP when operating at HML • Over approved bridges only when operating at HML	• General access – no network upgrades required apart from bridge strengthening	• General access – no network upgrades required apart from bridge strengthening	• General access – no network upgrades required apart from bridge strengthening
26m B-double	26m B-double network + conditional general access in Western Zone	• Must be enrolled in RIM for GML/CML or TMA/IAP for HML	• Conditional general access • Over approved bridges only • Across approved rail crossings only • Most direct safe and accessible route to destination from approved network on local roads, no through travel using local road network • Some urban local roads may be restricted • Must be enrolled in minimum RIM	• As per 26m B-double network map	• As per 26m B-double network map
Road Train type 1 (including A-double, AB-triple and B-triple)	Type 1 Road train network	• Must be enrolled in RIM for GML/CML or TMA/IAP for HML	• Type 1 Road train network • Access east of the Newell Highway available to and from intermodal terminals, grain terminals and saleyards (Type 1 A-double livestock vehicles must have tri-axle dolly not exceeding GML mass)	• No access	• No access
Road Train type 2 (53.5m A-triple)	Type 2 Road train network	• Must be enrolled in RIM for GML/CML or TMA/IAP for HML	• Type 2 Road train network	• No access	• No access
Special purpose vehicles including Cranes, Concrete pumps and Drill Rigs	SPV network	• All SPVs, including mobile cranes, must be enrolled in IAP, TMA, or type-approved mass monitoring schemes • SPVs deemed high risk or travelling on sensitive assets may be subject to conditions that provide additional assurance • Travel across approved bridges only • Must use most direct safe and accessible route to and from destination when travelling on conditionally area approved local roads • Some cranes may require additional crane specific pilot vehicles	• SPV network	• SPV network	• SPV network
OSOM – Up to 30m long; 5m wide; 5m high and 115 tonne GCM	Conditional general access	• Must be enrolled in RIM or TMA • Travel across approved bridges only • Travel across approved rail crossings only • Must use most direct safe and accessible route to and from destination when travelling on conditionally area approved local roads • Some vehicles may require pilot and/or escort vehicles	• OSOM network	• OSOM network	• OSOM network

Prescriptive vehicles	Proposed network	Exceptions/Conditions	Access conditions in the Western zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)	Access conditions in the Eastern zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)	Access conditions in the Urban zone (*based on NHVR Agricultural Heavy Vehicle Zone Map)
Agricultural Vehicles	Conditional general access by exception	• Must be enrolled in RIM – mobile phone-based application permitted • Travel across approved bridges only • Travel across approved rail crossings only • Must use most direct safe and accessible route to and from destination when travelling on conditionally area approved local roads • Some vehicles may require pilot and/or escort vehicles	• As per Agricultural vehicle network map	• As per Agricultural vehicle network map	• As per Agricultural vehicle network map

Note: Network requirements applicable to all prescriptive vehicle classes

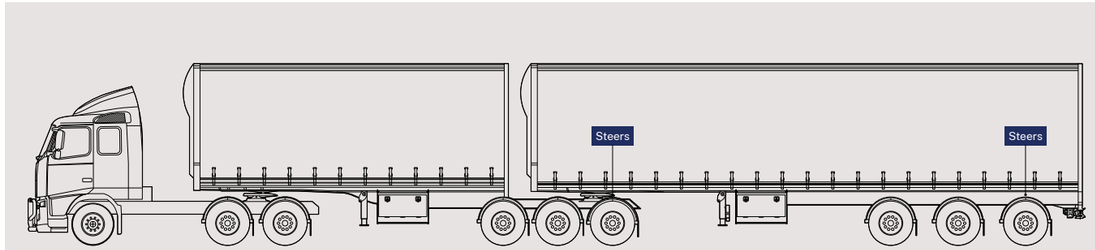
- Strengthen or replace unsuitable bridges
- Upgrade unsuitable rail crossings
- Increase parking bay sizes and use of parallel parking bays in rest areas and availability of rest areas generally
- Improve decoupling opportunities, for instance near M7/M4 interchange or the Western Sydney International Airport etc.
- Consider improved overtaking opportunities – especially on single carriageway regional roads

Note: Sensitive infrastructure and high-risk loads may require additional assurance. These conditions are indicative and will be dependent on the specific vehicle and freight routes.

Appendix C: Innovative vehicle design templates

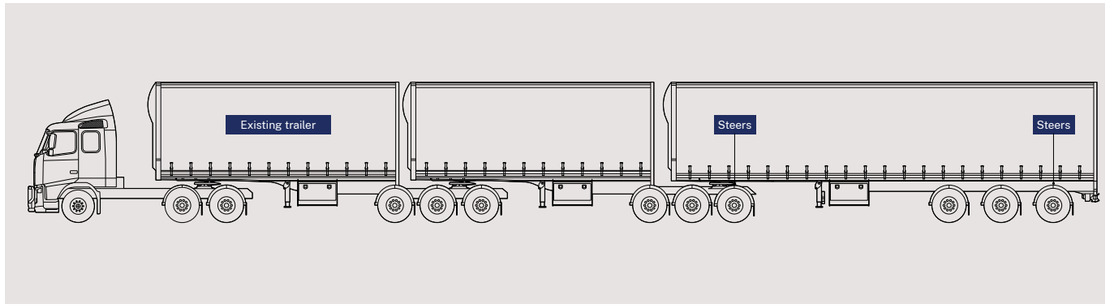
Proposed vehicle designs (not yet approved)

Livestock vehicles



26m PBS Level 1 Livestock B-double

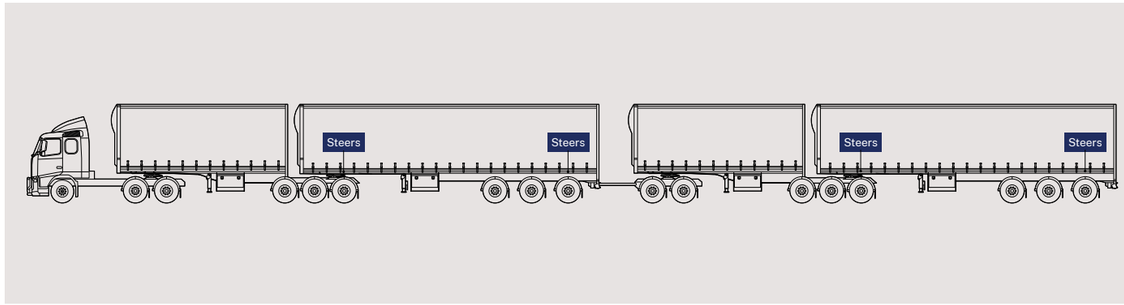
A general access 19m semi-trailer that can carry 24 tonnes in payload performs the same as this vehicle. However, the PBS level 1 B-double can carry over 38-tonne payload, which is a 61 per cent increase in payload, while achieving the same on-road performance as the general access vehicle.



PBS Level 2 Modular B-triple

This vehicle offers the same on-road performance as a traditional 26m B-double but has the capacity to carry over 52 tonnes, which is more than a 30 per cent increase in payload compared to a 26 metre B-Double. This design is also able to take current trailer stock and add radically improved combinations, taking into consideration the cost and supply chain barriers that are involved in currently acquiring new trailer stock.

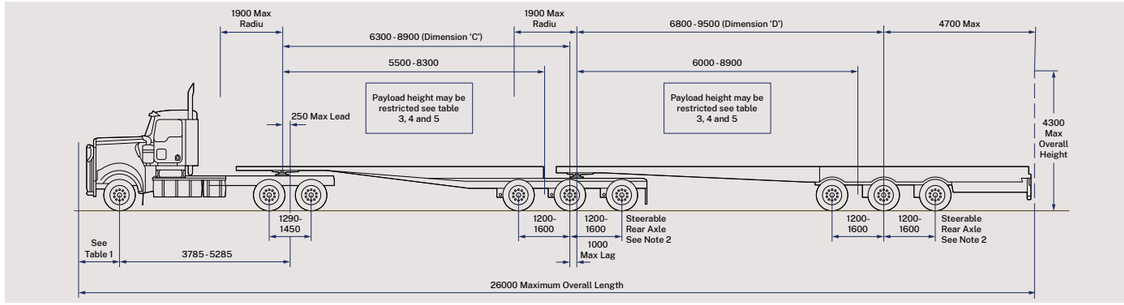
PBS Level 3 BAB-quad



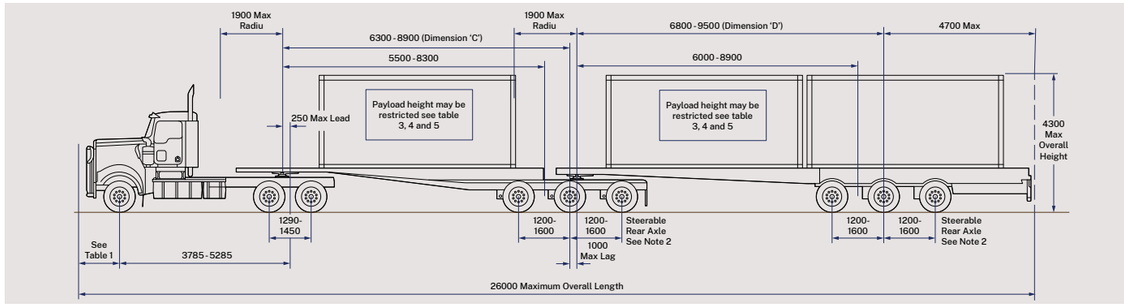
In comparison to a type 1 road train (A-double), which can carry a payload of 49 tonnes, this PBS Level 3 BAB-quad design can carry over 78-tonne payload. That is a 60 per cent increase in payload, while still performing the same as a type 1 road train.

Same approach on most other commodity vehicles except tankers

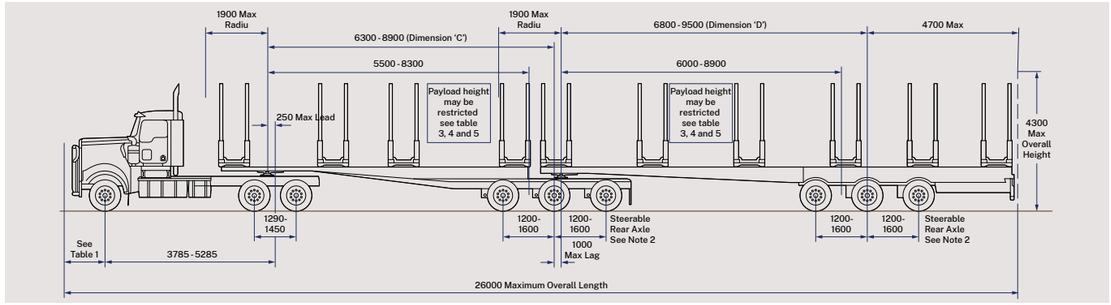
Flat-top variant



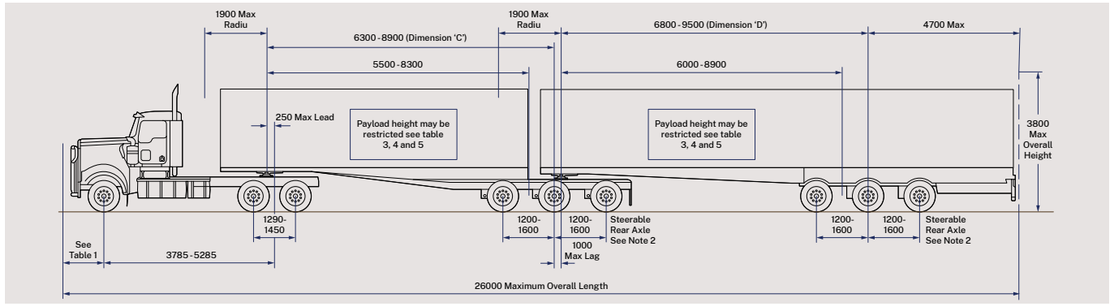
Skel trailer variant



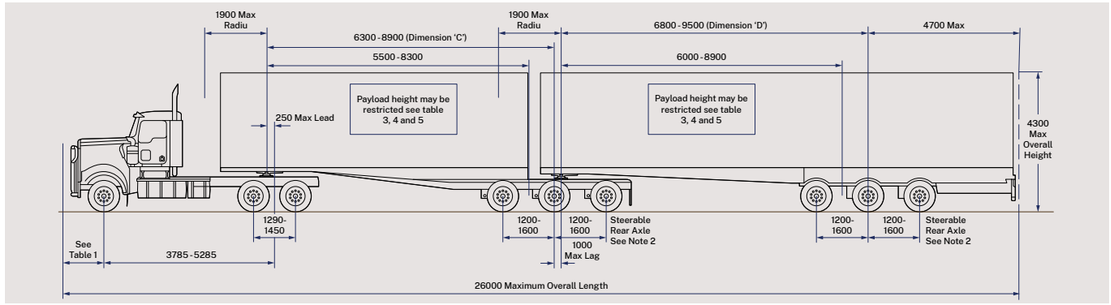
Logging trailer variant



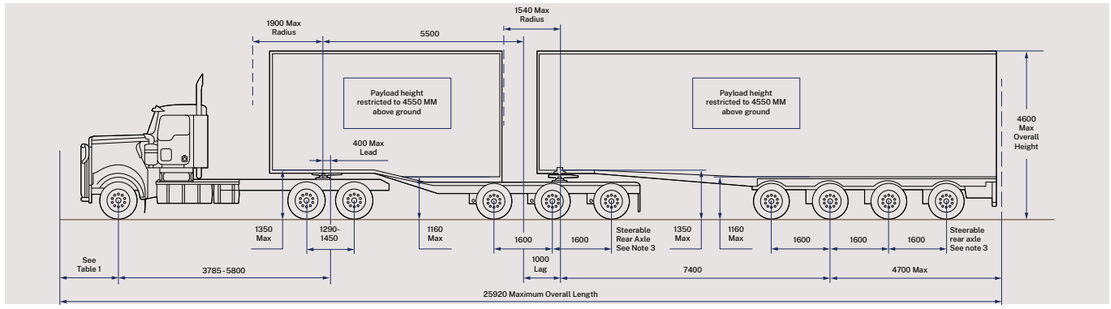
Bin variant



Curtainsider/refridgerated trailer variant



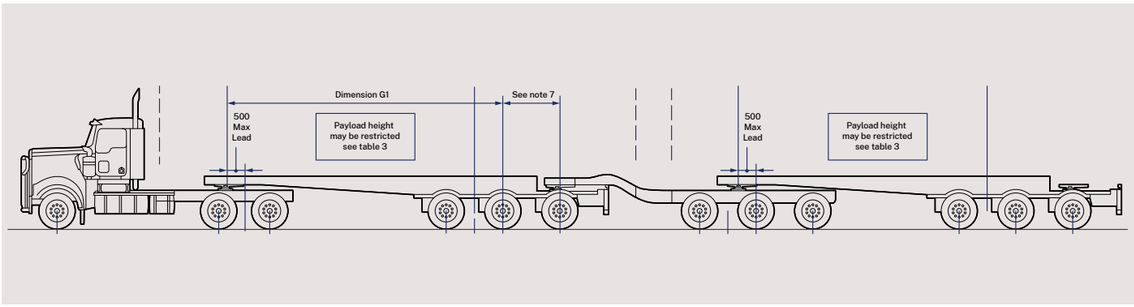
Livestock trailer variant



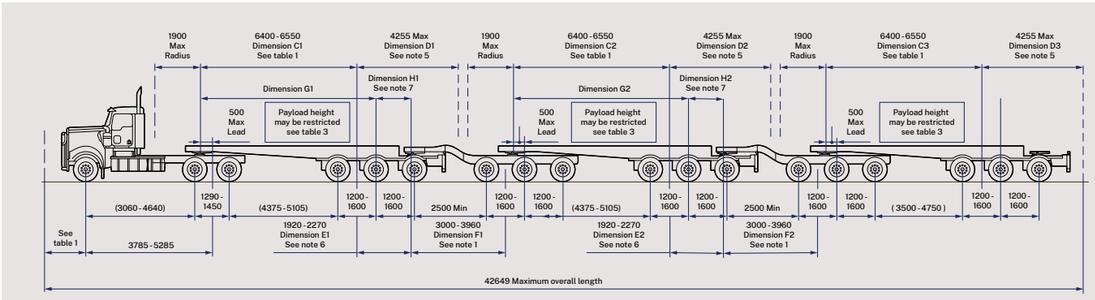
Super innovative vehicles

The following vehicles feature new trailer designs that can achieve further safety, productivity, and performance improvements that can be used on the NSW road network today.

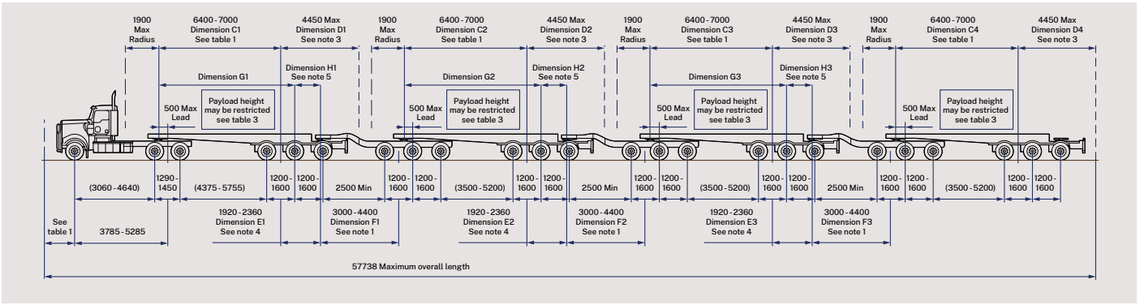
31m PBS 1 A-double – 48 tonnes payload



43m PBS 2 A-triple – 72 tonnes payload



58m PBS 3 A-quad – 96 tonnes payload



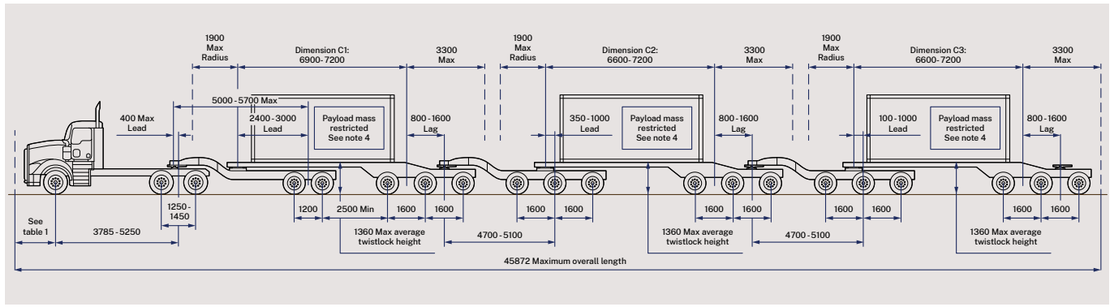
Intermodal vehicles

Intermodal vehicles have been developed for all four levels of PBS. These vehicles can carry 20ft containers at rail masses up to 35 tonnes per container. They are ideal at improving the efficiency of the containerised grain task using rail.

Not only do these vehicles meet PBS and carry rail mass containers on the road they also operate at GML/CML axle masses. Masses beyond CML are generally a significant inhibitor for access on Local Council roads.

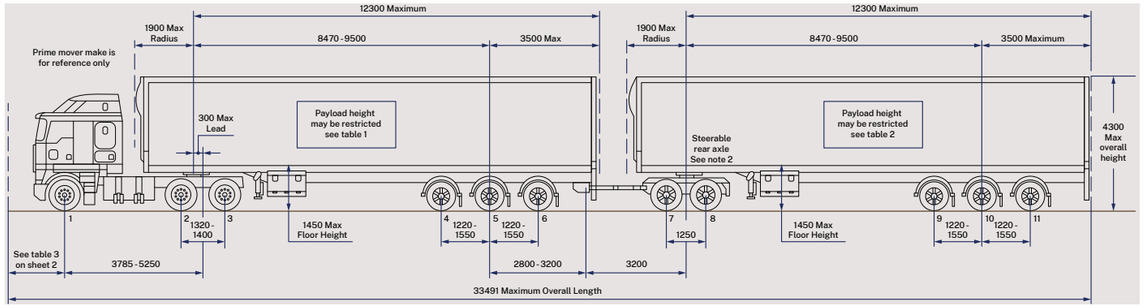
The intermodal vehicles are modular as well meaning the trailers can be added or removed to shift between level 1, 2, 3, and 4 vehicles. A shift to the level 4 version requires a different prime mover or more innovative powered axles to be fitted to the trailers. Below is the PBS level 3 intermodal vehicle.

PBS Level 3 intermodal vehicle

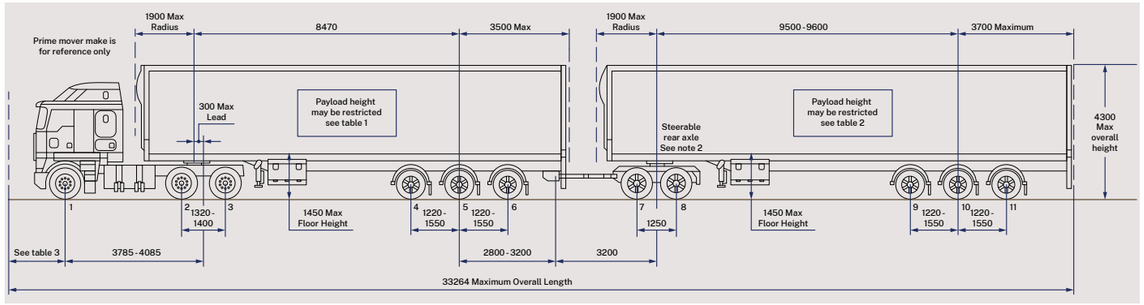


Supermarket trailers

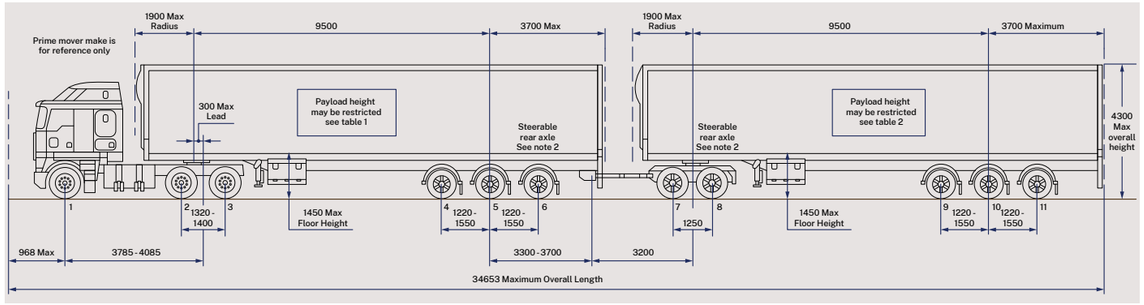
33m PBS 2 A-double – 2 x 22 pallet



33m PBS 2 A-double – 1 x 22 pallet & 1 x 24 pallet



34m PBS 2 A-double – 2 x 24 pallet



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